2010

The effects of a self-regulation learning-strategies instructional program on middle-school students' use of learning strategies and study tools, self-efficacy, and history test performance

Elizabeth Lyons-Wagner

Follow this and additional works at: https://repository.usfca.edu/diss

Recommended Citation

This Dissertation is brought to you for free and open access by the Theses, Dissertations, Capstones and Projects at USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. It has been accepted for inclusion in Doctoral Dissertations by an authorized administrator of USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. For more information, please contact repository@usfca.edu.
THE EFFECTS OF A SELF-REGULATION LEARNING-STRATEGIES INSTRUCTIONAL PROGRAM ON MIDDLE-SCHOOL STUDENTS’ USE OF LEARNING STRATEGIES AND STUDY TOOLS, SELF-EFFICACY, AND HISTORY TEST PERFORMANCE

A Dissertation Presented to
The Faculty of the School of Education
Learning and Instruction Department

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Elizabeth C. Lyons-Wagner
San Francisco, California
December 2010
THE UNIVERSITY OF SAN FRANCISCO

Dissertation Abstract

The Effects of a Self-Regulation Learning-Strategies Instructional Program on Middle-School Students’ Use of Learning Strategies and Study Tools, Self-Efficacy, and History Test Achievement

The purpose of this study was to investigate the effects of a self-regulation learning-strategies instructional program on sixth-grade students’ use of self-regulation learning strategies and study tools, history test achievement, and self-efficacy for self-regulated learning. This study used a pretest-posttest quasi-experimental design. Learning was measured using quantitative and qualitative methods. Quantitative data included treatment-group and comparison-group history test scores and scores on two instruments: an adjusted version of the School Motivation and Learning Strategies Inventory (SMALSI) and the Self-Efficacy for Self-Regulated Learning Scale (SESRLS). The adjusted SMALSI measured four learning strategy constructs: study strategies, organizational strategies, time-management strategies, and test-taking strategies. Qualitative data were gathered through semistructured interviews and observations with think-alouds from a representative sample of medium- and low-achieving focus-group students. In addition, treatment-group students filled out study diaries detailing how long they studied, with whom they studied, and use of study tools.

This study took place at a public, suburban middle school in the San Francisco East Bay during an 8-week period of instruction that occurred in the researcher’s history classes. Students in two history classes participated in the study. The treatment group consisted of 26 students receiving the treatment. The treatment group experienced 10 self-regulation learning-strategy lessons that were integrated with history curriculum over the course of
two units of instruction. There were 31 comparison group students who experienced traditional history instruction.

The data suggest that treatment-group students experienced statistically significant differences in the areas of time-management and test-taking strategies constructs as reported on the SMALSI. There were no statistically significant differences on the study strategy and organization constructs; however, low-achieving treatment-group students did report higher means differences on the study strategies inventory than the low-achieving comparison-group students. There were no statistically significant differences between the treatment and comparison group for the history test scores and the SESRLS.

Qualitative data revealed that treatment-group students increased the amount of time they studied and the number of study tools they used. In addition, focus-group students demonstrated developmental shifts in the application of self-regulation learning strategies. Students with learning disabilities demonstrated less growth than the students without learning disabilities.
This dissertation, written under the direction of the candidate’s dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements for the degree of Doctor of Education. The content and research methodologies presented in this work represent the work of the candidate alone.

Elizabeth C. Lyons-Wagner
Candidate

Dissertation Committee

Dr. Patricia Busk
Chairperson

Dr. Mathew Mitchell

Dr. Peter Williamson

Dec. 17, 2010
Date
ACKNOWLEDGEMENTS

First, I would like to thank Dr. Patricia Busk, my dissertation chair. She spent countless hours reading over my lengthy drafts showering her feedback on nearly every page. I am grateful for her dedication to my learning and ensuring that I executed my work accurately. I also want to thank her for always being available to offer suggestions and sage advice. I would have been lost without her guidance. I appreciate her patience, gentleness, and positive spirit.

I would also like to thank Dr. Matthew Mitchell for his advice and support in the areas of self-regulation and concept map research. I especially want to thank him for the fabulous classes I enjoyed taking from him: Architecture of Learning, Cognitive Psychology, Motivation, and Creativity. I thoroughly enjoyed those classes and chose to do my research in the cognitive psychology area because of the interest he sparked through his instruction. I learned so much from his classes.

In addition, I would like to thank Dr. Peter Williamson for his detailed feedback on my proposal. He offered constructive suggestions that improved the quality of the study. I appreciate his willingness to respond to questions and desire to share his expertise and knowledge.

I am also grateful to my professional family of friends who have provided me the support I needed to begin, continue, and finish this journey. First, I would like to thank Kim Ortiz, my former principal and mentor. You believed in me and trusted me to take professional risks. It was because of my job in TVTIP that I was able to pursue my doctorate. I would also like to thank Mr. Jim Hansen who provided me with the support I needed to conduct my study. I would like to thank Sarah Gahl for being a constant support both professionally and academically. Your willingness to listen and share meant the world to me. I also want to thank Julie Twisselman and Erika Eastman for helping me with my study. I valued the insights you offered as you observed and coded data. There are also numerous other colleagues who have inspired my learning and have provided me support throughout my journey. I am blessed to have worked with such amazing professionals. I could not have done this without you.

Next, I would like to thank the supportive family of friends I made at USF on my dissertation journey. Without you I would not have been able to make it through this bumpy road. You lifted me up when I was down. You shared your wisdom. You made me smile. You offered me hope when I was feeling down. I could not have finished this document without your ongoing words of inspiration. I will never forget you!

Lastly, I would like to thank my wonderful husband, Hal, for indulging me in my lofty ambitions. You never complained about my constant absences, the rising tuition costs, or my hyperfocused mindset. I am so grateful you supported me throughout this tumultuous process. I feel so blessed. Now we can have some fun!!!
DEDICATION

This dissertation is dedicated to my dear family, friends, and students:

To my amazing husband, Harold Vincent Wagner. You accept me for who I am and allow me to live to my highest potential. I treasure our relationship above all others in my life. Without your support, I would not have even considered this endeavor.

To my beloved father, William George Lyons. Thank you, dad, for the supportive phone calls, your interest in my passion, and the pride you felt in me. I wish I could tell you in person that I did it, but I know you are smiling down on me from heaven.

To my mother, Jean Lyons. You taught me the value of education. I have had a very full life because of the lessons I have learned from you.

To my dear friend, Dina Colman. Your cheerleading and never-ending support has meant the world to me. You have been there to listen and encourage me in the darkest of times. I will always treasure our end-of-the-semester retreats.

To my oldest friend, Christy Rolfson. You are the reason I graduated college. You are my greatest mentor. From the moment we met in eighth grade you have been teaching me and inspiring me. I could not be where I am today without your loving friendship.

To my past and future students. You are the reason I pursued my education further. Teaching you how to learn is the most precious gift I can offer you. It is my goal to help you feel confident in your ability to learn and embrace challenges knowing you have what it takes to reach your highest potential.
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>INTRODUCTION TO THE STUDY</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Statement of the Problem</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Purpose of the Study</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Background and Need</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Theoretical Rationale</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Self-Regulation Theory</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Self-efficacy for Self-Regulated Learning</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Acquisition of Academic Self-Regulation</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Learning Strategies Framework</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Significance of the Study</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Research Questions</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Definition of Terms</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>25</td>
</tr>
<tr>
<td>ii</td>
<td>REVIEW OF THE LITERATURE</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Middle School Transition</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Stage-Environment Fit</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Middle School Transition Research</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Middle School Achievement and High School Dropouts</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Self-Regulation Theoretical Models</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Assumptions of Theoretical Models</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Winne and Hadwin’s Model of Self-Regulation</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Pintrich’s Model of Self-Regulation</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Zimmerman’s Model of Self-Regulation</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Self-Regulation Instructional Models</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Butler’s Strategic Content Learning Model</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Harris and Graham’s Model of Self-Regulation Strategy Development</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Cleary and Zimmerman’s Self-Regulation Empowerment Program</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Self-Regulation Research Methodology</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Scope of Self-Regulation Research</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>Learning Strategies Theory</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>Learning Strategies Research</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Mnemonics Theory and Research</td>
<td>111</td>
</tr>
<tr>
<td></td>
<td>Concept Maps Theory and Research</td>
<td>114</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>119</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS Continued

CHAPTE R  III. METHODOLOGY ................................................................. 121
Research Design ........................................................................... 121
Location and Sample .................................................................. 125
Protection of Human Subjects ...................................................... 129
Instrumentation ........................................................................ 130  
  School Motivation and Learning Strategies Inventory ............... 130
  Self-Efficacy for Self-Regulated Learning Scale ...................... 135
  Self-Regulated Learning Strategies and Interview Schedule ...... 139
  Observations with Think-Aloud Protocol ................................. 142
  Study Tools ........................................................................... 143
Qualifications of the Researchers ................................................. 144
Subjectivity ............................................................................. 145
Treatment ............................................................................... 146
Data-Collection Procedures ....................................................... 155
Data Analysis ........................................................................... 156
Summary ................................................................................. 160

IV. RESULTS ................................................................................... 162
Introduction ............................................................................... 162
Descriptive Results ................................................................... 163
Assumptions ............................................................................ 168
Quantitative Results ................................................................. 170  
  Research Question 1 ............................................................... 170
  Research Question 2 ............................................................... 172
  Research Question 3 ............................................................... 173
Qualitative Results ................................................................... 174  
  Research Question 4 ............................................................... 174
  Self-Regulation Learning Strategy Interview and Observation Data .... 176
  Seeking Social Assistance Interview and Observation Data ........ 190
  Rehearsal and Memorization Interview and Observation Data .... 193
Research Question 5 ................................................................... 201
Merging of Quantitative and Qualitative Results ....................... 205
Summary ................................................................................. 207

V. SUMMARY OF FINDINGS, LIMITATIONS, DISCUSSION,  
IMPLICATIONS, AND RECOMMENDATIONS ............................ 210
Summary of Findings .................................................................. 211
Limitations ............................................................................... 217
Discussion of Results .................................................................. 218
Implications ............................................................................. 243
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS Continued</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendations</td>
<td>248</td>
</tr>
<tr>
<td>Conclusions</td>
<td>252</td>
</tr>
<tr>
<td>Afterward</td>
<td>256</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>260</td>
</tr>
<tr>
<td>APPENDIXES</td>
<td>276</td>
</tr>
<tr>
<td>Appendix A: Strategic Study Plan</td>
<td>277</td>
</tr>
<tr>
<td>Appendix B: Self-Regulation Learning Strategies Continuum of Development</td>
<td>279</td>
</tr>
<tr>
<td>Appendix C: Consent Forms</td>
<td>281</td>
</tr>
<tr>
<td>Appendix D: Interview Question Coding Sheet</td>
<td>295</td>
</tr>
<tr>
<td>Appendix E: Study Reflection Sheet</td>
<td>297</td>
</tr>
<tr>
<td>Appendix F: Sample Lesson Plans</td>
<td>299</td>
</tr>
<tr>
<td>Appendix G: Test Preparation Reflection Form</td>
<td>307</td>
</tr>
<tr>
<td>Appendix H: Transcripts</td>
<td>309</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Methodology Protocol</td>
<td>123</td>
</tr>
<tr>
<td>2. Population Sample Demographics</td>
<td>126</td>
</tr>
<tr>
<td>3. Sample Items from each SMALSI construct</td>
<td>133</td>
</tr>
<tr>
<td>4. Average Raw Scores for SMALSI Teen Standardization Sample</td>
<td>134</td>
</tr>
<tr>
<td>5. Self-Regulation Learning Strategies</td>
<td>140</td>
</tr>
<tr>
<td>6. Self-Regulation Interview Questions</td>
<td>141</td>
</tr>
<tr>
<td>7. Timeline for Self-Regulation Learning-Strategies Instruction Program</td>
<td>148</td>
</tr>
<tr>
<td>8. Overview of Self-Regulation Learning-Strategies Instructional Objectives and Activities</td>
<td>149</td>
</tr>
<tr>
<td>9. Data-Collection Timeline</td>
<td>156</td>
</tr>
<tr>
<td>10. Descriptive Statistics for Pretreatment and Posttreatment SMALSI T Scores by History Achievement Group</td>
<td>164</td>
</tr>
<tr>
<td>11. Frequencies of Pretreatment and Posttreatment SMALSI T Score Descriptors by History Achievement Group</td>
<td>166</td>
</tr>
<tr>
<td>12. Descriptive Statistics for Pretreatment and Posttreatment SESRLS Scores by History Achievement Group</td>
<td>167</td>
</tr>
<tr>
<td>13. History Test Percentage by History Achievement Group by History Achievement Group</td>
<td>168</td>
</tr>
<tr>
<td>14. Results of Two-Way ANOVA on Change Scores for the Study-Strategies Scale</td>
<td>171</td>
</tr>
<tr>
<td>15. Results of Two-Way ANOVA on Change Scores for the Organization Scale</td>
<td>171</td>
</tr>
<tr>
<td>16. Results of Two-Way ANOVA on Change Scores for the Time-Management Scale</td>
<td>172</td>
</tr>
<tr>
<td>17. Results of Two-Way ANOVA on Change Scores for the Test-Taking Strategies Scale</td>
<td>172</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>18. Results of Two-Way ANOVA on Change Scores for the SESRLS</td>
<td>172</td>
</tr>
<tr>
<td>19. Results of Two-Way ANOVA on Change Scores for History Tests</td>
<td>174</td>
</tr>
<tr>
<td>20. Evidence of Self-Evaluation Behaviors and Statements</td>
<td>177</td>
</tr>
<tr>
<td>21. Evidence of Organizing and Transforming Behaviors and Statements</td>
<td>178</td>
</tr>
<tr>
<td>22. Evidence of Goal-Setting and Planning Behaviors and Statements</td>
<td>181</td>
</tr>
<tr>
<td>23. Evidence of Seeking Information Behaviors and Statements</td>
<td>185</td>
</tr>
<tr>
<td>24. Evidence of Keeping Recording and Monitoring Behaviors and Statements</td>
<td>186</td>
</tr>
<tr>
<td>25. Evidence of Environmental Structuring Behaviors and Statements</td>
<td>189</td>
</tr>
<tr>
<td>26. Evidence of Self-Consequencing Behaviors and Statements</td>
<td>190</td>
</tr>
<tr>
<td>27. Evidence of Seeking Social Assistance from Peers Behaviors and Statements</td>
<td>191</td>
</tr>
<tr>
<td>28. Evidence of Seeking Social Assistance from Teachers Behaviors and Statements</td>
<td>192</td>
</tr>
<tr>
<td>29. Evidence of Seeking Social Assistance from Adults Behaviors and Statements</td>
<td>193</td>
</tr>
<tr>
<td>30. Evidence of Rehearsing and Memorizing Behaviors and Statements</td>
<td>194</td>
</tr>
<tr>
<td>31. Evidence of Reviewing Tests Behaviors and Statements</td>
<td>197</td>
</tr>
<tr>
<td>32. Evidence of Reviewing Notes Behaviors and Statements</td>
<td>198</td>
</tr>
<tr>
<td>33. Evidence of Reviewing the Textbook Behaviors and Statements</td>
<td>199</td>
</tr>
<tr>
<td>34. Evidence of Strategies Initiated by Other Persons Behaviors and Statements</td>
<td>201</td>
</tr>
<tr>
<td>35. Mean Number of Minutes Studied and Presence of Study Partners</td>
<td>202</td>
</tr>
<tr>
<td>36. Frequency of Students’ Use of Study Tools</td>
<td>203</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION TO THE STUDY

Statement of Problem

Middle school is a time of tremendous change for students. For some students, this change is relatively easy, and they adjust with few difficulties. For other students, the middle-school transition is filled with challenges. Research has found that between 20% and 50% of middle-school students experience difficulties with the changes associated with middle school (Carnegie Council on Adolescent Development, 1995; Deemer, McCotter, & Smith, 2003). Researchers have identified three transitions students experience as they begin middle school (Akos & Galassi, 2004). Students experience social changes when they begin middle school. They leave their small elementary schools where they know most of their peers and move to large middle schools where they know few students. In addition, students experience procedural adjustments as they begin middle school. Students must learn how to organize materials for six different classes, understand the demands of numerous teachers, open lockers, and move around a new campus. Middle-school students also experience an academic transition. They must learn how to study for new curricular areas, experience increased workloads, and need to develop independent learning skills (Akos, 2002; Deemer, McCotter, & Smith, 2003; Dembo & Eaton, 2000; Schunk, 2005).

Through welcoming programs, peer mentors, social events, and orientations, schools support students with the social and procedural transitions (Eccles & Roeser, 2009). Researchers have found that students respond positively to programs that ease
students’ social and procedural transition into middle school; however, schools do not appear to have programs designed to support students with the academic transition to middle school (Eccles & Roeser, 2009; Midgley, Middleton, Gheen, & Kumar, 2002).

Colleges and universities offer programs that assist students with the academic transition to their institutes. In an effort to support their students, institutes of higher education have developed self-regulation learning-strategy courses (Cukras, 2006; Hattie, Biggs & Purdie, 1996; Weinstein et al., 2000). The major aim of these courses is to assist students by improving their motivation, mnemonic skills, self-regulation, and study-related skills. In these courses, students learn to identify and use appropriate learning strategies given the learning objectives of specific academic tasks (Cukras, 2006; Weinstein et al.). Research conducted with self-regulation learning-strategies intervention courses has produced many positive results including higher grade-point averages, improved retention, and increases in graduation rates (Cukras; Fleming, 2002; Weinstein et al.). In addition to investigating the impact of self-regulation learning strategies that are taught in learning-strategy courses, researchers have investigated the impact of integrating self-regulation learning strategy curriculum with general course curriculum and have found positive results (Masui & De Corte, 2005). Overall, students who learned self-regulation learning-strategies became efficient, thoughtful, and independent learners (Azevedo, Cromley, & Siebert, 2004; Cukras; Weinstein et al.). Researchers have found that students with self-regulation learning-strategies training experience higher grade-point averages, report higher self-efficacy and motivation for learning, and have higher graduation rates (Kiewra, 2002; Kitsantas & Zimmerman, 2006; Masui & De Corte, 2005;
Students should not have to wait until they reach college to receive explicit instruction in self-regulation learning strategies for academic studying. They should receive it as they begin secondary schooling.

The positive results postsecondary students experience in learning-strategy classes have been replicated with middle-school students in specific subject areas. There have been numerous studies that have investigated ways to support middle-school students in specific curricular areas such as reading comprehension, writing, and mathematics (Harris & Brown, 1996; Horner & Shwery, 2002; Palinscar & Brown, 1984; Stoeger & Ziegler, 2005). In addition, there have been programs that have been developed to support students with homework completion (Eliam, 2001; Stoeger & Ziegler, 2008). These studies have demonstrated the positive effects of teaching middle-school students cognitive strategies in the specific curricular areas previously described.

Challenges occur when students study independently. When students study alone, they autonomously choose from a multitude of strategies and identify which are best to use with each unique learning task (Dembo & Eaton, 2000; Zimmerman, 1998). This skill falls under the realm of studying and requires the use of self-regulation learning strategies (Zimmerman, 1998). Self-regulation can be defined as self-generated thoughts, feelings, and actions used for attaining academic goals. Learning strategies are defined as thoughts, behaviors, beliefs, or emotions that facilitate the acquisition, understanding, or later transfer of new knowledge and skills (Weinstein et al., 2000). Unfortunately, a dearth of research exists that has
investigated the effects of self-regulation learning-strategies programs with middle-school students in the area of studying (Akos & Galassi, 2004; Weinstein et al.).

Cleary and Zimmerman (2004) conducted one of the few studies that have investigated studying using self-regulation learning strategies with middle-school students. Their study utilized a self-regulation learning-strategies instructional model called the Self-Regulation Empowerment Program (SREP). This study investigated the effects of teaching middle-school students how to employ self-regulation learning strategies as they studied for their science classes. Originally, the SREP model was designed for one-on-one tutoring with a student and a self-regulation coach. Students who participated in this program experienced positive results. A follow-up study by Cleary, Platten, and Nelson (2008) adjusted the SREP model so a self-regulation coach worked with a small group of high-school students in an after-school intervention program. Students in the Cleary et al. study also experienced positive outcomes.

To date, no studies have investigated the impact of teaching academic studying by integrating self-regulation learning-strategies instruction with the general history curriculum in an intact history class. This study investigated the effects of integrating a self-regulation learning-strategies instructional program in an intact middle-school history class. This study filled a gap in the self-regulation learning-strategies research and offers an instructional approach that can support students with the academic transition they experience as they begin middle school.

**Purpose of the Study**

The purpose of this study was to investigate the effects of a self-regulation
learning-strategies instructional program on sixth-grade students’ academic achievement, use of self-regulation strategies, self-efficacy for self-regulated learning, and use of study tools. This study took place over an 8-week period in students’ history class. During the study, students learned how to apply cycles of self-regulation as they studied for their history tests. Students set goals, created strategic plans for learning, applied learning plans, monitored progress toward goals, and reflected on the effectiveness of their strategic plans.

To investigate the effectiveness of the treatment, this study used a pretest-posttest, quasi-experimental design with an intervention group and a comparison group. Learning was measured using quantitative and qualitative methods. Quantitative data included treatment-group and comparison-group students’ history test scores and data gathered with two instruments: an adjusted version of the School Motivation and Learning Strategies Inventory (SMALSI) and the Self-Efficacy for Self-Regulated Learning Scale (SESRLS). Qualitative data were gathered through treatment-group students’ study diaries and structured interviews and observations with think-alouds for 5 focus-group students. Qualitative data were used to confirm and enhance data gathered through quantitative measures.

**Background and Need**

As students transition into middle school, they experience academic, procedural, and social adjustments (Akos & Galassi, 2004). The academic adjustments that middle-school students experience coincide with decreases in motivation for learning and reduced academic achievement (Caparara et al., 2008; Eccles & Roeser, 2009), lowered self-efficacy (Schunk & Pajares, 2002), and
increased psychological distress (Rudolph, Lambert, Clark, & Kurlakowsky, 2001). Factors contributing to students’ academic difficulties include learning new organizational systems, adjusting to more difficult assignments, completing more challenging homework, struggling with time management, and preparing for five or six different classes (Elias, 2001).

Akos and Galassi (2004) conducted a study that investigated sixth-grade middle-school students’ and their parents’ perceptions about what schools could do to ease students’ transition to middle school. Both students and their parents indicated that students’ biggest need was to have assistance in learning how to organize and prepare homework for the different classes students take. In the same study, parents identified adjusting to the academic demands of organizing, preparing for, and mastering the advanced curriculum of middle school as their child’s greatest challenge.

The Akos and Galassi (2004) study and other studies suggest that teachers expect middle-school students to be more self-sufficient when working outside the classroom and that middle-school students struggle to engage with schoolwork autonomously (Dembo & Eaton, 2000; Schunk, 2005; Zimmerman, 1998). Often, students who struggle with the academic transition in middle school have not developed self-regulation of learning strategies and do not know how to select, evaluate, and adjust faulty learning strategies (Proctor, Prevatt, Adams, Hurst, & Petscher, 2006; Weinstein et al., 2000; Zimmerman, 2002). Students who cannot self-regulate, experience academic losses due to their inability to identify effective learning strategies, implement learning plans, and adjust them as needed (Pintrich,
Researchers have identified underdeveloped self-regulation of learning as a common characteristic of low-performing students (Kitsantas, 2002; Kitsantas & Zimmerman, 2009; Zimmerman & Kitsantas, 2005).

Self-regulation consists of learner-directed activities that promote academic achievement (Zimmerman, 2002). Learners regulate motivation, cognition, context, and behavior by engaging a three-phase model of self-regulation (Zimmerman, 2000). First, learners engage in a forethought phase. During the forethought phase, they analyze the task and assess self-motivational beliefs. From their initial assessments, students create a plan that enables them to complete learning tasks. Next, they engage in a performance phase in which they focus their attention, implement learning strategies, and monitor progress. Finally, students finish their learning episode with a reflection phase. The reflection phase consists of learners evaluating the effectiveness of their learning plans.

The use of learning strategies and self-regulated learning are integrated processes. In order to use learning strategies, the learner must utilize other facets of self-regulation such as motivation and metacognition (Zimmerman & Schunk, 2008). Evidence from research indicates that having knowledge of what strategies to use and having the ability to use the strategies is not sufficient for learning-strategy development. Learners need to have the motivation to use self-regulated learning strategies and maintain the perseverance to use them throughout learning tasks (Usher & Pajares, 2008).

An important predictor of students’ successful use of self-regulated learning strategies is students’ self-efficacy for self-regulated learning. Research has found
that students who learn self-regulatory skills increase self-efficacy perceptions (Cleary et al., 2008). Self-efficacy is an important facet of academic motivation and influences self-regulatory functioning. Researchers have found that students with high self-efficacy use more cognitive and metacognitive strategies, work harder, persist longer, and persevere when confronted with obstacles (Schunk & Ertmer, 2000). To support students’ feelings of efficacy for self-regulation, they need exposure to good models and the chance to practice what they see (Zimmerman, 2008).

Some students learn self-regulation skills implicitly at home (Martinez-Pons, 2002). These students have parents who model self-regulatory processes throughout their children’s lives. Doing homework and projects provides parents the opportunity to model strategies for setting academic goals, creating learning plans, managing time, and building motivation. Unfortunately, students who do not experience parental modeling and support are left to discover self-regulation strategies through discovery and may use less effective strategies (Gettinger & Siebert, 2002; Weinstein et al., 2000; Zimmerman, 2002). Research has shown that students who observe modeling and explicit instruction in self-regulatory processes attain higher outcomes when compared with students who do not receive self-regulation instruction (Kitsantas & Zimmerman, 2006; Stoeger & Ziegler, 2008).

Typically, teachers devote little time to explicit instruction of self-regulation skills (Hamman, Bethelot, Saia, & Crowley, 2000; Schunk, 2005; Zimmerman, 1998). Most instruction in middle school focuses on delivering content, not teaching strategies to help students learn content (Midgley et al., 2002). Many teachers do not
ask students to establish learning goals, and they do not teach students how to reach their goals explicitly (Hamman et al., 2000; Zimmerman et al., 1996). When self-regulation is not taught explicitly, low-achieving students resort to using underdeveloped strategies for learning that can lead to disappointing results (Eilam, 2001; Gettinger & Seibert, 2002).

Although self-regulation instruction is not part of the general curriculum, when it is taught, student learning and motivation improves (Cleary et al., 2008; Dignath & Buttner, 2008; Stoeger & Ziegler, 2008). Self-regulation intervention research suggests that self-regulation skills can be taught and improved in relatively short interventions (Kitsantas, Reiser, & Doster, 2004; Kitsantas & Zimmerman, 2002; Masui & De Corte, 2005; Perels, Gurtler, & Schmitz, 2005). In addition, studies have shown that when classroom teachers incorporate the use of self-regulation instruction as part of their curriculum, students’ self-regulation skills improve and that the self-regulatory skills learned in one curriculum area transfer to other curricular areas (Masui & De Corte, 2005; Schunk & Ertmer, 2000).

The skills students learn in middle school pave the foundation for success in high school and beyond. Middle-school failure sets off numerous negative consequences. Among those consequences is an increased likelihood of dropping out of high school. Suh, Suh, and Houston (2007) investigated high-school dropout predictors using data from the National Longitudinal Survey of Youth conducted in 1997. Their data showed the highest predictor of high-school dropouts to be low eighth-grade grade point average. They found that 57% of students who had low grade point averages in the eighth-grade dropped out of high school.
Students do not begin to drop out of school while in high school; numerous students cease their education while in middle school (California Department of Education (CDE), 2006). In California, school dropout rates reveal alarming statistics. During the 2006 school year in California, over 13,000 middle-school students dropped out of school (CDE). Supporting students with the academic transition to middle school could reduce the number of students who have low grade point averages in eighth grade and, perhaps, reduce the number of high-school dropouts. Teaching middle-school students self-regulation learning strategies may be a way to help students with the academic transitions they experience in middle school.

As students transition into middle school, they experience academic, procedural, and social adjustments (Akos & Galassi, 2004). The academic adjustments that middle-school students experience coincides with decreased motivation for learning and reduced academic achievement (Eccles & Roeser, 2009). Research has shown that teaching students self-regulated learning strategies improves achievement, motivation, and engagement with school (Dignath & Buttner, 2008; Stoeger & Ziegler, 2008; Weinstein, et al., 2000). For this reason, this study investigated the effects of a self-regulated learning-strategy instructional program with sixth-grade middle-school students.

**Theoretical Rationale**

Sixth-grade students were chosen as the population for this investigation because of the unique learning conditions they experience as they transition from
elementary school to middle school. Two theories functioned as the theoretical rationale for this study: self-regulation theory and learning strategy theory.

**Self-Regulation Theory**

Self-regulated learners set task-related goals, create plans to reach those goals, monitor progress toward their goals, and reflect on the effectiveness of their learning process once their goals have been achieved (Zimmerman, 2000). When learners self-regulate, they take responsibility for their learning by maintaining motivation to attain goals. They work toward their goals by implementing, monitoring, and modifying several cognitive and metacognitive strategies (Pintrich, 2000; Zimmerman, 1998).

Zimmerman’s (2000, 2002) cyclical model of self-regulated learning includes three phases: the forethought phase, the performance phase, and the self-reflection phase. The forethought phase consists of two categories that involve preparation for learning. The first is task analysis that includes goal setting and strategic planning. The other category is self-motivational beliefs that incorporate self-efficacy, outcome expectations, intrinsic interest, and goal orientation.

The next self-regulatory phase is the performance phase that includes two processes self-control and self-observation. Self-control refers to the implementation of specific learning strategies that the learner selects during the forethought phase. Self-observation includes the practice of tracking specific aspects of performance such as self-recording amount of time studied and the environmental conditions that supported learning such as studying alone or with friends.
Self-reflection is the last stage of the self-regulated learning cycle, which includes two major elements: self-judgment and self-reaction. One type of self-judgment occurs when the learner compares one’s performance with a specific standard such as another person’s performance or a pre-established absolute performance standard. Causal attributions, the beliefs about the factors leading to a person’s success or failures are another form of self-judgment. The second class of self-reflection consists of self-reaction. Self-reactions are tied closely to self-satisfaction and adaptive or defensive inferences. Positive self-satisfaction with task completion improves motivation, whereas negative self-satisfaction diminishes motivation. Adaptive or defensive inferences refer to the conclusions one draws about how one may adjust approaches to learning in subsequent learning activities. Adaptive inferences focus on ways the learner can increase learning, whereas defensive inferences includes processes learners protect their self-image by avoiding future dissatisfaction and often include avoidance techniques such as dropping out of classes, procrastination, and task avoidance.

**Self-Efficacy for Self-Regulated Learning**

An important factor that influences whether students will engage in self-regulatory behaviors is their self-efficacy for self-regulated learning (Pajares, 2008). Self-efficacy is defined as the beliefs individuals have about their capabilities to perform specific tasks (Zimmerman et al., 1996). Students will engage in self-regulatory strategies if they perceive themselves to be efficacious in performing self-regulatory behaviors (Cleary & Zimmerman, 2004). Self-efficacy beliefs influence students’ academic motivation in several self-regulatory processes including goal
setting, self-monitoring, self-evaluation, and strategy use (Zimmerman, 2000). Research has found that students who learn self-regulation skills increase self-efficacy perceptions and improve academic achievement (Cleary et al., 2008). In addition, researchers have found that students with high self-efficacy use more cognitive and metacognitive strategies, work harder, persist longer, and persevere when confronted with obstacles (Schunk & Ertmer, 2000). Self-efficacy is an important facet of academic motivation and influences self-regulatory functioning.

**Acquisition of Academic Self-Regulation**

Understanding the effectiveness of academic self-regulation instruction is not sufficient to ensure students learn these important skills (Martinez-Pons, 2002). Educators also need to understand how students learn these strategies, so they can teach self-regulatory strategies effectively (Zimmerman, 2002). Social cognitive researchers contended that self-regulatory processes can be learned and sustained through social and individual systems of learning. Researchers posited that students acquire self-regulatory skills through a hierarchic sequence of development levels that includes observing social models and receiving personal feedback and support (Zimmerman, 2002).

The self-regulation acquisition model is based on the model of cognitive apprenticeship. The cognitive apprenticeship model maintains that learning should take place in context so that the activity that is being taught is modeled in real-world situations. A main feature of the cognitive apprenticeship model is that students learn through teacher modeling. Learning takes places in a cascade of events. First, the teacher makes his or her thinking processes visible to the students so students
observe, attempt, and apply processes modeled by the teacher. Through coaching, feedback, and support the teacher gradually builds the learner’s independence. Ideally, the teacher provides support at the level just past the learner’s independent skill level. This point is referred to as the Zone of Proximal Development (Vygotsky, 1978). Coaching includes additional modeling and providing corrective feedback. As the learner becomes more skilled in a target thinking process, the teacher fades support, which helps the learner become autonomous (Brown, Collins, & Duguid, 1989). The cognitive apprenticeship model is the foundation for the acquisition of self-regulation model.

Observation is the first level of self-regulation skill development. During this level of development, the learner watches the performance of skilled models, listens to the verbal explanations of how the model performed the task, and notices the model’s self-expressed beliefs. The second developmental level of self-regulation is the emulation phase. During this phase, the learner imitates the model’s strategic performance. This phase often incorporates feedback and guidance from the teacher or model (Zimmerman & Kitsantas, 1997). Self-control is the third level of self-regulation acquisition. During this level, the learner applies the skill in a structured setting away from teacher or model. The final phase of self-regulated development is the self-regulation phase. During this phase, the learner independently applies the learned skills across a variety of dynamic environments.

Providing self-regulation strategy instruction using a hierarchic sequential model such as the observe, emulate, self-control, and self-regulation model previously described illuminates complex cognitive processes that are difficult for
students to apply on their own (Martinez-Pons, 2002). Researchers acknowledged that the hierarchical sequence model is not the only manner students learn complex cognitive processes such as self-regulation strategies; however, they suggested that when students learn in contexts using the hierarchic levels, they experience greater learning and higher levels of motivation (Collins et al., 1991; Martinez-Pons, 2002).

The preceding information outlined a general theoretical framework for self-regulation, how it applies to studying tasks, how self-efficacy impacts self-regulation, and how learners develop self-regulation skills. This study utilized Zimmerman’s (2000) cyclic model of self-regulated learning to teach students specific learning strategies to prepare for history tests. Instruction was delivered utilizing a social cognitive approach such that instruction included all four levels of the self-regulation skill development hierarchy: observation, emulation, self-control, and self-regulation. The subsequent section of the theoretical rationale provides a rationale for learning strategies instruction in the proposed intervention.

**Learning-Strategy Framework**

Students use specific learning strategies to help them reach their academic goals and are an important part of Zimmerman’s (2000) cyclical model of self-regulation. Learning strategies are defined as the thoughts, behaviors, beliefs, or emotions that help learners attain new information and apply that knowledge in new contexts (Weinstein et al., 2000). If students are not aware of which learning strategies best fit a given learning task, engaging in a self-regulatory process provides little benefit (Getting & Seibert, 2002). The self-regulation learning-strategies treatment incorporated the use of a learning-strategy framework developed by
Weinstein and Mayer (1986). This framework consists of five categories: rehearsal, elaboration, organization, comprehension monitoring, and affective strategies.

Rehearsal strategies include techniques that are used to recall information in a verbatim manner. Weinstein and Mayer (1986) distinguished rehearsal strategies based on task complexity. Basic tasks require simple recitation or repetition of information. Students use rehearsal techniques when memorizing information such as the planets, multiplication facts, or how to spell a word. Complex tasks require different strategies such as copying material, taking notes, and annotating texts. Students use these techniques when they recount main events in story or explain the causes of a World War I (Weinstein & Mayer, 1986).

Elaboration strategies create meaning by connecting new information to the learner’s prior knowledge. Elaboration strategies for simple tasks include forming visual images and creating mnemonics that associate unfamiliar information to something of personal meaning. Complex tasks require the use of paraphrasing, summarizing, and creating analogies (Weinstein et al., 2000; Wolgemuth, Cobb, & Alwell, 2008).

Organizational strategies create connections among individual bits of information in the academic content to be learned (Weinstein et al., 2000). Students organize basic information when they cluster, sort, and categorize information. For complex tasks, learners outline, create concept maps, and make diagrams (Nesbit & Adesope, 2006).

The learning-strategies framework includes support strategies that help students monitor the learning process. The first strategy is comprehension monitoring
and includes techniques such as self-questioning, noticing mistakes, fixing mistakes, and adjusting strategy use as needed (Weinstein & Mayer, 1986). The final learning-strategy category is affective strategies. These strategies help the learner focus and maintain motivation to complete learning tasks. These techniques include overcoming anxiety, removing distractions, and focusing thoughts on positive learning outcomes (Weinstein & Mayer, 1986).

This study included instruction about two specific learning strategies: mnemonics and concept maps. Mnemonics are considered an elaboration strategy, and concept maps are considered an organization strategy. Students learned how to use concept maps and mnemonics as a study tactic that could have been used as part of the task analysis and strategic planning facets of the Zimmerman’s (2000) cyclic model of self-regulation.

There is some overlap between self-regulation theory and the learning-strategies framework. It is necessary to include learning strategies as part of the theoretical rationale for this study for several reasons. Low-achieving students have less-developed knowledge of effective learning strategies and benefit from explicit instruction in these strategies within the self-regulation process (Kitsantas, 2002; Zimmerman & Martinez-Pons, 1986). Providing self-regulation learning-strategies instruction assisted participants in becoming strategic learners who possess the knowledge of effective learning strategies, have the desire to learn, and regulate their learning efforts (Gettinger & Seibert, 2002; Martinez-Pons, 2002; Weinstein & Van Master Stone, 1994).
Numerous studies have shown the negative impact middle school has on some young adolescents (Akos, 2002; Akos & Galassi, 2004; Eccles & Roeser, 2009, Fenzei, 2000). When students begin middle school, they experience social, academic, and procedural adjustments. Schools respond to students’ procedural adjustments and social needs through a variety of interventions such as orientations and peer-mentoring programs (Akos; & Akos & Galassi). Successful academic interventions prove to be more elusive (Dembo & Eaton, 2000). Colleges and universities have the addressed university students’ academic adjustment to higher education by providing courses that utilize explicit instruction to teach self-regulated learning strategies as part of their core curriculum (Weinstein et al., 2000). New middle-school students would benefit from participating in similar instruction.

**Significance of the Study**

This investigation addressed two main gaps in the research. First, it examined the development and use of self-regulation learning strategies and processes of young adolescents as they study for history tests, which is currently lacking in the literature (Cleary et al., 2008; Weinstein et al., 2000). The majority of learning strategies research subjects are postsecondary students. Because research participants in these investigations are much older and have more prior knowledge about learning than middle-school students, some of the methodologies and instrumentation used are not appropriate for younger student populations. This study addressed this problem by using a new learning strategies inventory designed specifically for young learners, the School Motivation and Learning Strategies Inventory (Stroud & Reynolds, 2006). To compensate for validity concerns associated with self-report measures, this study also

In addition, this study also provided information about one type of academic intervention that could support new middle-school students as they begin their secondary educations. Existing middle-school transition intervention programs focus on easing social and procedural adjustments of middle school. Students need to learn academic learning strategies that will ease their transition into middle school (Dembo & Eaton, 2000; Gettinger & Seibert, 2002; Martinez-Pons, 2002). This investigation addressed this gap in the literature.

Research Questions

This quasi-experimental study used a pretest-posttest design and investigated the effects of integrating self-regulation learning-strategies with the core curriculum in an intact sixth-grade history class. This investigation addressed the following research questions:

1. To what extent is there a change in sixth-grade students’ use of learning strategies as measured by SMALSI from pretest to posttest for those participating in a self-regulation learning-strategies instructional program when compared with the use of learning strategies of students in a comparison group?

   a. Subquestion 1. To what extent is there a greater change on the SMALSI for low-achieving students compared with high-achieving and medium-achieving students in the instruction group?
2. To what extent is there a change in sixth-grade students’ self-efficacy for self-regulated learning as measured by SESRLS from pretest to posttest for those participating in a self-regulation learning-strategies instructional program when compared with the SESRLS of students in a comparison group?
   a. Subquestion 1. To what extent is there a greater change on the SESRLS for low-achieving students compared with high-achieving and medium-achieving students in the instruction group?

3. To what extent is there a change in sixth-grade students’ performance on history tests from pretest to posttest for those participating in a self-regulation learning-strategies instructional program?
   a. Subquestion 1. To what extent is there a greater change on history test scores for low-achieving students compared with high-achieving and medium-achieving students in the instruction group?

4. To what extent is there a change in focus-group students’ use of self-regulation strategies from pretreatment to posttreatment after participating in a self-regulation learning-strategies instructional program as measured by observations with a think-aloud protocol and the Self-Regulation Interview Schedule?

5. To what extent is there a change in students’ use of study tools after participating in a self-regulation learning-strategies instructional program from pretreatment to posttreatment as measured by Test Preparation Reflection Forms?
Definition of Terms

This section includes the definitions of main terms and concepts that were used in this study. Although there may be alternative ways to define these terms, the way they are defined in this section is the way that they were used in this study.

Adaptive inferences are conclusions learners make about how to alter their self-regulatory strategy approach for subsequent learning efforts that may include new and more effective strategy use and will guide the learner to improved learning outcomes (Zimmerman, 2000).

Academic motivation relates to learners’ desire to learn. Motivation influences which learning strategies will be used and the effort learners will use to carry out learning strategies. Many factors influence learners’ motivation including attributions for success and failure and goal development (Stroud & Reynolds, 2006).

At-risk students are students who may experience failure or low achievement that can be due to a variety of reasons, including poor learning strategies (Weinstein & Hume, 1998).

Cognitive apprenticeship is a learning model that holds that learning should take place by enabling students to acquire, develop, and use cognitive tools in authentic domain activity. Learners learn through observation, emulation, and feedback (Brown, Collins & Duguid, 1989).

Cognitive learning strategies are intentional manipulation of information through processes like repetition, elaboration, and reorganization such that the new information can be stored in the learner’s associate network and accessed for
retrieval. It is goal directed, intentionally invoked, and effortful (Weinstein & Mayer, 1991).

Defensive inferences are conclusions learners make about how to alter their self-regulatory strategy approach to protect the person from future dissatisfaction and negative affect. They include procrastination, task avoidance, apathy, and helplessness (Zimmerman, 2000).

Learning strategies are thoughts, behaviors, beliefs, or emotions that facilitate the acquisition, understanding, or later transfer of new knowledge and skills (Weinstein et al., 2000). Learning strategies were assessed using the SMALSI (Stroud & Reynolds, 2006).

Metacognition is defined as knowledge and cognition about cognitive phenomena, (Flavell, 1979). It is consists of two subcomponents: knowledge of cognition and regulation of cognition (Schraw & Moshman, 1995). Metacognition is also defined as the knowledge of one’s knowledge, processes, and cognitive and affective states and as the ability to consciously and deliberately monitor and regulate one’s knowledge, processes, and cognitive and affective states (Hacker, 1998).

Middle school is term used to describe schools that educate students in the sixth, seventh, and eighth grades. There are numerous terms used for middle-level education school such as junior high school and intermediate schools. For the purposes for this study, the term middle school was used.

Online data are a form of gathering data where data are gathered while a research participant is engaged in specific self-regulatory learning processes. Online measures include computer traces, think-aloud protocols, structured diaries, direct
observations, and microanalytic measures (Zimmerman, 2008).

Organizational techniques are methods learners use to organize learning materials that include preparing before each class to documenting daily assignments (Slade, 1986). Organizational techniques were assessed using the SMALSI.

School Motivation and Study Strategies Inventory is a self-report instrument that measures 10 constructs: study strategies, note-taking and listening skills, reading and writing strategies, writing-research skills, test-taking strategies, organizational techniques, time management, academic motivation, test anxiety, and attention and concentration. The intervention program used in this study did not address all 10 constructs in the SMALSI; therefore, this study incorporated an adapted form of the SMALSI that included the constructs of study strategies, test-taking strategies, organizational techniques, and time management strategies (Stroud & Reynolds, 2006).

Self-efficacy is the degree to which a person believes he or she is capable of successfully performing a certain task (Zimmerman et al., 1996). Self-efficacy was assessed using the Self-Efficacy for Self-Regulated Learning Scale.

Self-Efficacy for Self-Regulated Learning Scale is an instrument that was used to assess learners’ perceptions of their ability to engage in self-regulatory processes. This instrument includes questions regarding students’ perceptions about their ability to plan and organize academic work, structure a productive study environment, overcome distractions, and participate in class (Bandura, 2006).

Self-regulation consists of self-generated thoughts, feelings, and actions that are planned and systematically adapted as needed to affect one’s learning and
motivation (Schunk, 1994; Zimmerman, 2000). Self-regulation was assessed using the Self-regulation interview schedule (Zimmerman & Martinez-Pons, 1986).

*Stage-environment fit theory* is a theoretical base that suggests that as students mature, their emotional, cognitive, and social needs evolve. To maintain healthy development, individuals’ needs must align with opportunities afforded to them in their learning environment (Eccles & Roeser, 2009).

*Strategic attributions* are factors to which students attribute their outcomes in learning. Factors consist of many variables and include ability, effort, task difficult, and luck. Attributions are classified into three categories: internal or external to the person, relatively stable or unstable over time, and controllable or uncontrollable by the person (Weiner, 1992).

*Study strategies* consist of a repertoire of learning methods that are applied selectively to complete tasks under particular conditions (McKeachie, 1988). Studying strategically involves deliberation and planning. In order for a student to be strategic, they have to choose from a variety alternative strategies, be deliberate about the advantages and disadvantages of various strategies based on the learning task, and select a given strategy because it is an effective means for meeting specific learning goals (Hadwin & Winne, 1996). Study strategies were assessed using the SMALSI and students’ study diaries.

*Study tactics* are defined as a sequence of steps or a specific procedure used while studying information (Gettinger & Seibert, 2002).

*Test-taking strategies* are specific strategies learners use while taking a test. Examples include eliminating wrong choices and managing time among difficult and
easy test items (Hughes, 1993). Test–taking strategies were assessed using the SMALSI.

*Time management* includes the techniques individuals use to structure time in efficient ways (Stroud & Reynolds, 2006). Time-management skills were assessed using the SMALSI.

*Zone of Proximal Development* is the difference between what a learner can do without help and what he or she can do with help (Vygotsky, 1978).

**Summary**

This chapter has outlined the purpose of the study, the research problem and its significance, general background, and the theoretical rationale for this study. Learning strategy theory and self-regulation theory have been described and presented as means to ameliorate the academic challenges students face as they transition into middle school. In addition, this study’s research questions and the definition of terms have been detailed in this chapter. The next chapter, the review of literature elaborates on the recent research findings in the areas of middle-school transition, self-regulation, and learning strategies. In Chapter III, the methodology for this study is explained and describes the research design, procedures for data collection, the treatment, data analysis, and limitations. The results for this study are listed in Chapter IV. A discussion of the findings is presented in Chapter V and includes the limitations of the study, suggestions for future research, and implications for educational practice.
CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study was to investigate the effects of a self-regulation learning-strategies intervention program on sixth-grade students’ academic achievement, use of self-regulation strategies, academic self-efficacy, and their use of study tools. This study was grounded in three research areas that served as the theoretical framework for the literature review. The first area of the literature review details middle-school transition research and theory. This literature focuses on the social, procedural, and academic adjustments students experience as they transition from elementary school to middle school. Self-regulation research is the second research area for this study and was the main focus of this study. The self-regulation review includes the following components: theoretical principles of self-regulation, an overview of the scope of self-regulation research, and a critique of recent studies in the area of self-regulation learning strategies research. In addition, this review details current methodological considerations for conducting self-regulation research.

The final topic researched in the review for this study includes learning-strategies research. This review includes a theoretical overview of learning strategies and a summary and critique of learning-strategies interventions. In addition, the review provides details on two learning tactics that were used in this study: concept maps and mnemonics.

Middle-School Transition

As children transition from elementary school to middle school, they experience many changes. They attend classes taught by four to six teachers each
day, learn new grading systems, change classrooms every 45 minutes, make new friends, and are required to be more independent and responsible (Akos & Galassi, 2004). In general, middle-school students experience three types of transitions: procedural, social, and academic. Procedural transitions involve knowing how to find classes around a new campus, being able to open lockers, understanding how to prepare for numerous classes, and finding the lunch room and restroom (Akos, 2002; Elias, 2001). Social transitions in middle school involve making new friends, getting along with teachers, dealing with bullies, and missing friends from elementary school (Akos 2002; Elias). Academic adjustments in middle school include figuring out how to complete increased amounts of homework, having harder school work, and having more responsibility for completing their school work (Allen, 2001; Elias).

Students experience a variety of emotional responses to the numerous changes they experience in middle school. New middle-school students identify making new friends, having more freedom, changing classes, and having electives as some of the most positive facets of going to middle school (Akos, 2002; Akos & Galassi, 2004). Although students enjoy many of the changes they experience in middle school, for some students, the middle-school transition often includes decreased academic achievement and motivation (Midgley, Middleton, Gheen, & Kumar, 2002). Researchers posited that students suffer losses in achievement and motivation because there is a poor fit between adolescents’ developmental needs and the middle-school learning environment (Anderman, Maehr, & Midgely, 1999; Eccles & Roeser, 2009; Roser, Eccles, & Sameroff, 2000). The middle-school transition literature is broken
up into three sections: stage-environment fit theory, middle-school transition research, and high-school drop-out research.

**Stage-Environment Fit**

Stage-environment fit literature includes a definition of stage-environment fit and describes middle-school practices that contribute to declines in adolescents’ motivation and achievement. The stage-environment fit model explains that individuals have changing emotional, cognitive, social needs, and personal goals as they mature (Eccles & Midgley, 1989). In order for people to develop at their highest potential, their environment should match their developmental needs. A seminal study conducted by Eccles and Midgley proposed a model of stage-environment fit for researchers to use as a framework to understand how school transitions impact adolescent development.

There are several characteristics of middle-school learning environments that are considered a mismatch between what students need and what they experience in middle school. First, middle-school classrooms are characterized by controlling teachers with strict discipline policies that provide students with few opportunities to self-manage, make choices, and engage in decision making. Second, students and teachers have less personal and positive relationships. Another mismatch involves an increase in whole-class task organization, between-classroom ability grouping, and public evaluation of work (Eccles & Midgley, 1989). In addition, high frequencies of middle-school teachers perceive themselves to be less efficacious in doing their jobs especially when working with low-ability students (Roeser & Eccles, 2000). Another developmental mismatch rests in the practice of assigning work that requires lower
level cognitive skills. The last developmental mismatch area consists of the practice of middle-school teachers using high standards to grade student work and judge their work (Eccles & Roeser, 2009). Researchers suggested that these conditions contribute to decreases in students’ motivation and achievement (Eccles et al., 1993).

A report conducted by Midgley et al. (2002) revisited the stage-environment fit theory in school transitions. They reported that schools have responded to the needs of students as they transition into middle school. Schools have developed transition programs that focus on building relationships between students and adults. Researchers reported that schools involved in the research programs seemed warmer, more respectful, and pleasant (Midgley & Edelin, 1998). The researchers were pleased with these adjustments; however, they showed strong concern regarding a lack of emphasis on learning, understanding, and rigor in school. Although some schools are attempting to adjust programs to meet students’ developmental needs, it appears that schools still need to develop academic interventions that meet the developmental needs of early adolescents.

Stage-environment fit theory explains how traditional middle-school practices contribute to academic and motivational declines students experience as they transition into middle school. Middle-school transition research is an area of research that describes the challenges and benefits of moving from elementary school to middle school through students’, parents’, and teachers’ perspectives. Middle-school transition research confirms the academic declines reported in stage-environment fit. It also illuminates additional factors that further challenge students as they begin middle school.
Middle-School Transition Research

As students adjust to middle school, they experience several changes that impact their learning. They go through social adjustments and try to fit in and make new friends. Students also must learn procedures for a variety of teachers, learn how to organize their materials for numerous classes, and rotate classrooms. New middle-school students also make academic adjustments and must figure out how to learn advanced curriculum, study in new curricular areas, and manage increased workloads (Akos, 2002). Middle-school transition research has identified some of the challenges and benefits of these changes and has proposed ways schools can support students as they adjust to middle school.

Researchers have investigated students’, parents’, and teachers’ perceptions about positive and negative aspects of middle-school transition (Akos, 2002; Akos & Galassi, 2004; Barber & Olsen, 2004; Deemer et al., 2003). Results from this research have identified specific areas that pose challenges for student. In addition, Akos and Galassi’s research illuminated the problem that teachers do not recognize the challenges students experience as they begin middle school. A study conducted by Akos and Galassi surveyed 173 sixth-grade students, 83 of their parents, and 12 of their teachers. Each group of participants was given a questionnaire that included a checklist that required them to identify both positive and negative aspects of middle school. Respondents also were given a series of open-ended questions.

Data from student, parent, and teacher questionnaires yielded similar responses for the aspects of middle school that students find favorable. They all indicated choosing classes and making new friends as the most positive feature of
middle school. There were differences among the three groups’ perspectives regarding the difficulties of middle-school transition. Students identified the most difficult part of the transition were classes, getting good grades, homework, and teachers. Parents identified the most difficult element of their children’s transition to be the increased need to be responsible and large amounts of homework. Overall, students and parents noted academic elements of the transition to be most difficult; however, teachers identified social and procedural adjustments as the most difficult aspect of middle-school transition. The researchers failed to elaborate on this mismatch. It is possible that this mismatch is evidence of the stage-environment fit mismatch identified by Eccles and Midgley (1989). If teachers fail to perceive the academic difficulties students experience as they enter middle school, how can they structure instruction to provide support for those students who struggle? Teachers’ lack of understanding regarding students’ academic transition to middle school may contribute to achievement and motivational losses some students experience upon entering middle school.

Participants in the Akos and Galassi (2004) study identified several ways schools could ease the transition to middle school. Interventions suggested by the participants include the following: (a) teach study skills and time management both prior to and following the transition, (b) discuss academic expectations with students, (c) increase communication about curriculum and academic expectations between teachers at the elementary and middle schools, (d) implement either a hotline or website for parents and students for homework and other questions, (e) provide academic tutors, and (f) increase direct contact and communication between parents
and teachers in order to assist students with homework and the academic demands of the new school and to prevent and remEDIATE academic problems. The study attempted to addresses the first two suggestions from the Akos and Galassi study findings: (a) teach study skills and time management and (b) discuss academic expectations with students.

The findings reported in the Akos and Galassi (2004) study confirmed findings made by other middle-school transition researchers. A study conducted by Deemer et al. (2003) investigated students’ perceptions of their learning environment. The sample consisted of 350 sixth graders and 358 seventh graders. All students responded to an 18-item questionnaire focusing on middle school transition. The data showed that statistically significant numbers of students reported they were successfully managing their academic obligations. Notwithstanding the large numbers of students adjusting well to the transition, approximately 20% of the students perceived themselves to be struggling with the transition to middle school. Researchers decided to gather additional information by interviewing 10 struggling students.

These students reported challenges with being prepared for class, using their lockers, and completing homework. These data are evidence of procedural and academic transition difficulties. Interviews with at-risk students revealed four themes. First, students indicated being disconnected from school in both sixth and seventh grades. Students also indicated that middle-school work is more difficult than elementary-school work and that teachers had less time to help them. Students also reported they were more motivated to stay out of trouble than to achieve.
Bullying was a third theme that emerged from interview data. Students indicated they were harassed and felt powerless to stand up to bullies. A final theme that surfaced was that parents were not involved heavily in their children’s schooling. All of the students interviewed were from families of lower socioeconomic status. These children’s parents may have had difficulty engaging with school due to work schedules, child rearing responsibilities, and transportation problems.

The results of this study show that not all students struggle with the middle-school transition. Data from this study reported that about 20% of the students had difficulties with the transition to middle school. This finding confirmed information reported in the 1995 Carnegie Council on Adolescent Development (CCAD, 1995) that stated that between 25% and 50% of adolescents are at great risk for educational and social difficulties. Data gathered through at-risk student interviews suggest that for some students problems with the transition may have more to do with low academic skills than a developmental mismatch between schools and their students.

Middle-school transition research provides specific information regarding the challenges middle-school students experience in school. Research shows that a range of 20% to 50% of students experience difficulty with the transition to middle school. This study attempted to support students with academic and motivational challenges associated with the middle-school transition by teaching them self-regulatory strategies. Numerous self-regulatory studies have shown that teaching students self-regulatory strategies improves course grades and improves students’ motivation for learning (Cleary et al., 2008; Cleary & Zimmerman, 2004; Stoeger & Ziegler, 2008).
When students experience prolonged difficulties in the middle-school learning environment, they become at-risk for dropping out of school (Balfanz, 2008; Suh et al., 2007). Researchers have studied the academic histories of high-school dropouts and have identified several middle-school student characteristics that correlate with high-school dropouts. High-school dropout research suggests several practices middle schools can employ to support students and reduce the number of high-school dropouts.

**Middle-School Achievement and High-School Dropouts**

Middle-school transition research has identified academic transitions as one of the most challenging aspects of middle school. Students and parents report that increased amounts of homework, not being prepared for classes, and not knowing what teachers expect pose the biggest challenges for students (Akos, 2002; Akos & Galassi, 2004; Deemer et al., 2003). When students experience long-term difficulties with the academic aspects of middle school, they suffer the risk of dropping out of school (Balfanz, 2009; Bradley et al., 2003; Suh et al., 2007). Bradley et al. used the 1988-2000 National Educational Longitudinal Study (NELS) data to look for patterns among high-school dropouts. They noted that prehigh-school standardized test scores were strong indicators for potential dropouts. They noted that 55% of dropouts scored in the lowest quartile on their eighth-grade standardized tests. Data also suggested that if these students received assistance before entering high school, dropout rates decreased. In fact, they found that if students were able to increase eighth-grade test scores by one standard deviation, they reduced the risk of dropping
out by 40%. These data suggest that when students receive assistance in middle school, fewer students drop out of school.

A study by Suh et al. (2007) also investigated characteristics for potential drop-out students by examining data from the National Longitudinal Survey of Youth 1997 (NLSY97). They analyzed 20 variables contributing to school dropout. Researchers looked at correlations between the 20 variables and whether students graduate or dropped out. The data showed that low eighth-grade grade point average (GPA) was the variable with the highest correlation to dropping out \( r = .35 \). Researchers performed a variety of logistical regression analyses and found that students had a variety of risk-factors that contributed to dropping out that include low academic skills, low socioeconomic level, and behavior problems. Researchers suggested that schools provide assistance to students based on their individual needs.

This study investigated the impact of a self-regulation learning strategies instructional program on an intact sixth-grade class that included several low-achieving students. Results of this study suggest that learning in a self-regulation learning strategies instruction benefited some low-achieving students; however, it did not address the needs of all underperforming students.

A study by Balfanz (2009) investigated how high-school dropouts performed in middle school. Researchers attempted to identify key middle-school characteristics that identified potential high-school dropouts. Data from this study showed that once a sixth-grade student demonstrated the inability to pass mathematics and English tests, this pattern continued unless there was an intervention. Failure in these courses lead to failure in other courses. When a student who failed mathematics and English
was ready to enter high school, the student had a history of failure, lacked skills, had limited knowledge, and low self-confidence. This research found that the earlier a student demonstrated these characteristics, the higher the likelihood that student would drop out.

Balfanz (2009) acknowledged that middle school is a time when achievement gaps widen and provided suggestions for helping students avoid future failure. He proposed that schools teach organizational and self-management skills. These students also need to learn time-management and task-management skills, note-taking strategies, and assignment completion strategies. In addition, Balfanz explained that at-risk students need models that demonstrate the level of effort needed for success and building resilience. Many of Balfanz’s suggestions require the use of self-regulation strategies. Time-management, task-management, and assignment completion strategies can be addressed in the forethought phase of Zimmerman’s (2000) sociocognitive model of self-regulation. Having models that demonstrate resilience and effort levels can be addressed in the reflection phase of Zimmerman’s model of self-regulation. Teaching students self-regulation strategies supports the needs of at-risk middle-school students. The self-regulation instructional program used in this study included many of Balfanz’s suggestions.

A group of Italian researchers, Caprara et al. (2008), investigated the effects of perceived self-efficacy for self-regulated learning on the likelihood of students staying in school. The researchers used data from an ongoing longitudinal project that investigated the social and personal factors affecting developmental pathways of individuals from childhood to early adulthood. Data were gathered using the
Perceived Efficacy for Self-Regulated Learning scale six times over the span of 10 years. Analysis of the data showed a decline in students’ self-efficacy for self-regulation as they continued in school. Researchers explained that as students progress in school, work becomes more complex and academic demands increase. The increased academic demands highlight academic deficiencies that upset students’ feelings of self-efficacy. The data showed that students with high levels of self-efficacy for self-regulation in middle-school experience fewer losses in self-efficacy as they progressed in school and showed a decreased likelihood of dropping out of school. Researchers pointed out the importance of preserving students’ feelings of self-efficacy for self-regulated learning and cited several studies that instructed students in the use of self-regulation strategies including the Cleary and Zimmerman (2004) Self-Regulation Empowerment Program.

The information presented in the preceding section detailed the connection between middle-school achievement and high-school dropouts. The literature showed that as some students begin middle school they experience academic and motivational losses. Middle-school transition literature suggests that 20% to 50% of middle-school students struggle with the academic transition to school (CCAD, 1995). High-school dropout research has investigated characteristics of high-school dropouts and discovered that many high-school dropouts experienced many challenges in middle school (Suh et al., 2007).

Research has suggested several interventions that may benefit students who struggle with the middle-school learning environment (Akos & Galassi, 2004; Balfanz, 2009; Cleary & Zimmerman, 2004). A common thread that connects many
research recommendations is the need for middle-school students to develop self-regulation skills. The next section of the literature review describes theoretical models, instructional models, research methodologies, and empirical research in the area of self-regulation.

**Self-Regulation Theoretical Models**

When students enter the middle-school learning environment, they experience increased responsibility for their learning (Gettinger & Seibert, 2002). Students are expected to complete many assignments and projects outside of the school day (Deemer et al., 2003). In order for students to complete learning tasks and master the curriculum outside the school day, they must engage in self-regulatory behaviors (Zimmerman, 2002). This section describes several theoretical models, instructional models, research methodologies, and empirical research in the area of self-regulation.

**Assumptions of Theoretical Models**

Numerous models of self-regulation exist that ascribe to varying constructs and mechanisms (Butler, 2003; Pintrich, 2000; Winne & Hadwin, 1998; Zimmerman, 2000; Zito et al., 2007). Notwithstanding the differences in these models, there are assumptions these models maintain as universal (Pintrich, 2000). All models share the active, constructive assumption, which views learners as individuals who actively create their own meanings, establish learning goals, and choose strategies for learning from both the external environment of the classroom and the internal environment of their minds.

In addition, self-regulation models share the potential for control assumption. This assumption posits that learners have the potential to monitor, control, and
regulate aspects of their cognition, motivation, behavior, and environmental features. In addition, this assumption acknowledges that there are biological, developmental, contextual, and individual factors that influence an individual’s efforts at self-regulation. Another assumption self-regulation models share is the goal, criterion, or standard assumption. This assumption maintains that when individuals self-regulate, there is a criterion or standard against which comparisons are made to assess the effectiveness of a learning approach. When individuals assess their progress against a criterion, they determine whether their approach to learning is sufficient and make adjustments to their learning approach as needed.

The last assumption self-regulation models share is the concept that self-regulatory activities serve as mediators between achievement performance and personal and contextual characteristics. This assumption maintains that the self-regulation of cognition, motivation, and behavior mediates the relationship between the person, context, and achievement (Pintrich, 2000). Within these assumptions of self-regulation, a working definition has been developed that describes self-regulation as “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals, and the contextual features of the environment” (p. 453).

Although there are several fundamental similarities among self-regulation models, the differences among the models highlight varying views regarding the constructs that define self-regulation and the mechanisms that influence self-regulatory behaviors. The next section of the literature review delineates the
differences among three popular self-regulation models (Pintrich, 2000; Winne & Hadwin, 1998; Zimmerman, 2000). These models were included in this review because they are used frequently in learning strategies research with adolescent learners, which was the focus of this study.

Winne and Hadwin’s (1998) Model of Self-Regulated Learning

Winne and Hadwin (1998) explained that self-regulated learning (SRL) takes place in four basic phases that include task definition, goal setting and planning, studying tactics, and adaptive metacognition. They maintained that these phases are recursive such that any phase can feed into metacognitive monitoring in any previous or subsequent phase. As a learner cycles through the self-regulatory phases, five factors interact that influence self-regulatory behaviors. The five factors include conditions, operations, products, evaluations, and standards (COPES). These factors are the types of information a person uses or generates while learning.

Winne and Hadwin (1998) suggested that the COPES factors are the cognitive architecture for the work that takes place during each phase of SRL. Conditions are the first factors that interact with each phase of SRL. Conditions for a learning task include the cognitive conditions of the learner as well as the task conditions. Conditions establish the context for learning (Winne & Hadwin, 2008). Conditions may include a students’ prior knowledge for the subject, self-efficacy for performing a specific learning task, and anxiety associated with learning. These conditions influence the way a learner defines a task during the first phase of SRL.

The second factor of SRL is operations. Operations are cognitive manipulations of information and include searching, monitoring, assembling,
rehearsing, and translating. As students learn, they employ the various cognitive behaviors described in the operations feature of SRL. When students have completed the cognitive tasks of the operations feature, they create a product.

Products are the third feature of SRL and are derived from each phase of SRL. For example, the product of phase one is the representation of a learning task and the phase two product is a goal. Unlike, operations, products are not limited to cognitive outcomes. Products also include affective features that can develop in each phase of SRL. As learners move in and out of each phase of SRL, they make evaluations about the products they create.

Evaluations are the fourth feature of Winne and Hadwin’s (1998) model of SRL. Learners’ evaluations may gauge the effectiveness of a learning plan (phase 2) or the appropriateness of the use of a learning strategy (phase 3). In order to make evaluations, learners must use standards, which is the final factor of SRL. Standards are the criteria by which learners make evaluations throughout each phase of SRL. Using standards helps learners evaluate the quality of their learning products and determine whether the operations used to produce a learning product were effective. Evaluations allow learners to ascertain whether they utilized effective operations to perform their learning tasks. Finally using standards helps learners determine the influence of the learning conditions on the successful execution of their learning tasks. The COPES factors influence each phase of SRL: definition of the task, goals and plans, studying tactics, and adaptations.

Hadwin and Winne (1998) described their model of SRL as taking place in phases and noted that the phases are not cyclical. They posited that the phases are
recursive and weakly sequential. Their model of SRL declares that the monitoring of products and standards can lead to changes in previous phases and that learners do not engage in typical cycles. In their view, learning takes place when learners recycle through the cognitive architecture of COPES until they clearly define a task, identify learning goals with a plan to achieve them, and enact strategies to begin learning. After learners define tasks, create learning goals, and use learning strategies, they enter the last phase of the self-regulation, adaptations to metacognition. During this phase, learning has occurred and learners decide whether to make dramatic and long-term alterations to beliefs, motivation, and strategies that make up SRL (Winne & Hadwin, 2008).

Winne and Hawdwin’s (1998) model of SRL maintains the four assumptions of SRL described at the beginning of this section. There are some notable qualities of their model that distinguish their model from others. First, their model separates the process of task definition from goal setting and planning. In their model of SRL, task definition is divided into three subelements that include students’ self-efficacy for a learning task, their prior knowledge for a learning task, and the learner’s understanding of the task itself. By separating task definition into subelements, Winne and Hadwin highlighted how individual differences impact SRL. Another point emphasized by this model is its firm stance that SRL takes place in phases that are recursive and not strictly sequenced. The Winne and Hadwin model highlights the fact that the COPES factors take place during each phase of SRL and that information gathered from one factor may cause learners to reengage with various phases until learners generate a desired product.
Winne and Hadwin’s (1998) model for SRL focuses on the self-regulated learning processes itself and not how SRL is taught or learned. Because this study focused on teaching learners specific strategies for engaging in SRL, this model was not an appropriate one to use for this study.

**Pintrich’s (2000) Model of Self-Regulated Learning**

Pintrich’s (2000) model of SRL describes self-regulation as a four-phase cycle that takes place in four areas. The four phases of self-regulation includes planning, monitoring, controlling, and reacting. Pintrich (2002) cautioned that each learning situation will incorporate various phases of self-regulation and that not every learning situation requires all phases of self-regulation. Self-regulation phases take place in a general time-ordered sequence, but the phases are not structured hierarchically or linearly such that an earlier phase must always precede or follow later phases. Research has suggested that the control, monitoring, and reaction phases take place simultaneously and that they are difficult to separate from one another (Pintrich, Wolters, & Baxter, 2000).

In addition to the four phases of self-regulation, Pintrich’s (2000) model includes four areas of self-regulation that learners can attempt to control, monitor, and regulate: cognition, motivation, behavior, and context. Cognition refers to the various cognitive and metacognitive strategies learners use to perform learning tasks. Cognitive strategies can be used during each of the four phases of SRL. Motivation of self-regulation incorporates the motivational beliefs individuals have about themselves and includes self-efficacy for specific tasks and the value they have for a given task. The self-regulation of motivation focuses on the strategies individuals use
to control and regulate their motivational beliefs so they may accomplish learning tasks. Another area of self-regulation is behavior. This area describes the effort an individual expends on completing a task. It includes behaviors such as help-seeking, persistence, and using positive self-talk (Cooper & Corpus, 2009; Pintrich, 1999).

The final area of self-regulation is context. Context concerns various elements of the learning environment. Regulation of context includes understanding classroom contexts such as classroom rules and procedures for task completion. In addition, it may include understanding the dynamics of the teacher and student relationships.

Pintrich’s (2000) model of self-regulation suggests that each phase of self-regulation, planning, monitoring, control, and reaction takes place in each area of self-regulation, cognition, motivation, behavior, and context. During the regulation of cognition, learners plan and activate cognition by setting goals, activate prior knowledge, and activate metacognitive knowledge. Once learners activate cognition, they monitor it. Monitoring cognition is referred commonly to as metacognition. These processes are dynamic and process-oriented and include comprehension monitoring and judgments of learning. Cognitive monitoring may include times when learners recognize they do not comprehend what they read or realize they are prepared adequately for a test. Cognitive control and regulation takes place when learners adjust their cognition. An important element of this phase of cognition is the use of specific cognitive strategies for memory, learning, problem solving, and thinking. The final phase in cognitive self-regulation is reaction and reflection on learning. Reaction and reflection include task-performance judgments and learner attributions for performance.
Pintrich’s (2000) model explains that learners also use all phases of self-regulation as they regulate motivation and affect. During the planning and activation phase of motivational self-regulation, learners make efficacy judgments, assign task value, and determine task interest. Once learners have activated motivational self-regulation, it is monitored. During this phase, learners identify their own motivation and adapt it to task demands. As learners monitor their motivation, they also control and regulate it. Learners control motivation by using a variety of techniques such as positive self-talk and self-consequencing. The final phase of motivational self-regulation includes reaction and reflection and takes place upon completion of a task and consists of possible emotional response to learning outcomes such as happiness at success or disappointment in failure. In addition, learners may make attributions for the outcome (Weiner, 1992). Attributions are explanations students make for their learning outcomes. Attributions are characterized as either internal or external, stable or unstable, and controllable or uncontrollable.

According to Pintrich’s (2000) model of self-regulation, learners also regulate their behavior. In the forethought, planning, and activation stage of self-regulation, behavioral self-regulation includes time management and effort planning. Time management may involve creating a study plan and allocating time for learning tasks and other activities. Behavioral monitoring follows this phase of self-regulation. During this phase, learners monitor their use of time and the effort they expend on learning tasks. Given what learners discover during the monitoring phase, they will take new action during the behavioral control and regulation phase. Learners may adjust effort levels, change time allocations, or ask for assistance. As a final step in
behavioral self-regulation, learners make reflections on behaviors. During this time, learners consider whether they have allocated enough time for a given task, expended enough effort, and may decide to make changes in these areas in future learning situations.

The regulation of context is the final area of self-regulation described in Pintrich’s (2000) model of self-regulation. Regulating context during the forethought, planning, and activation phase includes the consideration of many factors that influence learning tasks such as classroom norms, grading practices, classroom climate, and teacher warmth. Students consider these factors when deciding how they will approach a learning task. Once students become aware of the contextual features of a learning task, they continually monitor their learning context. Students monitor task requirements, rewards structures, and grading practices while they are working on learning tasks and make adjustments given the contextual boundaries established by the teacher. When students make adjustments to learning approaches based on contextual features of learning task, they enter the control and regulation phase of Pintrich’s model.

In addition to controlling the contextual features of a learning task, learners adjust the environmental context of learning. As students get older, learning often occurs outside of the classroom. In order for students to do well academically, they need to be able to regulate their study environment. Successful students remove distractions such as music, friends, or television. They also create organized, well-equipped learning environments that support learning.
After learning tasks are completed, students engage in the final phase of self-regulation: reaction and reflection. In this phase, students assess the learning task itself or classroom environment. Contextual assessments may focus on affective elements such as comfort and enjoyment. In addition, learners may react and reflect on cognitive features of a task such as achievement and overall learning.

Pintrich’s (2000) model of self-regulated learning includes four phases of self-regulation: (a) forethought, activation, and planning, (b) monitoring, (c) control and regulation, and (d) reaction and reflection. In addition to four phases of self-regulation, Pintrich’s model describes four areas of self-regulation: (a) cognition, (b) motivation and affect, (c) behavior, and (d) context. Pintrich’s model posits that for most learning situations, learners use phases of self-regulation to regulate the four areas of self-regulation. Pintrich’s model highlights the complex nature of learning and differs from the Winne and Hadwin (1998) model in several ways.

Pintrich’s (2000) model highlights the distinct areas learners monitor during each self-regulation phase. The idea that learners engage in self-regulatory phases in each area of self-regulation, cognition, motivation, behavior, and context shows the complexity of self-regulatory processes. Pintrich’s model allows researchers to consider many variables when conducting self-regulatory research. Researchers could describe or manipulate any phase self-regulation in any of the four areas of self-regulation.

This study’s main goal was to teach students how to employ self-regulation strategies for history test preparation. The Pintrich (2000) model does provide contextual considerations for this study; however, the model does not include features
that describe how students learn to employ self-regulation strategies. For this reason, this model did not serve as the theoretical foundation for this study.

**Zimmerman’s (2000) Social-Cognitive View of Self-Regulated Learning**

The final model of self-regulated learning that is presented is Zimmerman’s (2000) social cognitive view of SRL. Self-regulation viewed from a social cognitive perspective explains human functioning as a series of reciprocal interactions between behavioral, environmental, and personal variables (Bandura, 1986; Vygotsky, 1986). These variables are part of a triadic feedback loop that learners use to gather feedback on learning conditions and adjust effort. Personal variables include self-efficacy and motivation. These two personal variables influence achievement behaviors such as effort and persistence in learning situations (Zimmerman, 2000).

Learners regulate the behavior variable by self-observing and strategically adjusting performance processes and methods of learning. Environmental self-regulation takes place when learners observe and adjust environmental conditions or outcomes. Personal self-regulation occurs when learners monitor and adjust their cognitive and affective states. Personal self-regulation may include using imagery to recall important information or visualizing a peaceful setting to help oneself relax. Learners monitor the constant flux of learning conditions through feedback loops from personal, environmental, and behavior factors. In response to monitoring learners adjust personal, behavioral, and environmental variables (Bandura, 1986; Vygotsky, 1986; Zimmerman, 2000).

The social cognitive view of self-regulated learning also suggests that self-regulation is comprised of three subprocesses (Bandura, 1997). The first subprocess
is self-observation that can be described as focused attention on specific areas of learners’ behaviors. A second subprocess of self-regulation is self-judgment that takes place when learners compare current performance to a standard. The last subprocess of self-regulation is self-reaction. Self-reaction occurs when learners make evaluative judgments of their performance. Self-regulation requires learners to observe, judge, and react to themselves as they are engaged in learning tasks. Individuals learn these processes through social models such as parents, teachers, and peers (Bandura, 1986; Vygotsky, 1986).

Self-regulatory processes and the motivational beliefs that accompany the processes occur in three cyclical phases: a forethought phase, a performance and volition control phase, and a self-reflection phase (Zimmerman, 2000). The forethought phase includes the processes that precede actions and establishes conditions for learning. The performance and volition phase refers to the use of cognitive, affective, and behavioral actions that take place during a learning effort. Self-reflection includes the processes that arise after performance efforts. Reflections influence forethought in subsequent learning efforts, thus completing the cyclical nature of self-regulated learning processes.

The forethought phase contains two processes, task analysis and self-motivational beliefs. Each of these processes includes several subprocesses. A major component of task analysis is goal-setting. Goal-setting includes the act of determining specific learning outcomes. Task analysis also includes strategic planning (Weinstein & Mayer, 1986). Strategic planning refers to the identification
and use of appropriate learning methods given a specific task and learning environment. The second component of task analysis includes motivational beliefs.

Motivational beliefs are comprised of several factors that include self-efficacy, outcome expectations, intrinsic interest or valuing, and goal orientation. (Zimmerman, 2002). Self-efficacy is characterized by the beliefs learners have about their ability to learn. Outcome expectations refer to beliefs about the anticipated consequences of actions (Bandura, 1997). Intrinsic interest includes the learner’s valuing of a task for its own merit. Goal orientation refers to the type of goals learners establish for specific tasks. Performance goals are goals that focus on attaining a certain grade or standard level of achievement. Mastery goals are goals that center on learning and improving (Schunk & Zusho, 2002). Prior to engaging in specific learning tasks, learners engage in task analysis and summon self-motivational beliefs.

Once learners have initiated the forethought phase of self-regulation, they begin the performance and volition phase. This phase consists of two processes: self-control and self-observation. Each process includes several subprocesses. Self-control takes place when learners use the specific strategies selected during the forethought phase (Zimmerman, 2002). Self-control includes four subprocesses: self-instruction, imagery, attention-focusing, and task strategies. Self-instruction takes places when learners describe how to proceed with a learning task as they execute the task. Imagery includes the use of visualization techniques that helps learners recall information or envision success. Attention focusing techniques includes strategies learners use that help them screen out distractions. Task strategies refers to
techniques learn to reduce a task to its essential components and meaningfully synthesize information. Task strategies include techniques such as note taking, test preparation, and problem solving.

Self-observation is the second process included in the performance phase. Self-observation takes place when learners track their performance, the conditions that surround their progress, and the effects of their performance (Ericsson & Lehman, 1996; Zimmerman & Paulsen, 1995). Self-recording and self-experimenting are processes learners use to self-observe. Self-recording takes place when learners record personal events associated with a learning task such as the amount of time it takes to complete homework. Self-experimenting takes place when learners systematically manipulate aspects of their academic functioning. The performance phase of self-regulation includes self-control and self-experimenting. Learners use self-control and self-experimenting strategies when they implement the learning plans defined during the forethought phase of self-regulation.

Once learners have completed elements of a learning task, they engage in self-reflection. Two self-reflective processes comprise the self-reflection phase: self-judgment and self-reactions (Zimmerman, 2002). Self-judgment can take the form of self-evaluation and refers to comparing one’s performance with a standard. Self-judgments are linked to making causal attributions. These attributions take place when learners make judgments about the causes of their success or failure and attribute causality to their outcomes. When students attribute learning outcomes to controllable factors such as effort and use of strategies, they employ internal attribution patterns. When students attribute learning outcomes to uncontrollable
factors such as an unfair teacher or lack of ability, students maintain external attribution patterns (Weiner, 1992). The nature of a learner’s causal attribution influences the level of effort produced in future learning situations (Zimmerman, 2002).

Another facet of the self-reflection phase of self-regulation is self-reaction. This process includes eliciting an emotional response to the work completed. An example of self-reaction is self-satisfaction. Self-satisfaction occurs when the learner is content with the learning outcome and the affect associated with the outcome. Self-reaction also includes adaptive or defensive inference responses (Pintrich & Zusho, 2002). These inferences guide the learner in making adjustment in his or her self-regulatory approach in future learning situations. Defensive inference responses protect the learners’ ego and results in the learner retreating from future learning opportunities. When learners make adaptive inferences, they identify strategies they can employ to improve future learning outcomes. Adaptive inference reactions help learners improve self-regulatory processes. The self-reflection phase of the self-regulatory process influences how learners approach future learning self-regulatory processes (Schunk, 2008; Zimmerman, 2000).

The social cognitive view of self-regulated learning outlines the processes learners engage in throughout the three phases of self-regulation. In addition, this model outlines how learners develop self-regulatory competence. According to Schunk and Zimmerman (1997), the development of self-regulation begins from social sources and then moves to self-sources as learners go through a series of developmental levels.
According to the social cognitive model of self-regulation, there are four levels of self-regulatory development. The first level of development is observation (Schunk & Zimmerman, 1997). During this time, the learner observes a model and listens as the model verbalizes thought processes that accompany each self-regulatory phase. In the classroom setting, the teacher serves as the model. The word teacher can be substituted for the word model in the subsequent explanation of self-regulatory development. Once the learner has observed a model, he or she is ready to imitate the model’s self-regulatory behaviors. Emulation is the second level of self-regulatory development. During the emulation stage, the learner attempts self-regulatory processes and the model provides social guidance and feedback.

The third level of self-regulatory skill takes place when a learner tries to master the skill in a structured setting away from the model (Zimmerman, 2002). This phase of self-regulation is referred to as self-control. During the self-control phase, the learner attempts to replicate self-regulation techniques presented by the model. Success at this level is reached when the learner can match the standard presented by the model. The final phase of self-regulatory development is the self-regulated level. When learners reach this level of performance, they are able to adapt self-regulatory processes to meet changing personal and contextual circumstances.

The social cognitive view of self-regulatory development posits that the acquisition of self-regulation takes place through a social learning process. In the classroom, the main social learning model is the teacher. In the classroom, the social cognitive view of self-regulatory development model suggests that learning takes place more efficiently when learners observe teachers’ cognitive processes, imitate
their teachers, and receive feedback from their teachers. Schunk and Zimmerman (1997) suggested that discovery learning through asocial means is possible; however, it produces less favorable outcomes because novice learners use ineffective self-regulatory strategies. The social cognitive model of self-regulation suggests that when learners experience a social learning environment, they learn to perform basic skills, set goals, monitor progress, and adjust strategic approaches when applying skills on their own.

Zimmerman’s (2000) social cognitive view of self-regulated learning is the theoretical model that was used for this study. Zimmerman’s (2000) model includes several features that addressed essential challenges presented in the research problem. The participants consisted of an intact sixth-grade history class with six underachieving students who had a limited knowledge of effective learning strategies. The forethought and performance and volition control phase of Zimmerman’s (2000) model includes the use effective learning strategies. One factor that contributes to low academic performance is having a limited knowledge of effective learning strategies (Dembo & Eaton, 2000). To address the needs of students, this study included explicit instruction in the use of effective learning strategies. Another benefit of Zimmerman’s (2000) model is that it integrates many elements of motivation theory in each phase of the self-regulation cycle. Low-achieving learners demonstrate low motivation for academic tasks (Dweck & Master, 2008; Schunk, 2008). This study attempted to improve students’ motivation as they engaged in each phase of the self-regulation cycle.
A final reason Zimmerman’s (2000) model was used in this study was because it is concise and relatively simple to explain. Part of the intervention design included explicit instruction about self-regulatory processes. The Winne and Hawdwin (1998) model and the Pintrich (2000) model outlined many complex features and interrelationships that were too complicated to teach to sixth-grade students. In addition, Zimmerman’s model of self-regulation includes explicit features that outline an instructional sequence that explain how students learn to self-regulate. The instructional sequence is another feature of the model that was integrated into this study. Finally, the research that this study was modeled after, Cleary et al. (2008), used Zimmerman’s social cognitive model of self-regulation as the theoretical rationale for their investigation.

The preceding information described the main features of three theoretical models of self-regulation: the Winne and Hadwin (1998) model, the Pintrich (2000) model, and Zimmerman’s (2000) model. In addition, the unique features of each model were pointed out. Finally, the preceding section detailed whether each model was appropriate to use for this study.

The previous section reviewed theoretical models of self-regulation. Next, several instructional models are described in the review of the literature. This study attempted to teach self-regulatory skills to at-risk students. In order to choose the most appropriate instructional model to use for this study, self-regulation instructional models were reviewed and a series of models were identified as possible models that could address the needs of the participants and addressed the research purpose.
Self-Regulation Instructional Models


Self-regulation instructional models are used to teach students how to apply self-regulation strategies in a variety of curricular areas that include reading, writing, mathematics, and general study skills (Butler, 2003; Cleary & Zimmerman, 2004; Graham & Harris, 1997).

Butler’s (2003) Model of Strategic Content Learning

Butler (2003) developed a model of self-regulated learning called Strategic Content Learning (SCL). This model contains details of how to structure instruction so that it promotes self-regulated learning for individuals and was designed to meet the needs of students with learning disabilities. The SCL model includes two goals: to develop self-regulated engagement in tasks and to construct a range of knowledge and beliefs that support self-regulation.

At the core of the SCL model are instructional methods that support the development of strategic learning. It is modeled after the cognitive-behavioral approach to learning developed by Zimmerman (1989, 1994). The cognitive-behavioral perspective posits that self-regulated learning takes place in a recursive cycle of problem-solving activities that include analyzing tasks, implementing task-appropriate strategies, monitoring outcomes, and adjusting strategies as needed.
(Butler & Winne, 1995; Zimmerman, 1989). The SCL model incorporates important ideas regarding the development of two subcomponents of self-regulation: metacognitive knowledge and motivational beliefs (Butler, 1998). While developing the SCL model, Butler posited that students construct metacognitive knowledge and motivational beliefs when performing consecutive tasks over time. This model is based on the premise that sociocultural and individual factors influence the development of self-regulation in academic work, metacognitive knowledge, and motivational beliefs; that students come to school with some self-regulatory behaviors, knowledge, and beliefs; that teachers build upon students’ prior knowledge when facilitating the development of self-regulation strategies (Butler & Winne, 1995). Through reflective discourse on meaningful experiences, knowledge is co-constructed in a socially situated manner between learners and teachers.

Another important element of the SCL model is that, at first, learners are taught self-regulation strategies through guided discussion. In this process, teachers facilitate students’ self-regulation and then guide students in abstracting the principles of learning while reflecting on their experiences. Butler (2003) also stressed the need for learners to develop individualized approaches to self-regulated learning and suggested that teaching the same strategies to all students and ignoring students’ prior knowledge reduces instructional effectiveness.

The final principle that serves the SCL model rests in the idea of who should lead the strategic modeling. Other strategy-based instructional models such as social cognitive learning models (Zimmerman, 2000) have the teachers explicitly model strategies like task analysis, goal setting, problem solving, and monitoring of learning
and specify that students should copy the model until they can replicate what they have observed. The idea that students need explicit instruction with social models in order to learn self-regulatory processes is challenged by the SCL model. Instead, students learn self-regulation skills by participating in problem solving while engaged in self-regulated learning. The teacher uses instructional strategies that include problem solving and reflection that guide students in developing their own self-regulation strategies. The overall goal of the SCL model is for students to understand that they are capable of creating their own strategic approaches that will help them control their own learning outcomes.

The SCL model includes five stages of self-regulated learning. The first stage is task analysis. During this stage, learners identify what a learning task requires and establish criteria for success. Next, learners set goals for a learning task. The third stage involves developing a strategic approach to goal attainment. Once learners begin to apply their goal attainment strategy, they monitor outcomes and generate feedback. During this phase, learners consider alternative strategies as needed. The final phase of SCL includes developing a set of personalized self-regulation strategies that are unique to an individual learner. The SCL model focuses on developing individualized self-regulation strategies by focusing on learner’s prior knowledge, identifying what they do well, and targeting learner’s strengths and needs.

An important element of the SCL model is that it does not support the instruction of predefined learning strategies. Instead, instructors are advised to provide calibrated support to students by using guiding questions that assist students to develop their own strategies for self-regulated learning. According to the SCL
model, strategy instruction is dependent on social interaction and is delivered through interactive discussions. The intent of the SCL model is to promote students’ metacognitive knowledge and beliefs using a constructivist approach to learning.

One feature of the SCL model was developed in direct opposition to one aspect of Zimmerman’s (2000) model of social cognitive learning of self-regulation. In Zimmerman’s model, he suggested that learners best learn self-regulated learning strategies when they engage in a four-phase cycle of learning that includes explicit modeling of specific self-regulatory strategies with expert social models. Butler (2003) challenged the notion that learning was dependent on a direct observation of a model. She believed that learners could learn self-regulation strategies through direct conversations while a learner is engaged in meaningful learning tasks.

The learning conditions required by the SCL model were not amenable to the student sample and the methodological requirements of this study. This study took place in an intact sixth-grade class with six, low-achieving students. Instruction was delivered to the entire group of students simultaneously. The SCL model is appropriate for one-on-one or small-group learning situations where a teacher can help students identify individual approaches for learning through individualized instructional prompting and guidance. The aforementioned conditions were not possible with such a large group of students; therefore, the SCL approach to self-regulated learning was not used in this study.

The preceding information outlined the features of Butler’s (2003) Strategic Content Learning model. The SCL model utilizes a constructivist approach to teach self-regulatory strategies. The main aim of the SCL model is to teach students how to
develop their own self-regulatory processes and approaches to learning tasks. The next section presents Harris and Graham’s (1996) Self-Regulated Strategy Development instructional model.

**Harris and Graham’s (1996) Self-Regulated Strategy Development Model**

The Harris and Graham (1996) model of self-regulation is called Self-Regulated Strategies Development (SRSD). Their model integrates several theoretical perspectives in the areas of written language, development of expertise, emerging practices in writing instruction, self-regulation, social cognitive theory, motivation theory, learning characteristics of students with significant learning problems, and effective teaching and learning. The SRSD model includes three important features. First, it was designed to target students with severe learning difficulties, including students with learning disabilities (LD). Another salient characteristic of their model is that it promotes explicit rather than implicit instruction of self-regulation skills. Because students with LD and other learning difficulties struggle with self-regulation, Harris and Graham’s model integrates self-regulation strategies through each of the instructional stages of the SRSD model (Zito, Adkins, Gavins, Harris & Graham, 2007). The third important feature of the Harris and Graham model is that it acknowledges that struggling learners face affective, behavioral, and cognitive challenges that include maladaptive attributions, low self-efficacy, low motivation, and low engagement in academic tasks. The SRSD model incorporates specific strategies designed to teach students to attribute learning outcomes to effort and strategy use, improve self-efficacy, and increase student engagement.
The Self-Regulated Strategy Development model has three main goals. The first is to teach students higher level cognitive processes involved in academic performance. The second goal is to help students develop powerful self-regulation strategies that teach students to monitor and manage academic performance. The last goal is to help learners develop positive attitudes about learning and themselves as students (Zito et al., 2007). To achieve these goals, Harris and Graham (1996) developed six flexible and recursive stages of instruction designed to teach students specific learning strategies for specific content areas that include writing, reading, and mathematics. The SRSD instructional model includes the six following stages: (a) develop and activate background knowledge, (b) discuss it, (c) model it, (d) memorize it, (e) support it, and (f) independent performance.

During the develop and activate background knowledge stage, the teacher defines the skills students will use in order to perform a strategy and determine students’ knowledge and ability to perform the skills. The next stage of SRSD is to discuss the strategy. Discussing the strategy includes explaining the reason for using a strategy and explaining that strategy use improves academic performance. The last step in discussing a strategy is for the teacher to introduce the steps of the strategy to the students. After introducing the strategy, the teacher models the strategy. During modeling, the teacher thinks aloud and shows students why they are doing the steps, explains how she knew to use the steps in a given strategy, identifies important actions and cues, and identifies the knowledge needed to use the strategy. After modeling the steps in a strategy, the teacher helps students memorize the strategy steps.
Once students can identify the steps, the students and the teacher work collaboratively and practice using the strategy until the students are able to perform the strategy on their own. A key part of the support step is for the teacher and the students to discuss how, when, and why to use the strategy repeatedly. The support stage also involves providing scaffolding opportunities for students to apply the new learning strategy. Scaffolding may include giving students cues and hints, allowing students to work in small groups, or providing cueing sheets to help students remember various steps for learning a strategy. The goal of the support stage of SRSD is to help students use self-regulation strategies independently. Students will require varying levels of support and time to learn how to apply the strategy independently and should not be rushed through support stage learning (Lienemann & Reid, 2006).

The final stage of SRSD is independent performance. During this stage, students use the strategy independently and the teacher’s main job is to monitor performance and ensure consistent strategy use. Teachers and students work together to acquire, implement, evaluate, and modify their work through the use of self-regulation strategies. Typically, each stage requires between one to five lessons that last between 20 and 30 minutes.

The SRSD model applies many features of Zimmerman (2000) social cognitive model of self-regulation. Fundamental to both models is the idea that self-regulation progresses through stages and that learning is recursive and that students may need to return to earlier learning stages based in learning needs. To address individual learning needs, both models suggest that instruction match students’ level
of skill development. Both models incorporate three stages of self-regulation development that include self-observation, self-judgment, and self-reaction. The SRSD model describes instructional strategies that support students as they evolve through the various stages of self-regulation development described in Zimmerman’s (2000) model. Each model includes various processes that support self-regulation including planning, revising, time management, organization, and reflection.

The two models explain the development of self-regulation similarly. Zimmerman (2000) suggested that learners acquire self-regulatory skills by experiencing four levels of development: observation, imitation, self-control, and self-regulation. The SRSD incorporates each of the levels in its instructional stages (Harris & Graham, 1996). In the SRSD model, observation and imitation take place when students watch the teacher model strategies and participate in discussions about strategy use. Later in the SRSD instructional sequence, students imitate and apply new strategies independently with varying levels of teacher support. Ultimately, students perform strategies independently and adapt them in future learning tasks. The main objective of SRSD is for the teacher to gradually shift from guiding and scaffolding learners to releasing control of learning and strategy use to the learners (Vygotsky, 1986; Zito et al., 2007).

The SRSD instructional model has been used in several content areas including reading, mathematics, and writing. The majority of SRSD research has been conducted with writing instruction. Over 30 studies have investigated the utility of SRSD with struggling writers including students with LD (Harris, Reid, & Graham, 2004). Students from first grade through high school have learned writing
strategies using the SRSD methodologies. A meta-analysis of 18 studies reported that group design interventions averaged effect sizes of 1.14 for quality, 1.86 for length, and above 2.0 for story grammar elements (Graham & Harris, 2003). In addition, data gathered from the meta-analysis confirmed that SRSD effects are maintained over time and that students with LD were able to transfer SRSD across writing genres.

The three main goals of the SRSD model are to develop high-level cognitive processes, to develop self-regulation strategies, and to develop positive attitude about learning and themselves as students. These goals support the purpose of this study; however, implementing SRSD in this study was problematic for two reasons. First, the focus of this study was to teach a general population of students self-regulated learning strategies for history test preparation. No SRSD studies have been performed for history learning strategies; therefore, an instructional design for SRSD in the area of history studying was not available. The second problem is that the SRSD model does not include specific strategies used for test preparation specifically. The main purpose of this study was to teach students test preparation skills. One of the outcomes of this study was to improve students’ history test scores. Thus, SRSD applies the elements of social cognitive learning theory that were in alignment with this study; however, SRSD does not include instructional strategies for the content area or the learning skills this study addressed.

In the previous section, the SRSD model was presented as an application of Zimmerman’s (2000) model of self-regulated regulated learning. In addition, the merits of the SRSD instructional approach also were detailed. Notwithstanding the
research that supports SRSD as an effective instructional model to use to teach self-regulatory skills, it was not an appropriate model to use for this study. The following section presents another model of self-regulated learning that matched the research focus for this study.

**Cleary and Zimmerman’s (2004) Self-Regulation Empowerment Program**

Cleary and Zimmerman’s (2004) Self-Regulation Empowerment Program (SREP) is the last instructional model that is presented in this review. This section contains details on the theoretical base of the model, the instructional elements of the program, and how the SREP instructional model addressed the research purpose of this study.

Cleary and Zimmerman (2004) developed the SREP instructional model in response to the reduced motivation and academic performance exhibited by middle-school students. The SREP instructional model has three main goals: to empower middle-school students through cultivating positive self-motivational beliefs, to increase students’ knowledge of learning strategies, and to apply learning strategies in academic tasks using self-regulated learning strategies. The SREP model is grounded in two fundamental assumptions. The first assumption is that low student motivation, use of ineffective strategies, and underdeveloped self-regulation skills contribute to low student achievement (Gettinger, & Seibert, 2002; Pintrich & Schunk, 2002). The second assumption is that contextual and situational variables influence students’ motivation and self-regulation (Linnenbrink & Pintrich, 2002).

Given the two assumptions of the SREP model, Cleary and Zimmerman (2004) designed the SREP model to include two major components: (a) diagnostic
assessment and (b) developing the self-regulated learner. The diagnostic assessment consists of identifying in which classes a student struggles, in which areas of performance (homework completion, test grades, etc.) the student struggles, which learning strategies the student uses for a given performance area, and identifying how a student applies learning strategies for a specific performance area. The diagnostic assessment provides the instructor with information regarding the learner’s motivational and strategic weaknesses. Once diagnostic assessments are performed, the focus shifts to developing a self-regulated learner.

The SREP model develops self-regulated learners by integrating three steps: (a) enhancing student empowerment, (b) broadening students’ knowledge and use of study and learning strategies, and (c) teaching students to use the cyclical feedback loop of self-regulation. Enhancing student empowerment is done throughout the SREP model. Students become empowered when they realize they have control over their academic success. In the SREP program, students learn how to control academic outcomes by understanding the link between strategy use and success and failure in school.

Students keep track of their learning processes and learning outcomes by using self-observational techniques such as graphing grades and recording study or learning strategies that were used to earn the grades received. The teacher then helps the students learn the link between grades and strategies used. Through discussion, the learner can understand that improper strategy use led to a disappointing learning outcome, and by adopting more effective strategy use, the learner can improve learning outcomes.
The next element of the SREP model is study and learning strategies. Once students understand the connection between performance outcomes and strategy use, they need to learn effective study and learning strategies. The SREP utilizes a social cognitive model for strategy instruction such that students learn to use strategies from social sources such as a teacher or tutor and gradually learn to use them in a more independent manner until they are able to apply strategies independently and flexibly in a variety of settings (Schunk & Zimmerman, 1997).

The last component of the SREP model is the cyclical feedback loop. Students learn how to use study and learning strategies using Zimmerman’s cyclical feedback model for self-regulation (Zimmerman, 2000). In the SREP model, teachers teach students to use a graphing procedure that includes the following steps: (a) set goals and develop a strategic plan, (b) record learning process on a study sheet and document assessment results on a graph, (c) evaluate goal attainment, and (d) make strategic attributions and adaptive inferences.

The SREP is the instructional model that was used for this study. The SREP model incorporates several elements that addressed the research questions for this study. First, the SREP model addresses motivational beliefs of recalcitrant students. One research question in this study was concerned with how a self-regulation learning strategies intervention would impact students’ self-efficacy beliefs. The last step of each self-regulatory cycle addresses motivational beliefs and teaches students to attribute success to strategy use, which should improve students’ self-efficacy.

Another way the SREP model addressed the research problem in this study is that the model focuses on teaching students specific learning and study strategies that
are targeted to improve academic performance outcomes. Young adolescents who struggle in school rarely have a well-developed study-strategies repertoire (Dembo & Eaton, 2000; Weinstein et al., 2000; Zimmerman, 2002). Providing explicit instruction in study strategies is a way to support learners in developing skills that support academic success. The SREP model teaches students specific learning strategies in an effective manner that supports self-regulation. Students need to know which learning strategies to use and be able to refine them based to the needs of the shifting academic contexts they will experience throughout their academic careers. Understanding how to apply learning strategies in a self-regulated manner will help learners select, evaluate, and adjust strategies to meet their learning goals.

This section described Cleary and Zimmerman’s (2004) Self-Regulation Empowerment Program. An overview of the purpose and objectives of the SREP was detailed, and the instructional elements of the SREP program were described. In addition, the rationale for choosing the SREP as the instructional model for this study was explained. The next section presents self-regulation research methodologies and provides a rationale for the research methodologies that were used in this study.

**Self-Regulation Research Methodology**

This section contains reviews of the various methods researchers used to measure the self-regulation as an aptitude and an event. The perspective from which self-regulation is considered guides the researcher in using either qualitative or quantitative methodologies. This section has several qualitative and quantitative methodologies used to gather self-regulation research data. In addition, an explanation of the research methodologies that were used in this study is detailed.
Self-regulation researchers have developed methodologies that measure self-regulation as an aptitude and an event. When self-regulation is measured as an aptitude, data are gathered using questionnaires and structured interviews (Winne & Perry; 2000; Zimmerman & Martinez-Pons, 1986; Zimmerman & Schunk, 1989). These data-gathering methodologies capture learners’ memories and their interpretations of self-regulatory actions. When data are gathered using questionnaires and interviews, self-regulation is considered an aptitude because learners recall general patterns of behavior instead of reflecting on a specific learning experience.

Two popular self-report questionnaires have been used in numerous self-regulation studies, the Learning and Study Strategies Inventory (LASSI) and the Motivated Strategies for Learning Questionnaire (MSLQ). The LASSI (Weinstein et al., 1987) was designed to measure undergraduate students’ use of study and learning strategies. The MSLQ (Pintrich, Smith, Garcia, & McKeachie, 1991) was designed to identify college students’ motivational orientations and their use of learning strategies for their course work. Both of these instruments list a variety of statements regarding the use of learning strategies (e.g., When work is difficult, I either give up or study only the easy parts) and allow students to identify whether the statements are reflective of their use of learning strategies.

A new self-regulation inventory has been developed called the School Motivation and Learning Strategies Inventory (SMALSI, Stroud & Reynolds, 2006). The SMALSI includes two versions, one for students between 8 and 12 years of age and another for students between 13 and 18 years of age. This instrument includes
questions that investigate 10 learning strategy constructs: study strategies, note-taking and listening skills, reading and comprehension strategies, writing and research skills, test-taking strategies, organizational techniques, time management, low-academic motivation, test anxiety, and concentration and attention difficulties. Questions are designed to identify how often students use various learning strategies and study techniques. This study used an adapted version of the SMALSI because some of the constructs it contains were not addressed in the this study. Researchers have found fallibility with student self-report measures (Winne & Jamieson-Noel, 2002). Self-report measures provide important information; however, some researchers have reported that some students have difficulty accurately reporting their study tactics (Perry, 2002; Stone, 2000).

In an effort to gather more precise information, self-regulation researchers gather data through structured and semistructured interviews. The Self-Regulated Learning Interview Scale (SRLIS; Zimmerman & Martinez-Pons, 1986, 1988) is a structured interview protocol that presents students with six fictitious learning situations such as preparing for a test or writing an essay. Students are asked to hypothesize how they would engage with the various learning tasks. Then their responses are transcribed and coded into 14 self-regulatory categories that include motivation, metacognition, and behavior. The motivation categories include self-evaluation reactions and self-consequences. Metacognitive categories include goal-setting and planning, organizing and transforming, seeking information, and rehearsing and memorizing. The behavioral categories include environmental structuring, keeping records and monitoring, and reviewing texts, notes, tests, and
seeking assistance from peers, parents, and teachers. Students’ responses are coded into 14 self-regulatory categories for each of the six learning contexts, and a frequency score is derived. After being interviewed, students rate how consistently they use various strategies using a 4-point scale ranging from seldom to most of the time.

Both self-report questionnaires and interviews provide important information about learners’ beliefs, attitudes, and behaviors about self-regulation (Winne & Perry, 2000). Self-report questionnaires and interviews neither provide information about how learners construct meaning within unique contexts of with specific tasks in individual classrooms nor illuminate the development of self-regulated learning and motivational beliefs (De Groot, 2002; Perry, 2002). In response to these concerns, researchers have devised methodologies that illuminate self-regulatory processes as they occur. When studies investigate self-regulatory processes as they occur, self-regulation is viewed as an event.

Self-regulatory events are considered temporal and have a beginning and an end (Zimmerman, 2008). One approach to measuring self-regulatory events includes gathering data about students’ self-regulatory behaviors before, during, and after learning. The following protocols capture self-regulatory processes as they occur: trace logs of SRL processes, structured diary measures, think-aloud procedures, microanalytic measures and cyclical analyses of SRL, and observations of self-regulatory processes (Greene & Azevedo, 2009; Winne & Perry, 2000; Zimmerman, 2008). Methodologies that capture self-regulatory processes as they take place are called on-line methodologies.
Traces are a type of on-line measure that capture observable indicators of cognition as students engage with a task (Winne & Perry, 2000). Computer trace logs are computer programs that capture various study strategies students use while studying. Winne and his colleagues developed a program called gStudy that allows students to record notes, make glossaries, annotate content, create concept maps, search for information, chat and collaborate with others, and receive coaching (Winne, Nesbit, Kumar, Hadwin, et al., 2006). The gStudy program includes a log analyzer that captures traces of students’ study strategies. Most studies that utilize computer traces try to compare students’ trace measures with self-report measures (Winne & Jamieson-Noel, 2002). These investigations focus on the self-monitoring aspect of self-regulation and report the accuracy between students’ judgments of their studying processes to actual performance. This study was neither focused on calibration nor on the self-monitoring phase of self-regulation. In addition, the researcher did not have access to computer programs that perform computer traces. For these reasons, computer trace methodologies were not used in this study.

Structured diaries capture students’ on-line self-regulatory processes. Structured diaries are students’ written responses to questions about the self-regulation processes students use before, during, and after studying. Studies that utilize structured diaries include research participants who range from university engineering to mathematics students in the fourth grade (Schmitz & Wiese, 2006; Stoeger & Ziegler, 2007). Structured diaries measure students’ use of self-regulated learning strategies throughout the learning process. Structured diaries are an effective strategy for capturing the online use of self-regulatory processes. In this study,
students filled out study diaries after each test. Study diaries provided data about several self-regulation processes including the amount of time students studied, the learning tools they used as they studied, and with whom they studied.

Think-aloud protocols are another online data gathering methodology. The think-aloud protocol invites students to report thoughts and cognitive processes while performing academic tasks (Ericsson, 2006). As students think aloud, researchers record their thinking and then code their responses into self-regulatory process categories (Azevedo & Cromley, 2004; Azevedo, Cromley, & Siebert, 2004; Greene & Azevedo, 2007). Once data have been coded, researchers validate data by confirming the self-regulation codes used to label think-aloud data.

A think-aloud protocol was used in this study for several reasons. First, think-aloud data provided an authentic representation of students’ use of self-regulatory processes as they occurred. One of this study’s research questions investigated how a self-regulation learning-strategies instruction program influenced students’ use of self-regulatory strategies. Data gathered through the think-aloud protocol illuminated which self-regulation strategies students applied. Another reason a think-aloud protocol was used is because it allowed students to express themselves orally. Other data-gathering protocols require students to type or write about their use of self-regulation strategies. Writing and typing is challenging for some students and would hinder some students’ ability to communicate strategy use. The final reason the think-aloud protocol was used is because it allowed the researcher to understand learners’ thought processes as they engaged in their learning tasks. Data gathered during the pre-intervention think aloud provided valuable information for the researcher.
regarding students’ prior knowledge in self-regulatory processes. Think-aloud information allowed the researcher to identify students’ learning needs and incorporate them into the instructional sequence of the self-regulation learning-strategies intervention.

Self-regulation data also are gathered through observations. When conducting observational research, researchers designate self-regulatory areas to observe such as a specific phase of self-regulation like task analysis, the use of specific strategies like environmental adaptations, or the use of specific processes such as monitoring progress (Boekaerts & Corno, 2005). Researchers also decide whether they will collect data via time-sampling techniques or event-sampling techniques. Observational data are often quantified by counting each self-regulatory process observed. The quantified data are then subjected to statistical analysis (Eliam & Aharon, 2003; Perry, 2001; Perry et al., 2002).

This study used observation data to capture data not articulated during think-aloud or interview sessions. Some students may not have the language skills needed to articulate self-regulatory processes through interview and think-aloud procedures (Boekaerts & Corno, 2005). Gathering observation data allowed the researcher to identify self-regulatory processes students perform subconsciously. In addition, observation data were used to help students provide more thorough responses to interview questions. For example, if students were unable to provide an answer to a question, the researcher recalled information from an observation to provide a context for a specific question. Observation data were used to confirm data from interviews and think alouds.
Interviews are another technique researchers use to capture self-regulation processes. A variety of interview techniques have been developed and include structured, semistructured, and unstructured approaches. Interviews allow learners to explain how they construct their own understandings (De Groot, 2002). Unstructured interviews ask learners to explain their self-regulation approaches in narrative form. Structured interviews use predefined questions to maintain learners’ focus around the researcher’s focus areas. Semistructured interview questions are chosen from a predetermined list. The researcher chooses questions that are relevant to a specific context the researcher is investigating.

This study used a structured interview protocol that was derived from the Self-Regulated Learning Interview Schedule (SRLIS, Zimmerman & Martinez-Pons, 1986). Students were asked to respond to SRLIS interview questions immediately after studying for a history test. Interview data were used to confirm and elaborate on data gathered during the observation and think-aloud portion of the study.

This section of the literature review explained that self-regulation is measured from two perspectives. The first perspective considers self-regulation to be an aptitude and the other identifies self-regulation as an event. Each perspective utilizes differing approaches to data collection. Aptitude measures of self-regulation include self-report questionnaires and structured interviews. Event measures of self-regulation enlist numerous strategies such as trace measures, structured diaries, think-aloud protocols, semistructured interviews, and observations. Data-collection techniques address the unique dimensions of self-regulatory processes and differing types of research questions. This section also provided a rationale for the specific
methodological strategies that were used in this study and an explanation of how those strategies address the research questions. The next section of the literature review provides an overview of empirical self-regulation research that guided the development of the proposed intervention.

**Scope of Self-Regulation Research**

The empirical research reviewed in this section focuses on studies that investigated students’ use of self-regulation strategies while studying in general and the effects of self-regulation interventions on study skills and academic performance. Participants in the studies reviewed include primary-, secondary-, and tertiary-school students. Researchers have investigated the effects of self-regulation interventions in many subject areas including mathematics (Stoeger & Ziegler, 2008), reading (Horner & Shwery, 2002; Mateos, Martin, Villalon, & Luna, 2007; ) writing (Harris et al., 2004; Lieneman & Reid, 2006), science (Cleary, Platten, & Nelson, 2008; Greene & Azevedo, 2009), and general study skills (Cleary & Zimmerman, 2004; Kitsantas, 2002). In addition, research has been conducted with a variety of students including students who have the following characteristics: (a) have average ability, (b) have learning disabilities, (c) are diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), and (d) are designated Gifted and Talented (Cukras, 2006; Eilam & Aharon, 2003; Kitsantas, 2002; Masui & De Corte, 2005).

Numerous studies report positive relationships between the use of self-regulation strategies and academic achievement (Cukras, 2006; Eilam & Aharon, 2003; Kitsantas, 2002; Masui & De Corte, 2005). Kitsantas (2002) conducted a study investigating the use of test-preparation strategies based on students’ achievement
levels. The researcher used Zimmerman and Martinez-Pons’s (1986) self-regulation interview questionnaire with 62 college students after they studied and took a test in their psychology of personality class. Questions were broken up into before, during, and after test-taking time frames. Students’ responses were classified into the strategies reported into Zimmerman’s (1989) list of 14 self-regulation strategies. Finally, students were categorized into a high- and low-achieving group based on their psychology test scores.

The data showed that high-achieving students reported more before test-taking strategies. Statistically significant differences were reported with high-achieving students in the areas of goal setting and planning, organizing and transforming notes, and help seeking. The data also showed differences in sample means in the self-regulatory processes of monitoring and keeping records, self-consequencing, and environmental structuring; however, the differences did not reach statistical significance. High-achieving students also exhibited different test-taking behaviors. During tests, high-achieving students reported more planning and reviewing of responses during testing. High-achieving students also reported significant differences in after-studying self-regulatory behaviors. The data showed that were statistically significant differences between students with high-test scores and students with low-test scores in goal setting and planning and monitoring.

Kitsantas (2002) also measured students’ motivational beliefs by gathering self-efficacy and perceived instrumentality data. High-achieving students’ data showed higher self-efficacy and perceived instrumentality scores than low-achieving students, and those differences were statistically significant. These results confirm
other correlational studies that have reported that learners who use self-directed strategies exhibit high achievement, high self-efficacy, and intrinsic interest in tasks (Schunk & Zimmerman, 1998).

A qualitative study by Eilam and Aharon (2003) identified the difference between ninth-grade students’ self-regulated learning behaviors while engaged in a year-long, group science inquiry task. Students’ discourse and behavior were observed and recorded. Data were analyzed using qualitative methodologies. Students reported self-regulatory behaviors using two tools, the yearly planning report and the daily planning report. The yearly planning report helped students plan their inquiry over the whole year, breaking the year into various stages of inquiry. The daily planning report helped students plan proximal goals that would assist them in completing the distal goal of finishing the inquiry. The two tools students used emphasized two phases of self-regulated learning: planning and time management.

The results from this study confirmed data from previous investigations; high-achieving students utilized more self-regulated learning skills than average-achieving students. Although this study failed to report any new findings in the self-regulation research, this study is significant to the self-regulation literature for a several reasons. First, this study gathered data over the course of an entire school year, so information is reflective of students’ long-term behaviors. Most self-regulation studies comparing achievement to self-regulation behavior take place over short durations of time (Kitsantas, 2002). Second, this study gathered qualitative data consisting of observations and transcriptions of videorecordings. Thus, the data gathered students’ actual behaviors and not students’ projected hypotheses of future actions or
recollections of past behaviors. The results from this study further illuminate how the use of self-regulation strategies improves student achievement.

A recent meta-analysis conducted by Dignath and Buttner (2008) outlined the components of effective self-regulated learning interventions on both primary and secondary students. Dignath and Buttner’s study served as an update to a previous meta-analysis conducted by Hattie et al. (1996); therefore studies were limited to studies published between 1992-2006 and met four criteria. The studies included the meta-analysis focused on self-regulated learning and included some type of training. In addition, the studies had to be able to report effect sizes. Finally, the research outcomes had to include academic performance, self-regulation strategy use, or affect and motivation. All studies included were conducted at primary and secondary schools.

Chosen studies were identified by searches on PsychInfo and ERIC online databases and on a German online data base Psyndex. All included studies were published in peer-reviewed journals or as an ERIC document. Authors used 45 key words derived from self-regulated learning and its components to gather a broad review of the literature. The following key words were chosen from the 1992 Hattie and Biggs meta-analysis: study skills, learning strategies, self-regulatory strategies, self-regulatory skills, metacognition, metacognitive skills, metacognitive strategies, self-regulated learning, motivational skills, self-motivation, life long learning, learning to learn, thinking skills, cognitive processes, goal-directed behavior, self-monitoring, goal-setting, self-control, self-determination, self-management, and organizational skills.
The literature search yielded 74 studies that met eligibility criteria. The included studies contained a sample of 8,619 students. From the included studies, 357 effect sizes were reported and grouped according to three outcome categories: academic performance, strategy use, and motivation. Researchers identified 136 effect sizes describing academic performance, 167 effect sizes describing cognitive and metacognitive strategy use, and 54 effect sizes for motivation and affect. For each study, the researchers calculated effect sizes as standardized mean differences between treatment and control conditions for each outcome variable. The treatment effects were then grouped into the three outcome categories: academic achievement, strategy use, and motivation. Researchers then estimated a mean effect size for each outcome category by combining effect sizes across studies through the use of standard meta-analytic procedures (Lipsey & Wilson, 2001). Each effect size was weighted by the inverse of its variance and an additional random variance component to account for heterogeneity among the effect sizes (Hedges & Pigott, 2004). In addition to reporting effect sizes for each outcome variable, overall average effect sizes were computed. The unweighted average effect size was .73, and the weighted overall effect size was .69 and was statistically significant. Effect sizes were reported for outcome categories that included type of school, school subject, strategy use, motivation, and theoretical background.

The results of the meta-analysis found that at the primary-school level, studies utilizing social cognitive theories reported higher effect sizes than studies based on motivation or metacognition. At the secondary-school level, highest effect sizes were reported for studies that emphasized metacognitive theories. Research suggests that
primary-school students have yet to develop metacognitive knowledge and benefit from additional support that instructional models based on social cognitive theories provide (Paris & Winograd, 1999; Veenman et al., 2006). Secondary-school students have already developed metacognitive strategies and, therefore, may not need the support provided with instructional models utilizing social cognitive theories.

Students in this study were early adolescents in their first year of secondary school. Among the students in the study were a group of six at-risk students. Research suggests that at-risk students often lack a fully developed repertoire of metacognitive skills (Getting & Siebert, 2002). For this reason, this study utilized a social cognitive framework for its instructional methodology.

Data from the meta-analysis also revealed that effect sizes were higher at the primary-school level if metacognitive strategies were taught. At the secondary-school level, higher effect sizes were reported in programs that used metacognitive reflection. Primary-school aged children are still developing their metacognitive knowledge (Kuhn, 1999). Zimmerman’s (2002) model of the development of self-regulated learning includes four stages of development. According to Zimmerman’s (2002) model, learners develop self-regulation strategies first by observing and then imitating. They rely on external feedback to make refinements on strategy use. Eventually, learners are able to independently control and regulate their own learning. This study applied the developmental stages of self-regulation in the instructional sequence. Learners observed the teacher using self-regulation strategies. Then students imitated strategy use. Next, they attempted to apply self-regulation strategies as they studied for their history tests. Finally, they applied self-regulation
strategies independently in and adaptive manner that incorporated unique learning contexts of studying for a history test.

For both school levels, the meta-analysis also identified higher effect sizes for interventions with longer durations. The data from this research suggest that as students learn new self-regulation strategies, their strategic behavior becomes more automatic and complex over time. The meta-analysis also showed that for both school levels, effect sizes were higher when studies included metacognitive reflection. Students benefit from receiving feedback from their strategy use and learning how strategy use helps them (Zimmerman, 2002).

This study took place over a 9-week period of time. Self-regulation learning strategies were taught as part of the history curriculum during two units of instruction. The study lasted one-fourth of a school year and included two testing cycles. The duration of the study provided students with several opportunities to learn strategies, use strategies, evaluate strategy effectiveness, and make adjustments to strategy use as needed.

The meta-analysis reported higher effect sizes for both primary and secondary schools when the researcher provided the training rather than the regular classroom teacher. This could be due to the fact that teachers know little about self-regulated learning (Waeytens, Lens, & Vandenberghe, 2002). To address this issue, the researcher taught the self-regulation instructional program to the treatment class.

There were numerous limitations reported in the meta-analysis. The researchers reported the possibility of selection bias because they chose to include only published studies. Another limitation reported was that studies differed in
quality and there was no way of accounting for these differences. Researchers tried to address this by weighting studies with the inverse of the variance, which allowed a higher weight for studies that had large samples. A final limitation reported by the researchers was that computerized interventions were not included in the literature review. They acknowledged that computerized interventions are taking place more frequently; however, they did not want to include them because they are so different from the types of interventions included in their study.

Data from this meta-analysis provided valuable information that guided the theoretical and methodological considerations for this study. Based on the findings of Dignath and Buttner (2008) meta-analysis, this study was taught by the researcher, took place over a long duration of time, included metacognitive reflection, and used a social cognitive theoretical base.

Data from the meta-analysis did not provide information about the effects of self-regulation instruction on general learning strategies with middle-school students. To review empirical studies on self-regulation learning strategies interventions, the researcher conducted a search of the literature using PsychInfo, ERIC, and Wilson Web. Studies in the literature review included studies with college student participants due to the paucity of empirical research utilizing middle-school student participants. The literature reviewed includes three types of self-regulation, learning strategies research. They include experimental studies, correlation studies, and case study research.

Cukras (2006) conducted a study with 19 community-college students enrolled in a study-skills course. This study differs from the Kitsantas (2002) and
Eliam and Aharon (2003) studies in that the Cukras (2006) study attempted to influence students’ self-regulation behaviors through explicit instruction in self-regulation strategies. Through the course of a semester, students learned four self-regulation study strategies that included creating a study plan, organizing material, monitoring progress, and variety of encoding strategies. During the last 3 weeks of the semester, students were assessed on their independent application of the learning strategies. Students were given information from a text to learn and asked to record their studying as they learned the information. Students filled out study diaries indicating which study strategies they used, used self-monitoring note cards that consisted of quizzes on small chunks of information, and questionnaires that asked students to reflect on their study plans. Students then took a test on the information they studied.

The researcher tallied information from study diaries and correlated results from students’ study diaries to test scores. The researcher found statistically significant results with two of the four strategies taught: implementing a study plan and monitoring. Cukras (2006) did not report any statistics in the article, so it is not possible to report how practically important the correlations were between achievement: monitoring and study plans. She failed to discuss information regarding a lack of statistical significance between encoding and organizing material, which were the two other strategies students learned in the study-skills course. Although this study failed to provide a thorough discussion on all the elements of intervention and did not report any statistics, what was reported echoes the results from other self-regulation, correlational studies, that students who utilize more self-regulatory
behaviors achieve higher test scores than students who do not use self-regulatory behaviors. Even when students are enrolled in a study-skills class that explicitly teaches self-regulatory processes, students vary in their use of self-regulatory processes.

Masui and De Corte (2005) conducted a quasi-experimental study at a Flemish university with 47 first-year, business-economics students. The experimental group received training in eight self-regulatory skills, which included four metacognitive and four affective and conative skills. The four metacognitive skills included orienting, planning, self-checking, and reflecting. The four affective-conative skills taught included self-judging, making choices and valuing, coping with emotions, and attributing. These skills were taught using the following principles: (a) embed acquisition of knowledge and skills in the context in which students have to apply them, (b) acknowledge students’ study orientation and students’ need to experience the usefulness of the learning and study tasks, (c) sequence instructional methods and learning tasks and relate them to a time perspective, (d) use a variety of organizational and social interaction patterns, (e) account for students’ prior knowledge and variability among students, (f) stimulate articulation and reflection on thinking and learning processes, and (g) create opportunities for practice of skills and transfer to new content domains.

The intervention was embedded in the natural context of a university economics class. Four times throughout the course of an academic year, students engaged in a variety of reflective exercises where self-regulatory skills were taught. The exercises asked students about the purposes of various lecture elements, how
they should engage with lectures, what their prior knowledge was in economics, and how they approached studying. In addition, students completed a homework assignment describing their prior knowledge and studying habits for their history and English classes. At the end of the fourth intervention session, students reflected on their experiences during the first trimester. Students responded to a variety of questions including (a) which learning strategies were useful, (b) how they could apply strategies used in one course in a different course, and (c) what recommendations they have for themselves and fellow students. At the last intervention session, students reflected on their experiences throughout the year. Students responded to prompts such listing the ideal characteristics of a macroeconomics student and listing seven instructions a student should follow when answering multiple-choice tests.

In addition to the three reflection assignments given at the beginning, middle, and end points of the intervention, students were given reflection homework assignments throughout the year. During these assignments, students were asked to reflect on tests by identifying their expected scores, identifying mistaken and correct items, and explaining attributions for their results. The other intervention sessions included lessons on learning and problem-solving processes required to perform macroeconomics and management accounting problems. The lecturers modeled learning strategies and demonstrated strategies such as making a drawing and checking the plausibility of outcomes. Lecturers highlighted reflections about outcomes by identifying controllable variables and making constructive attribution explanations.
Data from this study indicated that experimental-group students were able to attribute outcomes to controllable factors more often than comparison group students. In addition, students in the experimental group received statistically significant better scores on achievement tests in macroeconomics than comparison groups: $t = 86.62$; ES = .21 for experimental and comparison group one; $t = 45$; ES = .26 for experimental and comparison group two. Two months after the study, students took exams in four courses that were not part of the intervention: statistics, law, psychology, and research methods. Average scores on all tests were higher for experimental-group students than comparison-group students. There were two situations where experimental students’ scores were statistically significantly higher than comparison group scores. Experimental-group scores were statistically significantly higher than comparison group one’s scores on the law course tests: $t = 72.97$; ES = .31. Experimental-group average test scores were statistically significantly higher than comparison groups’ scores on the research methods exam. Results comparing experimental group to comparison group 1 were $t = 61.70$; ES = .35. Results for experimental group versus comparison group two were: $t = 39.00$; ES = .64.

This study demonstrates the effectiveness of a self-regulation intervention integrated within the coursework of a university class. Students learned effective study strategies, were taught to use those strategies in specific contexts, learned to attribute success and failure to the use of those strategies, and were asked to reflect on how those strategies could be used in other coursework. Students who participated in the experimental group showed statistically significant higher test scores compared
with students in comparison groups. The results of this study highlight the benefit of integrating self-regulation instruction as part of the coursework in a typical class. Many self-regulation interventions teach self-regulation skills in a class separate from traditional coursework. Data from the Masui and De Corte (2005) study show that when students learn self-regulation strategies within a course and are taught to transfer self-regulation strategies to other courses, they perform better.

Embedding self-regulation instruction within traditional curriculum appears to be the ideal method for delivering self-regulation instruction. Masui and De Corte (2005) acknowledged that embedding self-regulation instruction within traditional coursework would require professors to alter their role from the expert who delivers declarative and procedural knowledge to becoming a coach who asks students provocative questions, supports students through guidance, and fosters agency over and responsibility to their own learning. As recommended by the research, this study integrated self-regulation learning strategies instruction within the traditional history curriculum.

A study conducted by Stoeger and Ziegler (2008) investigated the effects of a mathematics self-regulation, learning strategies program on a variety of dependent measures including academic achievement, motivation, use of learning strategies, and various self-regulatory behaviors. This study was conducted with fourth-grade classes at a German public school. Participating classes were assigned randomly to either a control group or a training group. Training group classes received 5 weeks of training in self-regulation strategies that included time management, self-evaluation, goal-setting, monitoring, reflection, and preparation of classroom materials at home.
Treatment group teachers received training in a self-regulation study-skills program designed by Zimmerman et al. (1996). Teachers’ training highlighted two of the units in the Zimmerman et al. program, developing time management and planning skills.

The researchers acknowledged that self-regulation beliefs and practices are highly domain specific; therefore, they created instruments designed for the mathematics domain (Stoeger & Ziegler, 2008). Both the treatment and control group students filled out questionnaires prior to and upon completion of training. Participants responded to various topics using a 6-point Likert scale. Students responded to questions on the following topics: time management and self-reflection of learning, self-efficacy, helplessness, willingness to exert effort, motivational orientations, and interest. Students took two mathematic achievement tests. To gather additional data, researchers collected students’ homework journals and counted the numbers of homework problems students were able to answer correctly.

Researchers reported repeated measure analysis of variance (ANOVA) using group membership (treatment vs. control group) as the independent variable. Means, standards deviations, t test, and Δ change were reported for each of the dependent variables for both pretest and posttest measures. For self-regulation data gathered with the treatment group, pretest and posttest data showed statistically significant main effects for time management: $F(1,217) = 2.2$, MSE = 0.69, $\eta^2=0.01$; self-efficacy $F(1,217) = 6.94$, MSE = 0.264, $\eta^2=0.03$; and self-reflection on own learning: $F(1,217) = 6.70$, MSE = 0.55, $\eta^2=0.05$. An effect size of .16 was calculated for posttest scores. All the individual effects sizes are small.
Motivation data (willingness to exert effort, interest, learning goal orientation, approach orientation, avoidance orientation, and helplessness) showed several statistically significant effects. Statistically significant treatment effects were shown for the following measures: willingness to exert effort, interest, learning goal orientation, and helplessness. There were no statistically significant effects reported for performance approach goal orientation. Both treatment and control groups reported higher performance avoidance goal orientation from the first measurement to the second.

Academic performance data showed slight improvement for the treatment group. Scores on the pre- and posttreatment mathematics tests showed a statistically significant interaction between condition and time: $F(1,217) = 6.54$, $MSE = 39.02$, $\eta^2=.06$ and $t$-test results showed that there was a statistically significant difference between the control and treatment group on the posttest $t(219) = -3.00$, and had an $\eta^2=.04$ which was a small effect.

Researchers reported the average number of problems students were able to answer on weekly homework assignments over time to create individual growth curves. Through hierarchical linear modeling, they were able to determine linear and quadratic trends in individual growth curves. The growth rates on daily homework showed an average increase of .87 problems per week. In addition, they measured the change in problems solved over time plus personal variables that consisted of two measures: the motivation scores and individual intelligence. Data from the hierarchical linear modeling indicated that time management, learning goal orientation, and self-efficacy perceptions related statistically significantly to
individual linear growth rates. Students with better time management skills, a learning goal orientation, and higher self-efficacy scores benefitted most from training.

This study examined the effectiveness of a training program on three areas of self-regulated learning: (a) the effect on different (students) variables (e.g. time management, self-regulation, motivation), (b) performance growth, and (c) interindividual differences in solution rates and performance growth. The data suggest that training met the immediate goals of improving time-management skills and self-reflection on learning, self-regulation, and motivation. Students’ self-efficacy reports improved over the training period. Treatment group data demonstrated higher scores in all motivation categories: willingness to exert effort, interest, and learning goal orientation. This study reported small performance gains on classroom tests with a reported ES = .07. The control group reported a statistically significant drop in performance between the two performance measures. The treatment group demonstrated constant achievement scores. In addition, students enrolled in the training course that took an advanced placement mathematics tests all passed the entrance exam, which was a 50% increase.

This study is one of few experimental studies that utilized a social cognitive approach to teaching self-regulation learning strategies with students near the age of those in this study. Although the aforementioned study differs from this study in several ways, the study that was conducted made important contributions to self-regulation research. It shows the effectiveness of teaching school-aged students explicit study strategies using a self-regulatory cycle. It utilized an instructional
model that was taught by teachers using a social cognitive approach and utilized the
cyclical model of self-regulation (Zimmerman, 2000).

Many empirical studies conducted self-regulation learning strategies
to investigate students’ use of various self-regulatory strategies and correlate them to
achievement. Although those studies help identify specific self-regulatory behaviors
that are important to student achievement, they do not show how training students
how to engage in self-regulation strategies influence achievement. The results of
Stoeger and Ziegler (2008) study suggest that teaching students self-regulation
strategies for studying improves achievement, motivation, and use of self-regulation
strategies. The Stoeger and Ziegler study investigated the effects of time
management and planning instruction on mathematics homework completion. This
study investigated the impact of specific learning tactics to improve history-test
performance. Both studies highlight different facets of self-regulation, but they have
the same intended outcomes: to improve motivation, increase academic performance,
and increase the use of self-regulation strategies.

Studies that have been reviewed thus far have included a variety of
instructional designs, methodologies, and samples. The final group of studies
presented in this portion of the literature review includes a case study and
intervention group model of self-regulation instruction with adolescent students.
These studies served as the instructional model for this study.

Brannigan (2007) conducted an investigation on the effects of a counseling
support group on academically at-risk, sixth-grade students. The researcher
investigated students’ use of effective study skills, their help-seeking behaviors, and
students’ awareness of their understanding of material presented in the classroom.
The intervention included seven students and a school counselor who met during the
30-minute lunch period once a week for 16 weeks. During the sessions, students
were taught a learning-to-learn curriculum designed by Frender (2004). Students
took a learning inventory that helped them identify their dominant learning modality.
They learned about their learning modality characteristics and suggested study aids.
Next, students filled out several study skills assessments where they indicated which
study skills they used at the time the intervention began. Students then identified five
areas they would like to improve and then created an individual improvement plan.

Students chose a specific class to focus on for the duration of the
intervention. They identified five strategies they would like to use for their focus
class and planned how they would use those strategies. Students learned about the
importance of help-seeking and how to use flash cards to study for tests. Subsequent
sessions involved opportunities for students to learn additional study strategies,
practice using them, and to discuss progress. Students reported progress and made
refinements to plans as needed. At the end of the program, the researcher gathered
students’ report card grades for their focus class.

The following school year, the researcher gathered students’ report card
grades again. All case-study students showed improved grades that ranged between
+6 and +27 percentage points. The researcher also asked students to reflect on their
experiences as a participant in the intervention on a 10-item questionnaire. Students
responded to the questionnaire with a 3-point Likert-like scale. Students’ average
responses on the 10 items ranged between 2.3 and 3.0.
Although this study failed to meet the rigors of experimental design, it demonstrated the effectiveness of explicit instruction of self-regulation strategies. Students in this case study reflected on the effectiveness of their study strategies, identified areas of growth, created learning plans, executed plans, monitored for improvement, and adjusted plans as needed. They engaged in the self-regulatory process in a small group setting and experienced positive achievement and affective results. This study would have improved if students had the opportunity to report on the questionnaire prior to engaging in the intervention. It also would have been beneficial to view evidence of the qualitative research data mentioned in the study such as study diaries, structured interview responses, or examples of the record keeping process students used to keep track of which study strategies they used. Studies that detail qualitative research elements are described next.

Zimmerman and Cleary (2004) created a one-on-one intervention program called the Self-Regulation Empowerment Program (SREP). This intervention was designed to empower middle-school students by fostering positive self-motivational beliefs, broadening students’ knowledge of learning strategies, and teaching them how to apply learning strategies using self-regulated learning strategies. In SREP design, students worked with a self-regulation coach (SRC) who explicitly taught them the cyclical, feedback loop of self-regulation designed by Zimmerman (2000).

The SREP began with a diagnostic assessment. During the assessment, the SRC helped the student identify which class or classes were problematic and which aspect of the classes posed the most negative impact on their performance (homework completion, test grades, etc.). Next, the SRC used questionnaires and semistructured
interviews to identify the student’s knowledge of study strategies. Finally, the SRC engaged students in a microanalytic procedure that assessed how students implemented and regulated their use of learning strategies (Zimmerman & Martinez-Pons, 1988).

Once SRC coaches were aware of the student’s learning needs, the SRC worked on developing a self-regulated learner. First, the SRC helped the learner identify strategic weaknesses and helped the learner link failure in school to strategic weaknesses. An important outcome of SREP was for students to keep track of performance processes and outcomes, so they felt empowered to exert control over their learning. Students connected process and outcomes through graphing techniques. One technique involved having the student write the study or learning strategies used for an assignment and then plot the grade earned on a graph. Once grades and strategies were recorded, the SRC helped the learner understand the link between strategy used and performance outcomes.

The next step in SREP was to build the student’s learning strategies repertoire through the use of social-cognitive modeling. Social cognitive modeling involves an instructional process where the student first observed the SRC engage in cognitive modeling (thinking aloud while using a strategy) of a strategy, then the SRC provided cognitive coaching (prompts and feedback) as the student made initial attempts at using the strategy, and finally the SRC provided guided practice and helped the student attempt to apply the strategies independently.

The last stage of the SREP is for the student to use new learning strategies within the cyclical, feedback loop of self-regulation. This process involves using a
graphing procedure and includes four steps: (a) set goals and develop a strategic plan, (b) self-record performance outcomes and processes, (c) evaluate goal attainment, and (d) make strategic attributions and adaptive inferences. The SREP has not been tested using experimental research; however, researchers have pilot tested the program with suburban, middle-school students and conducted case-study research with students and self-regulation coaches in one-on-one sessions. Case studies have shown that students were able to improve grades. Cleary and Zimmerman (2004) reported the results from one case study where the student’s science test grades went from a D average to a 90% after eight, 35-minute SREP sessions.

Notwithstanding these positive results, Cleary and Zimmerman (2004) reported several limitations to the SREP design. They acknowledged that self-regulatory processes and having limited learning strategy knowledge are not the only factors that influence students’ academic success. Student participation, positive social relationships, executive functioning ability, and academic skills also influence their ability to earn high marks. Zimmerman and Cleary stated that, “the SREP is a highly specialized program that targets key motivational and strategic processes, but does not impact all essential areas of functioning” (p. 547). They suggested that the SREP should be used with other academic interventions and social programs.

The positive results from case studies provided the impetus to implement SREP with larger groups of students in urban settings. The SREP was redeveloped so that it could be taught to a small group of underperforming ninth-grade honors biology students (Cleary et al., 2008). The Cleary et al. study utilized a mixed-model research design that included case studies embedded in pretest-posttest methodology.
Students referred to the SREP intervention had the following characteristics: (a) ninth-grade level, (b) adequate academic skills (i.e., taking honors classes and proficient or higher statewide standardized test scores), and (c) below-average biology classroom test scores (average of 75 or less on five baseline biology tests). In addition, researchers received feedback from teachers regarding students’ performance in a variety of self-regulatory and academic behaviors such as test performance, homework completion, homework quality, organization, help-seeking, attendance, and class preparation. Thirteen students were recommended to participate in the program. Ten students returned parental consent, and 8 students agreed to participate in the program. Researchers randomly assigned the 8 students to one of two SREP groups. Each group included 4 students and was taught by a different SRC. Of the 8 students in the program, 3 students failed to regularly attend intervention classes. Two of the students who did not agree to participate in the program were interested in a more flexible tutoring program, so they were used as a comparison group. Comparison-group students attended after-school tutoring sessions on an as-needed basis and received no formal instruction in self-regulation strategies.

The motivation belief measures included the Self-Efficacy for Self-Regulated Learning questionnaire (SESRL), the Self-Efficacy for Outcomes questionnaire (SEO), and the Task Interest Inventory (TII). The researchers also gathered qualitative measures using SRC field notes and structured microanalytic assessment procedure that gathered information on students’ self-reflective processes regarding causal attributions and adaptive inferences after receiving test performance. The last type of data gathered for the Cleary et al. (2008) study was a social validity measure that was given to students, teachers, and parents.

The intervention took place before school, twice a week for approximately 11 weeks and included 23 sessions. Each session was approximately 50 minutes long. During the first week of the intervention, students took pretests on the motivation and self-regulation measures and the biology teacher took the RSSRL.

The intervention consisted of five modules that adhered to Zimmerman’s (2000) three-phase cyclical dynamic feedback loop of self-regulation. The initial phase of the SREP is called the foundation module. This module focuses on building students’ awareness of their maladaptive beliefs and causal attribution patterns. Subsequent modules focus on the forethought phase of Zimmerman cyclical model of self-regulation and include task analysis module, a goal-setting module, and a strategic planning module. The learning-strategy module consisted of the SRC teaching students research-based learning strategies that included semantic mapping and mnemonic devices. Learning strategies were taught using principles of explicit instruction, modeling, and guided practice (Schunk, Pintrich, & Meece, 2008). The SRC coach met with the students’ biology teacher so learning strategy lessons could
include course content. The last instructional module focused on the self-reflection phase of the self-regulation model. During the self-reflection module, students learned to graph test results, listed the strategies they used to study for tests, and identified strategic causes for their grades. In addition, the SRC coaches ask students microanalytic questions regarding goal attainment, attributions, and adaptive inferences. The intention of the self-reflection module was to teach students to become metacognitive regarding the causes for their academic struggles, to help them identify the types of errors they made on tests, and to gauge students’ ability to predict the grades earned.

Results from the five students who finished the SREP intervention reported positive results. Prior to the intervention SREP intervention, students earned below-average baseline test scores (M= 70.6) relative to the class average (M= 77.6). During the intervention, participants’ test scores (M= 83.3) were above class average scores (M = 80.6). The average gain for intervention students was approximately 13 points, whereas the average class gain was 3 points. Comparison-group students earned scores below class averages on the baseline test scores and during the intervention.

The researchers used descriptive analysis and reliability change indices (RCI) to analyze pretest-posttest differences in self-regulation and motivation belief measures. In addition, researchers also used information from SRC field notes and microanalytic self-reflection questions to converge quantitative data with qualitative reports. Students’ scores on the SRSI-SR demonstrated statically significant differences in several areas including: managing environment and behavior, RCI =
2.52, seeking and learning information, RCI = 2.25, and maladaptive regulatory behaviors, RCI = 2.24. Motivation belief data also demonstrated statically significant differences between pretest and posttest measures. Data showed statistically significant changes in the self-efficacy for self-regulated learning measures with an RCI = 2.26, and self-efficacy for biology outcomes, RCI = 4.00.

The researchers were able to augment quantitative data with interviews and field notes. Through field notes, the researchers were able to record students’ spontaneous and self-directed use of self-regulatory strategies such as a student who created test questions that he thought may be on an upcoming exam. This student brought the test questions to share with the intervention group. At another time after learning how to create concepts maps, two other students independently made concept maps and shared them with the intervention group seeking feedback. Interviews with the biology teacher and other honors teachers revealed that students were asking for more assistance and wanting to know about test format and the types of questions that would be on the test. Qualitative data demonstrated that students were applying goal-directed behaviors and were demonstrating positive, adaptive behaviors.

Intervention students’ average test scores improved at a greater rate than both the class average and comparison-group scores. Social validity data showed that students, parents, and teachers all reported favorable responses to the SREP in general, found strategy instruction useful, and noted that the SREP improved students’ academic attitudes and behaviors. Students who participated in the SREP demonstrated increased use of self-regulatory strategies and improved confidence for
learning science and regulating their behaviors. Researchers concluded that the convergence of qualitative and quantitative data suggest that SREP is a “promising intervention for improving the academic and regulatory function of high school students” (Cleary et al., 2008, p. 97).

Researchers acknowledged the small sample size and selective nature of the sample limited their ability to generalize findings. They suggested that future research should include students with a variety of abilities that could include individuals with learning disabilities, academic skill weaknesses, and substantial motivation problems. Researchers also identified the use of student self-reports as measure of self-regulation as a limitation because research has found that students often assess their behaviors inaccurately (Winne & Jamieson-Noel, 2002). They mitigated the use of self-report measures by confirming data through the use of SRC field notes and microanalytic assessments. Researchers suggested that future studies should include microanalytic questions so they include both forethought and performance control processes as well.

To improve the experimental design of the original SREP research, the Clearly et al. (2008) SREP study utilized mixed-method research methodologies. They utilized pretest and posttest measurements on biology achievement, self-regulation inventories, and motivational questionnaires. Researchers used field notes and microanalytic questioning to account for students’ inability to accurately self-assess behaviors. Researchers were unable to retain all participants for the duration of the intervention. Three out of the eight students enrolled had difficulty attending
class. When researchers provide intervention programs, it is beneficial to create conditions that optimize students’ attendance.

Results from the initial research using SREP suggest it is an effective intervention that improves students’ self-regulation skills and motivation for learning. This study implemented several features of the SREP research model designed by Cleary et al. (2008) and incorporated suggestions made by the researchers. The student sample in this study included students with a variety of learning difficulties that include students with ADHD, learning disabilities, and low motivation. To address attendance concerns, the intervention took place within the school day, during the students’ history class. The study also used a mixed-method design, so students’ responses to quantitative instruments were confirmed with observations, think-aloud protocols, study diaries, and semistructured interviews.

This portion of the literature review described several theoretical and instructional models for self-regulation. In addition, it summarized numerous methodological techniques used to measure self-regulation. Finally, it reviewed several empirical studies that guided the development of the intervention in this study. The literature supports the notion that having well-developed self-regulatory skills improves students’ achievement (Cleary et al., 2008; Kitsantas, 2002; Masau & De Corte, 2005; Stoeger & Ziegler, 2005). Knowing how to self-regulate is not enough to ensure students’ success. They also need to know which learning strategies to use in various learning situations (Weinstein et al., 2000). Learning-strategies research is presented in the next section of the literature review.
Learning-Strategies Theory

This portion of the literature review includes a theoretical and empirical review of learning strategies. In addition to reviewing learning strategies in general, it also details empirical studies on two learning tactics: mnemonics and concept maps. This study taught students to use mnemonics and concept maps in the forethought and performance phases of the self-regulation cycle.

One aptitude that differentiates successful students from those who struggle academically is having a broad repertoire of effective learning strategies (Gettinger & Seibert, 2002). From their broad repertoires, successful students choose appropriate learning strategies given the unique conditions of each learning situation. In addition, successful students know how to adapt strategies to accommodate changes that take place from class-to-class and teacher-to-teacher (Broekkamp & Van Hout-Wolters, 2007). One of the most important qualities of successful students is that they not only know about effective learning strategies but they also possess the motivation to use those strategies when tempted to do more interesting things (Weinstein et al., 2000; Zimmerman, 1998). When students do not possess effective learning strategies, they suffer lower academic self-efficacy and lower academic achievement than students who have well-developed learning strategies repertoires (Caprara et al., 2008; DiPerna, 2006; Gettinger & Seibert, 2002; Kitsantas, 2002; Zimmerman, 1998).

In order for students to be able to study effectively, they need to draw from an arsenal of learning strategies. Learning strategies are defined as the behaviors, thoughts, beliefs, or emotions that learners use to acquire, understand, and transfer new knowledge and skills (Weinstein et al., 2000). One element of a learner’s
strategic approach to learning includes the use of learning tactics (Lenz, Ellis, & Scanlon, 1996). Learning tactics are defined as a sequence of steps or procedures used for learning (Gettinger & Seibert, 2002). Learning tactics are often taught explicitly so that learners can repeat the procedures until they can perform the tactics independently. Students must be able to apply learning tactics in a strategic manner (Kitsantas et al., 2004). Challenges arise when learners routinely use learning tactics in an nonstrategic manner and use learning strategies in a rote, automatic manner across a variety of learning contexts without planning, thinking, or monitoring their learning (Gettinger & Seibert, 2002).

Knowledge of effective learning strategies can elude even the most capable learners (Gettinger & Seibert, 2002). Some students learn how to learn on their own; others, however, never develop an effective arsenal of learning strategies because they are not taught how to learn on their own (Kiewra, 2002). Institutes of higher learning have responded to their students’ need to develop learning strategies by offering study-skills courses (Weinstein et al., 2000). These courses explicitly teach students a variety of learning strategies, how to apply them in variety of contexts, how to adapt strategies for unique learning situations, and how to maintain motivation to use learning strategies (Cukras, 2006; Kiewra; Weinstein et al.).

Specific learning tasks require the use of specific types of learning strategies. If students are to be successful learners, they must be able to identify which learning strategies best suit specific learning tasks (Gettinger & Seibert, 2002; Kitsantas et al., 2004). One way to consider learning strategies is through the use of the learning-strategies framework. Weinstein and Mayer (1986) developed a framework for
learning strategies that divides learning strategies into five categories: rehearsal, elaboration, organization, comprehension monitoring, and affective strategies. The first three categories assist learners with knowledge acquisition and organization. The two final categories focus on metacognition and affect. Learners use different types of learning strategies depending on the complexity of a learning task.

Basic learning tasks require rote learning or verbatim memorization. Rehearsal strategies used for basic learning tasks include recitation, rereading, and repetition (Gettinger & Seibert, 2002). Some learning tasks are complex and require high levels of conceptual and content learning. Complex learning tasks require elaboration strategies that may include underlining, taking notes, and copying material.

Elaboration strategies help learners make connections between the learning material and the learner’s prior knowledge (Weinstein et al., 2000). For basic learning tasks, elaboration strategies include creating mental images and using mnemonic techniques. Elaboration techniques used for complex tasks include paraphrasing, summarizing, creating analogies, questioning, and trying to teach information to someone else (Weinstein et al.).

Organization strategies help learners create internal connections among bits of information by developing frameworks or taxonomies (Weinstein & Mayer, 1986). Learners organize information for basic learning tasks by grouping information into categories based on shared characteristics or attributes. Organization strategies used for complex learning tasks include strategies such as outlining, diagramming, and concept mapping (Gettinger & Seibert, 2002; Weinstein & Meyer).
The last two strategies in Weinstein and Meyer’s (1986) framework, comprehension monitoring and affective strategies, are considered support strategies that enhance the learning process. Comprehension monitoring is characterized as a metacognitive technique that takes place when the learner makes learning goals, assesses progress toward goals, and modifies strategy use as needed (Weinstein et al., 2000). When learners monitor comprehension, they self-question, identify mistakes, and problem solve. Affective strategies are techniques that help learners create suitable learning environments. Specific areas requiring affective techniques include maintaining concentration, managing performance anxiety, establishing and maintaining motivation, and time management (Weinstein & Meyer).

This study included a self-regulation instructional program that taught students to apply the self-regulation in a cyclical manner. The first phase of self-regulation is forethought. Two elements of the forethought phase are connected to learning-strategies theory: task analysis and strategic planning. Participants in the study learned how to analyze learning tasks and identify appropriate learning strategies that would help them complete learning tasks. Understanding the learning-strategies framework (Weinstein & Meyer, 1986) is essential to students’ ability to develop effective strategic plans. The next section of the review describes learning-strategies research and provides information about essential features of learning-strategies interventions.

**Learning-Strategies Research**

In 1996, Hattie, Biggs, and Purdie published a meta-analysis that investigated the elements of effective study-skills programs. The criteria for inclusion in the meta-
analysis included the following: (a) it was concerned with learning or study skills, (b) it was possible to calculate an effect size, (c) there was some type of intervention, and (d) the outcome was either performance, study skills, or affect. A search was conducted using the following protocol:

various computer-based information sources using the keywords study skills, learning strategies, learning processes, cognitive style, study habits, cognitive strategies, cognitive processes, learning style, metacognitive skills, and thinking skills. The keywords were searched for in Psychological Abstracts (1983-1992) and the database of the Educational Resources Information Center (ERIC; 1983-1992). (p. 106)

Their search yielded 51 studies. The researchers were able to identify 270 effect sizes.

Studies were categorized and coded based on the thrust or major intention of the intervention as listed:

There were six levels of thrust: (a) attribution, to change attributions students made for success and/or failure, (b) motivation, to change students’ motivation for learning, (c) study skills, to diminish the use of ineffective study behaviors and train students to use on or a packet of targeted skills, (d) structural aids, structures which help the learner interact with content to define structural and high-level meaning, (e) Feuerstein programs, general ways in which students adopt task appropriate strategies such as using analogies and relating ideas, with a meaning orientation, and (f) memory, interventions focused on improving recall of specific facts. (p. 106)

Interventions also were classified according to the desired outcome. Each intervention was labeled as either reproductive or transformational. Reproductive programs utilized study skills aimed at reproduction of content. Transformational programs helped students learn content at a high cognitive level and transform it for various reasons and contexts. Interventions also were classified according to the structure of the observed learning outcome (SOLO). Interventions were classified by one of the following SOLO categories: unistructural, interventions based on one
relevant feature or dimension (e.g., training in underlining), (b) multistructural, interventions based on a range of independent strategies or procedures without integration with content or context, (c) relational, interventions that integrated self-assessments with task demands and context and are self-regulated, or (d) extended abstract, integrating skills learned in a relational intervention in a new domain.

Studies also were characterized as near or far that was based on the degree of transfer between the training task and the outcome measure. In addition, the outcome measure used to assess the effectiveness of the intervention was classified in one of the following categories: (a) academic performance measures, subject-based tests, grade point averages, tests of general ability, (b) study skill, change in one or a range of study behaviors, and (c) affect, self-efficacy, self-concept, or attitude.

The researchers calculated the effect sizes of the studies by identifying the difference between the means of the intervention group and the control group or the difference between pretest and posttest group means divided by the pooled standard deviation. Hedges’s g was used for all subsequent analyses. The researchers conducted homogeneity statistic $Q_w$ with $k-1$ degrees of freedom, where $k$ is the number of effect sizes. Researchers found that almost all the homogeneity statistics were statistically significant. They then used categorical models to determine the relation between the study characteristics and the effect sizes. The models provided between classes effect sizes and a test of homogeneity of effect sizes within each class. The between-classes effect was estimated by $Q_B$, which has a chi-square distribution with $p-1$ degrees of freedom where $p$ is the number of classes.
This meta-analysis investigated many variables; only variables relevant to this study are reported. Results of the overall mean weighted effect size for the study-skills programs was .45 with a standard error of .03. The results combined three effects: performance, study skills, and affect. The individual effect sizes are .57 for performance, .16 for study skills, and .48 for affect. Performance interventions yielded an average effect size of .57, which is considered a medium effect based on Cohen’s (1977) criteria. Researchers found that unistructural programs had the highest effect on performance producing effect sizes of .84, which is a large effect. Unistructural interventions generally involved results from Hattie et al. (1996) meta-analysis suggest that unistructural programs are effective for improving memory outcomes where students are not expected to use more cognitively demanding procedures such as applying strategies in different learning contexts with unfamiliar information.

Multistructural interventions demonstrated some success with near transfer \((g = .45)\) and positive attitudes to study \((g = .53)\) but had little effect on the use of study skills \((g = .03)\). Multistructural programs that were used for high cognitive level or for far transfer were not effective except for one study. Multistructual programs were most effective with younger students. These means are based on the effect sizes only.

Results from the meta-analysis provided some guidance for future intervention studies. First, best results were reported for programs that integrated metacognitive elements with strategy training and incorporated motivational and contextual support. Second, they found that typical study-skills programs that exist
without metacognitive and contextualized elements were not as successful as programs with those elements but did offer some assistance to students, especially with younger students.

On a practical level, the researchers offered the following suggestions. If the intention of an intervention is to teach accurate retention of detail, then mnemonics including imagery or linking items to be learned or associated with key words is a very effective strategy intervention. If an intervention is focused on applying content in a new context, then interventions need to include more complex strategies. They found that near transfer was easier to obtain than far transfer. Thus interventions were more successful when a skill was taught in the same content as it was to be applied. This result suggests that study skills should be taught with course content rather than in a counseling or remedial center. Results of the meta-analysis found that teaching study skills had a limited effect on the actual use of study skills but improved students’ attitudes about their work.

Researchers advised strategy instruction should be taught conditionally. The learner needs to understand how a strategy works, under what circumstances it should be used, and how to implement the strategy. If a learner understands the conditional aspects of specific strategies, then the learner can apply that strategy in contexts different from those in where it was first learned.

Data gathered from the meta-analysis suggest that assessing study skills did not attain positive results. They found that study-skills training improved students’ affect more than improving study skills. The data reported the strongest improvement in affect with attribution training. Researchers suggested that when the purpose of an
Intervention is to change attribution patterns for success and failure, teachers should highlight connection between strategy use and success or failure.

Overall, the results from the meta-analysis support situated cognition, which states that learning is tied to authentic activity (Novak, 2000). If an intervention seeks outcomes other than simple recall, the following recommendations were made by the researchers: (a) strategies should be taught in context, (b) strategies should use tasks within the same domain as the target content, and (c) strategies should promote a high degree of learner activity and metacognitive awareness (Hattie et al., 1996). Overall, strategy instruction should teach students what the strategies are, when they should be used, how to use them, and why they should be used.

Given the results of the Hattie et al. (1996) meta-analysis, the researcher investigated recent intervention studies that utilized specific learning strategies in the area of science with the specific purpose of improving students’ science content knowledge. This study was modeled after the Cleary et al. (2008) study. For that investigation, students were taught how to study for science tests using two learning tactics: mnemonics and concept maps. Cleary et al. cited that previous intervention research reported that interventions using mnemonics and concept maps yielded positive results on classroom assessment scores (Nesbit & Adescope, 2006). Information presented in the Hattie et al. meta-analysis confirmed that effectiveness of these learning tactics: therefore, additional research was conducted in these areas.

**Mnemonics Theory and Research**

Mnemonics are learning tactics that use words, sentences, picture devices, or techniques to improve memory (Lombardi & Butera, 1998). There are three types of
mnemonics often reported in the literature: letter, keyword, and pegword (Mastropieri & Scruggs, 1998). The letter method is a mnemonic strategy where an acronym is created to associate a letter with factual information such as the mnemonic “HOMES” to designate the names of the Great Lakes or “PEDMAS” to aid in the recall of the order of operations for solving mathematics equations (Atkinson, 1975). The keyword method connects an unknown word to a known word through the use of two links, an acoustic link (the words sound alike) and an imagery link (mental image of an interaction of the two words). The Pegword method converts numbers into rhyming words (e.g., 1 is a bun, 2 is a shoe, 3 is a tree, . . . , 10 in a hen) for the purpose of helping learning remember ordered lists of information. Numerous mnemonic intervention studies have been conducted with a variety of learners in a variety of subject areas and have reported positive effects on subjects’ recall of basic information (Carney & Levin, 2008; Wolgemuth, Cobb, & Alwell, 2008).

Wolgemuth et al. (2008) conducted a meta-analysis on mnemonic interventions with youth with learning disabilities. They included studies that met the following criteria: (a) conducted within the time frame 1984-2004, (b) was conducted in secondary-school environments, (c) reported data on a sample of one or more types of youth with learning disabilities, and (d) reported at least one outcome aligned with either academics, transition, or dropout prevention. The search yielded 20 studies that met all required criteria and met minimally acceptable standards of internal and external validity as determined by consensus coding. These 20 studies involved 169 participants.
Hedges’s g was used to compute the effect sizes and the weighted means for the 20 studies, which was tested for statistical significance. The researchers reported a $Q$ statistic to evaluate the homogeneity of effects-sizes. The mean effect size was 1.38 and was statistically significant ($z = 17.4$). The $Q$ statistics also was statistically significant ($Q = 78.8; df = 19$). Researchers also conducted sensitivity analysis to search for outliers and found none. Having found no outliers, they conducted a moderator analysis of study feature to identify sources of effect-size heterogeneity. Researchers conducted $t$ tests and analyses of variance comparing the mean effect-sizes for subgroups of studies with varying features. Studies that conducted keyword mnemonic interventions were compared with keyword-pegword interventions and two other strategies (self-generated and reconstructive elaborations). They found that keyword-pegword average effect sizes ($g = 1.93, SD = .74$) were slightly higher than the averages for the keyword ($g = 1.77, SD = .81$) and higher than other strategies ($g = 1.63, SD = .85$). The differences among the type of interventions were not statistically significant ($F(2,17) = 0.18$).

The only other comparison that showed statistically significant differences was a comparison of study design and intervention intensity. Multiple-group studies had statistically significantly higher average effect sizes ($g = 2.04, SD = .70$) than within-subject studies ($g = 1.15, SD = .55; t(18) = 2.78$). They found that single-session studies ($g = 2.12, SD = .69$) had statistically significantly higher average effect sizes that multiple-session studies ($g = 1.12, SD = 0.41; t(18) = 3.50$).

Researchers noted several limitations including publication where studies that reported unsuccessful results are often not published. Researchers concluded that
mnemonic interventions improve academic outcomes for secondary-school students with disabilities. They found that students trained in mnemonics performed better on immediate recall tasks in several academic areas including English, social studies, mathematics, and science. They noted that they only reported data that assessed immediate recall to maintain consistency with the conditions of outcome measurements across studies. They found that studies that reported delayed recall also reported positive effects. Results from this study demonstrate the effectiveness of mnemonics as a learning tactic and confirmed the decision to use mnemonics as one of the learning tactics taught in this study.

This study was modeled after an intervention conducted by Cleary et al. (2008). In that investigation, the researchers taught students to use concepts maps and mnemonics to improve science test scores. A review of concept-map literature was conducted to describe the components of concepts maps and to summarize concept-map research. Information gathered from the literature review is presented in the next section.

**Concept Maps Research and Theory**

This section describes what concept maps are, how they are formed, and how they help learners and reviews a meta-analysis of concept-map research. The main purpose for using concept maps is to foster meaningful learning. Meaningful learning takes place when the learner consciously integrates new knowledge into prior knowledge (Novak, 2002). Concept maps support meaningful learning in several ways. First, concept maps help learners activate prior knowledge and integrate new information into their prior knowledge (Hawk, 1986). Concept maps act as templates
that help organize and provide structure to knowledge (Novak). Finally, concept maps support the integration of information in both verbal and visuospatial memory. Paivio’s (1986) dual-coding theory explains that verbal knowledge and mental images exist in separate by interlinked memory codes. When links between verbal and visuospatial codes are linked, learners experience additional retrieval paths that assist them when recalling information (Nesbit & Adesope, 2006).

Concept maps are graphical tools that represent knowledge and are comprised of concepts and the relationships between them (Novak & Gowin, 1984). A concept is defined as “perceived regularity in events or objects, or a record of events or objects, designated by a label” (Novak, 2002, p. 550). Concepts are enclosed in circles or boxes and lines that connect concepts reveal relationships between concepts. Words are placed on the linking lines to specify the relationship between the concepts. Most labels for concepts are single words; however, there are times when symbols are used instead of words. A concept-link-concept triple is called a proposition. Propositions are meaningful statements about an object or event.

Concepts in concept maps are arranged hierarchically such that the most inclusive and general concepts are at the top of the map. The more specific and less general concepts are arranged lower on the map. Maps are context specific, so it is best to arrange maps in response to a particular question. Concept maps also contain cross-links. Cross-links show relationships between or among concepts across various areas of the map. Finally, concept maps include specific example of events or objects.
In 2006, Nesbit and Adesope published a meta-analysis on the impact of concept maps on student learning. Studies that were included in the meta-analysis met the following criteria:

(a) contrasted the effect of map study, construction, or manipulation with the effects of other learning activities; (b) measured cognitive or motivational outcomes such as recall, problem-solving transfer, learning skills, interest, and attitude; (c) reported sufficient data to allow an estimate of standardized mean difference effect size; (d) assigned participants to groups prior to differing treatments; and (e) randomly assigned participants to groups, or used a pretest or other prior variable correlated with outcome to control for preexisting differences among groups. (p. 7)

Researchers did not include studies that reported a pretest effect size outside the range -0.40 < d < 0.40. Researchers searched six databases using the query concept map or knowledge map or node-link map. The databases used were ERIC, Web of Science, PsychINFO, PsychARTICLES, Academic Search Elite, and Dissertation Abstracts. In addition, researchers reviewed reference sections of comprehensive review papers and abstracts of presentation at annual meetings of the American Educational Research Association and the National Association for Research in Science Teaching that were held after 1990. The search yielded 122 studies, which were evaluated against the inclusion criteria. Fifty-five studies were with a total of 5,818 participant met the criteria and were coded.

The researchers calculated average effects sizes and weighted mean effect sizes (Hedges $g$). In addition, they performed a homogeneity test using chi-square $Q$ statistic with $k-1$ degrees of freedom. For the studies that investigated the effects of constructing and studying concept maps, the researchers found 25 studies with 27 statistically independent effect sizes. For the purposes of this study, only results that were relevant this study are reported. Homogeneity was rejected for all effect sizes.
When maps were constructed, they found the following statistically significant results $(Q = 342.212, df=66)$. Researchers decided to report on studies that were conducted in the United States and Canada because of challenges associated with studies conducted in Taiwan and Africa. Studies conducted in the United States and Canada that had students construct concept maps reported the following statistically significant result $(Q = 123.769, df = 17)$. Studies conducted in the United States and Canada that had students study concept map reported the following statistically significant result $(Q = 55.557, df = 36)$. Students performed better on assessments when they constructed maps rather than just studied maps.

Data were collected on the effects of concept-map instruction on students based on students’ education level. The following statistically significant result was reported for intermediate grades $(Q=45.433, df = 3)$. Results for secondary-school students were not statistically significant. Postsecondary results were statistically significant $(Q = 35.601, df= 6)$. In addition, the data were analyzed for the effects of concept-map instruction in a variety of subject areas. Effect sizes for the concept-map instruction in general science classes were statistically significant $(Q = 73.064, df = 8)$. Data also were analyzed to determine the effects of concept maps based on students’ ability levels. The data showed that the following results for students of low verbal ability ($g = .44$), which is statistically significantly different from zero. Data showed negative effects sizes for students with high verbal ability $g = -3.33$.

The results of the meta-analysis suggest that studying concept maps was more effective technique for knowledge retention and transfer than reading text passages, attending lectures, and participating in class discussions. In addition, the data suggest
that studying maps assists in recall of central ideas and detail ideas. Data from several studies suggest that preconstructed maps are especially helpful for students with lower verbal proficiency and provide little to no advantage for students with high verbal ability. Results from the meta-analysis showed that concept maps supported learners ranging from fourth grade to college in a variety of subject areas. Researchers did not provide details explaining limitations of their study.

Results from the Nesbit and Adesope (2006) meta-analysis confirm the effectiveness of using concepts maps as a learning tactic for this study. Results from the meta-analysis suggest that concept maps are effective tools that help learners with low verbal ability recall information. In addition, data also reported positive effect sizes with intermediate-grade students. Finally, data showed positive effect sizes when concept maps were used to learn history content. This study included participants who had low verbal ability, were in intermediate grades, and focused on learning history content. For these reasons, concept maps were used in this study as part of the self-regulated learning strategies intervention.

This portion of the literature review outlined several features of learning strategies research. It described Weinstein and Meyer’s (1986) learning strategy taxonomy that includes the following levels: rehearsal, elaboration, organization, comprehension monitoring, and affective strategies. Empirical research regarding effective elements of learning strategy interventions also was reviewed. Finally, two learning tactics, mnemonics and concepts maps were examined to determine their utility for this study.
Literature Review Summary

The literature presented in this review supports the appropriateness of providing self-regulation learning strategies instruction for sixth-grade students in general and at-risk students specifically. The literature showed that most students do well with the academic rigors of middle school; however, there is a population of students who fail to adjust to the increased academic demands of middle school (Deemer et al., 2003). Underdeveloped self-regulation skills may contribute to the challenges these students face (Dembo & Eaton, 2000; Gettinger & Siebert, 2002). There is a strong correlation between low academic achievement and underdeveloped self-regulation skills (Cukras, 2006; Eliam et al., 2009; Kitsantas, 2002; Kitsantas & Zimmerman, 2009).

Learning self-regulation strategies helps students meet the increased academic demands of middle school (Dembo & Eaton, 2000; Zimmerman, 1998, 2002). The literature review presented studies that confirmed that when students learn self-regulation strategies through explicit instruction, they improve their grades, increase their self-efficacy, and improve their motivation for learning (Cleary et al., 2008; Stoeger & Ziegler, 2008).

When students engage in self-regulation, they need to identify appropriate learning strategies and tactics to implement while studying (Cleary et al., 2008; Winne & Hadwin, 1996; Zimmerman, 2000). If students do not know which learning tactics to use, engaging in self-regulation will not improve learning (Gettinger & Seibert, 2000; Martinez-Pons, 2002). The final section of the literature review
examined learning strategies literature. Two meta-analyses reviewed the literature on
two learning tactics: mnemonics and concept maps. Interventions using these
learning tactics have reported that students’ performance on academic assessment
improved considerably after explicit instruction (Nesbit & Adesope, 2006;
Woglemuth et al., 2008). Concept-map and mnemonics instruction was included in
the self-regulation learning-strategies instructional program used in this study. The
positive results from previous concept-map and mnemonics research further support
the appropriateness of conducting this study.

This study examined the effects of teaching self-regulation strategies to sixth-
grade students, some of whom were at-risk students who have learning disabilities,
have Attention Deficit and Hyperactivity Disorder, and experience low academic
motivation. Because numerous researchers have reported successful outcomes with
self-regulation interventions, investigating the effects of a self-regulation learning
strategies intervention with academically at-risk sixth-grade students was
theoretically sound and appropriate (Dignath & Buttnerr, 2008). By conducting this
study within the traditional history curriculum in an intact class that included an at-
risk population of students, this study filled a gap in the research literature (Cleary et
al., 2008; Dignath & Buttnerr; 2008; Hattie et al., 1996; Weinstein et al., 2000). The
next chapter details the research design of this study including its instructional design,
data- gathering methodologies, statistical tests used to analyze quantitative data, and
qualitative data analysis techniques.
CHAPTER III

METHODOLOGY

The purpose of this study was to investigate the effects of a self-regulation learning-strategies instructional program on sixth-grade students’ development of self-regulation strategies, use of study tools, self-efficacy beliefs, and history test grades. It was expected that participants would refine their use of self-regulation strategies, improve self-efficacy for self-regulated learning, increase the number of study tools they used when studying, and improve scores on history tests. This chapter contains the following sections: the methodology, the sample, the instrumentation, the design, the data-collection procedures, and data-analysis procedures.

Research Design

This study was a concurrent mixed-method study with the purpose of triangulating quantitative data with qualitative data (Creswell & Clark, 2007). Quantitative and qualitative data were gathered separately and concurrently to assess the effectiveness of the self-regulation learning-strategies intervention program on participants’ development of self-regulation strategies, use of study tools, their self-efficacy beliefs, and history class test scores. This study used a pretest-posttest, quasi-experimental design with an intervention group and a comparison group. Quantitative data were used to compare participants’ performance in a self-regulation learning-strategies instructional program with a comparison group’s performance on an affective self-regulation instrument, the School Motivation and Learning Strategies Inventory (Stroud & Reynolds, 2006), and the Self-Efficacy for Self-Regulated
Learning Scale (Bandura, 2006). In addition, participants’ history test scores were recorded prior to and throughout the self-regulation learning-strategies instructional program.

The qualitative data gathered online measures of self-regulatory processes as students studied for history tests. Online research methods gather data while a research participant is engaged in specific self-regulatory learning processes. Using mixed methods integrated the strengths of both qualitative and quantitative methodologies, which addressed the research problem more thoroughly (Creswell & Clark, 2007). In this study, qualitative data were used to confirm and enhance quantitative findings.

Researchers acknowledged that bias is inherent when gathering data using a single method (Creswell, 2002). Current self-regulation research methodologies call for the calibration between students’ self-reports of using self-regulatory process and the actual use of these processes (Zimmerman, 2008). Researchers in the area of self-regulation utilize a variety of online event measures that capture students’ use of self-regulatory processes while engaged in learning tasks. These methods include think-aloud protocols (Azevedo & Cromley, 2004; Ericsson, 2006), computer traces (Winne et al., 2006), study diaries (Schmitz & Wiese, 2006; Stoeger & Ziegler, 2008), direct observation (Perry, Vandekamp, Mercer, & Nordby, 2002), and microanalyses (Kitsantas & Zimmerman, 2002). In this study, qualitative data included observation transcripts, interviews transcripts, think-aloud protocol transcripts, and study diaries. This study’s methodological protocol is summarized in Table 1.
Self-report instruments for self-regulation have several validity problems: (a) student recall may be inaccurate, (b) underreporting strategy use, (c) overreporting strategy use, (d) social desirability responses, and (e) response bias (Boekaerts & Corno, 2005). Because self-report instruments often fail to capture the true representation of self-regulatory processes, researchers have acknowledged that it is necessary to combine procedures to measure self-regulated learning. For this reason, participants in this study engaged in multiple measures to assess the effects of the self-regulation learning-strategies instructional program.

They responded to two self-report measures: the School Motivation and Learning Strategies Inventory (Stroud & Reynolds, 2006) and the Self-Efficacy for Self-Regulated Learning Scale (Bandura, 2006).

Table 1
Methodological Protocol

<table>
<thead>
<tr>
<th>Qualitative Data Pretreatment</th>
<th>Quantitative Data Pre-intervention and Posttreatment</th>
<th>Qualitative Data Posttreatment</th>
</tr>
</thead>
</table>
| Procedures:  
- One-on-one structured interviews  
- Observations  
- Study diaries  
- Thematic analysis | Procedures:  
- Two groups: intervention & comparison group  
- Outcome measures: change in test scores  
- Learning strategies inventory (SMALSI) completed twice  
- Self-Efficacy for Self-Regulated Learning Scale (SESRLS) | Procedures:  
- One-on-one  
- structured interviews  
- Observations  
- Study diaries  
- Thematic analysis |
| Products:  
- Transcripts  
- Video recordings | Products:  
- Change scores on SMALSI, SESRLS, and history test scores | Products:  
- Transcripts  
- Video recordings  
- Themes and quotes |

Self-report data were collected at two intervals: prior to the intervention and at the end of the intervention. The intervention independent variable had two levels: treatment- and comparison-group, and history-achievement independent variable has
three levels. To determine students’ history-achievement levels, three history test scores were averaged. Students’ whose average test scores were 85% or higher were placed in the high-achievement group. Students who scored between 70% to 84% were put in the medium-achievement group. Students who scored less than 70% were in the low-achievement group. Dependent variables consisted of students’ history-test scores and scores reported on two self-report instruments: the School Motivation and Learning Strategies Inventory (SMALSI) and the Self-Efficacy for Self-Regulated Learning Scale (SESRLS).

The SMALSI measured 10 constructs: study strategies, note-taking and listening skills, reading and writing strategies, writing-research skills, test-taking strategies, organizational techniques, time management, academic motivation, test anxiety, and attention and concentration. The intervention program used in this study did not address all 10 constructs in the SMALSI; therefore, this study utilized an adapted form of the SMALSI that included the following constructs: study strategies, test-taking strategies, organizational techniques, and time management. The adapted form of the SMALSI included 68 items. The SESRLS included 10 items that participants used to rate their confidence in their ability to engage in self-regulatory behaviors.

History test data were gathered three times during the course of the study. A pretreatment history test score was calculated by averaging the scores of three history tests that students took prior to the study. In addition, history test data were collected after each test students took during the course of the study.

Three types of qualitative data were collected for this study: think-aloud
observation transcripts, interview transcripts, and study diaries. Think-aloud observation and interview data were collected from focus-group students. The focus group consisted of 2 medium-achieving students and 3 low-achieving participants. Focus-group students had some of the following characteristics: (a) poor organization skills, (b) poor study skills, (c) ineffective test preparation knowledge, and (d) average test and quiz scores below 85%. Focus-group students were observed while studying for a history test. Immediately after the observation, participants engaged in a structured interview. By conducting a mixed-method investigation and triangulating data, the researcher was assured that conclusions drawn from the data were reliable and valid (Boekaerts & Corno, 2005).

The qualitative data were used to confirm the data gathered on the SMALSI, SESRLS, and on history test scores. In addition, qualitative data were used to enhance understanding of self-regulatory processes not specifically addressed in the quantitative measures.

**Location and Sample**

This study took place at a public, suburban middle school in the San Francisco East Bay during an 8-week period of instruction that occurred in the researcher’s history class. The school is a comprehensive middle school with sixth-, seventh-, and eighth-grade students and has a population of 1,150 students. Families report a variety of home languages; however, only two percent of students receive instruction in English language development. Ethnicity data show the make up of the school to be as follows: Asian Indian American 8.5%, American Indian 0.5%, Hispanic American 6.4%, Asian American 24.0%, African American 2.0%, European
American 58.0%, declined to state 1.0%. At the site of this study, 2% of students participate in the Federal Free and Reduced Lunch Program. Participants in this study were sixth-grade students who were between 11 and 13 years of age.

The treatment group was taught by the researcher and consisted of 26 students. See Table 2 for a display of the treatment-group demographics. Four of the treatment-group students were enrolled in the school’s Resource Specialist Program (RSP) for language arts instruction and attended general education classes for the rest of the day. Two of the RSP students had mild forms of Autism. All RSP students had difficulty with auditory processing. Students who attended an after-school mandatory study hall were enrolled because their Grade Point Averages (GPA) were below 1.5 and they inconsistently completed their homework.

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Treatment Group</th>
<th>Focus Group</th>
<th>Comparison Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Race and Ethnicity</td>
<td>European American</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Asian America</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Hispanic American</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>African American</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Learning Disability</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ADHD</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Enrolled in Mandatory Study Hall</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Achievement Levels</td>
<td>High</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>26</td>
<td>5</td>
</tr>
</tbody>
</table>

Observation and interview data were gathered on five focus-group students from the treatment group. Upon receiving informed consent from parents, the
researcher investigated focus group students’ learning histories so qualitative data could be framed within the unique backgrounds of these students.

Student 1 was an 11 year-old European American male student who was diagnosed with Asperger’s Syndrome. He attended speech classes to develop his pragmatic language skills. This student’s standardized language arts test scores fell within the basic range. On the Woodcock Johnson III achievement test, this student’s reading and written language scores fell within the average range. On the Critical Evaluation of Language Fundamentals assessment this student demonstrated significantly below-average scores on recalling sentences subtest. This student attended language arts classes with a Resource Specialist teacher and attended general education courses the rest of school day. His pretreatment history test average was 72%.

Student 2 was an 11 year-old Hispanic American female and a general education student. She scored in the basic range of the state standardized test in language arts. She did not attend any academic intervention classes, but did attend a social-skills support group for sixth-grade girls. This student attended school regularly and completed homework consistently. Her pretreatment history test average was 58%.

Student 3 was an 11 year-old Asian American male who had a diagnosed learning disability. He had auditory processing difficulties and challenges with visual and auditory memory. This student had moderate to profound difficulties with expressive and receptive language and profound difficulty with auditory comprehension. In addition, he was diagnosed with Attention Deficit Hyperactivity
Disorder (ADHD) and Anxiety Disorder. This student attended language arts classes with the Resource Specialist Teacher, attended history and elective classes in general education classes, and was home-schooled for mathematics and science. He scored in the below basic range on the state standardized test in language arts. This student averaged 42% on pretreatment history tests.

Student 4 was an 11 year-old African American male student who was diagnosed with ADHD. This student was a general education student who attended a mandatory study hall 5 days a week after school because he did not complete homework assignments consistently and demonstrated poor organization skills. He scored in the basic range on the state standardized test in language arts. His pretreatment average history test score was 75%.

Student 5 was a 12 year-old European American female with a diagnosed learning disability. She qualified for resource because of hearing loss and verbal processing difficulties. She has difficulty with verbal and written comprehension. Her scores on working memory placed her in the below average range. This student received support services from the Speech and Language Resource Program. In addition, this student received mathematics instruction from the Resource Specialist Program teacher. She scored in the far below basic range on the state standardized test in language arts. This student averaged 63% on pretreatment history tests.

The comparison group also was taught by the researcher and had 32 students. See Table 2 for comparison group demographics. One student in the comparison group had a diagnosed learning disability. He attended language arts classes in the Resource Specialist Program. He had difficulties with auditory processing and had
Attention Deficit Hyperactivity Disorder. There was also another student in the comparison group who had ADHD and had a 504 plan that designated accommodations that teachers were to use to facilitate his learning.

**Protection of Human Subjects**

The participants did not experience any major risks. The researcher ensured that the fundamental rights of all students were preserved and adhered to the ethical standards of the American Psychological Association (2002). This study was presented to the University of San Francisco’s Institutional Review Board for the Protection of Human Subjects. The researcher followed several procedures to ensure the protection of human subjects. To maintain anonymity, each participant was assigned a random number. The researcher was the only person with accesses to the master list of participants and their assigned numbers. All testing materials, observation notes, interview transcripts, concept maps, study diaries, and grade reports were tracked by matching the participants to their number. Students were not identified on testing materials, audio-recordings, video-recordings, or transcripts by name. All data gathered were stored and in a secure location that only the researcher had access.

Prospective participants were asked to participate in the self-regulation learning-strategies study in an informed and voluntary manner. The district where this study was conducted required the research proposal be presented to the district management cabinet for review. Upon the cabinet’s approval, the researcher identified potential participants and contact their parents or guardians for consent. See Appendix C for consent forms. Participation was informed and voluntary.
Parents or guardians received a letter outlining the purpose of the instructional program, an outline of the instructional content of the program, the data-gathering protocols, sample questions from the self-regulation and self-efficacy instruments, and assurance that data gathered would remain anonymous and secure. Receiving consent allowed the researcher to gather the following information from the participants: observation data, interview transcripts, study diaries, test scores from the district-wide, online grade book, SESRLS responses, and SMALSI responses.

**Instrumentation**

Two quantitative instruments were used in this study: a published learning strategies inventory, the School Motivation and Learning Strategies Inventory, (Stroud & Reynolds, 2006) and the Self-Efficacy for Self-Regulated Learning Scale (Bandura, 2006). At the beginning of the intervention, the SMALSI and the SESRLS were used as a pretest to assess participants’ use of learning strategies and self-efficacy beliefs of the comparison-group and the treatment-group participants. In addition, the SMALSI and the SESRLS were re-administered at the end of the intervention as a means to assess the effectiveness of the self-regulation learning-strategies intervention.

*School Motivation and Learning Strategies Inventory*

The SMALSI was designed as a diagnostic tool that identifies students’ strengths and weaknesses in the area of learning-strategies development and was designed for students between the ages of 8 to 18 years old. The SMALSI is a self-report instrument that measures 10 constructs associated with learning and study strategies and academic motivation. Seven of the constructs identify student
strengths, and three constructs identify student liabilities. The student strength constructs include study strategies, note-taking and listening skills, reading and comprehension strategies, writing and research skills, test-taking strategies, organizational techniques, and time management. The student liabilities constructs measure low-academic motivation, test anxiety, and concentration and attention difficulties.

The SMALSI is written in two forms, the child version and the teen version. The child version is designed for 8- to 12-year-olds and the teen version is designed for 13- to 18-year-olds. Each version measures the same 10 constructs. The two forms differ in the area of organizational techniques and time management. In the child version, these two constructs are combined into one overarching category. Because the organizational-techniques and time-management items are combined on the child version, it has 23 fewer items than the teen version.

Participants in this study were between 11 to 13 years of age and were first-year middle-school students. The first year of middle school is a time when students begin to learn how to adjust to the varying demands of numerous teachers. As students begin their secondary education, organizational techniques and time management skills often pose challenges for at-risk students as noted by Dembo and Eaton (2000); therefore, it was appropriate to have participants take the teen version of the SMALSI. The teen version separates the time-management and organizational-techniques constructs into two distinct categories and has more items dedicated to each construct.
In the teen version of the SMALSI, each construct is measured with differing numbers of items: (a) study strategies, 18 items; (b) note-taking and listening skills, 19 items; (c) reading and comprehension strategies, 13 items; (d) writing and research skills, 13 items; (e) test-taking strategies, 15 items; (f) organizational techniques, 18 items; and (g) time management, 17 items.

This study did not include specific instruction in all constructs measured by the SMALSI; therefore, the following areas were not assessed: reading and comprehension strategies, writing and research skills, test anxiety, motivation, and concentration and attention difficulties. Thus, the participants took an adapted version of the SMALSI for the purposes of this study. A sample item for each scale is displayed in Table 3.

Stroud and Reynolds (2006) defined learning strategies as the purposeful behaviors of a learner that are intended to facilitate the acquisition and processing of information. Most inventories that measure learning strategies were designed for high school and college students and covered a narrow set of learning strategies. The SMALSI was developed to measure the strategies students use for learning and test taking for younger students. Each construct measured in the SMALSI has been researched thoroughly and has been linked to academic success by over 30 years of research.

The SMALSI was standardized on 2,921 students. There were 1,821 students aged 8 to 12 years who were used to standardize the Child Form and 1,100 students aged 13 to 18 years who were used to standardize the Teen Form. Students were sampled from around the United States. Most participants were from public schools.
Student samples represented gender, ethnicity, and parental educational attainment in approximately the same proportions as that of the U.S. population.

Table 3
Sample Items for Each SMALSI Construct

<table>
<thead>
<tr>
<th>Construct</th>
<th>Sample Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Strategies</td>
<td>I study differently for different kinds of tests (multiple choice, true/false, or essay).</td>
</tr>
<tr>
<td>Note-Taking/Listening Skills</td>
<td>I look over my notes to make sure I understand them.</td>
</tr>
<tr>
<td>Reading/Comprehension Strategies</td>
<td>I review the questions at the end of chapters to make sure I understand the most important parts.</td>
</tr>
<tr>
<td>Test-Taking Skills</td>
<td>When I get a test back, I review questions that I missed.</td>
</tr>
<tr>
<td>Organizational Techniques</td>
<td>I keep all my handouts and papers for a class together.</td>
</tr>
<tr>
<td>Time Management</td>
<td>I include time for breaks when I decide how long I need to study.</td>
</tr>
<tr>
<td>Low Academic Motivation</td>
<td>I have to study much more than others to learn the same things.</td>
</tr>
<tr>
<td>Test Anxiety</td>
<td>Even if I study, I cannot think of the right answers during a test.</td>
</tr>
<tr>
<td>Concentration/Attention Difficulties</td>
<td>I talk to my friends when I should be studying.</td>
</tr>
</tbody>
</table>

The Cronbach’s coefficient alpha reported for internal consistency and reliability estimates for constructs measured on the teen version of the SMALSI ranged between .79 and .91 with all but one of the coefficients between the .80 and .90 range. The validity of the SMALSI was assessed through a variety of methods including theory-based methods, content-based methods, and interscale correlations. Each of these validity efforts confirmed that the SMALSI scales measure the constructs it claims to measure. The authors of the SMALSI recommended that users of the SMALSI report measures at the individual scale level and recommended
against reporting a composite score. This study followed these guidelines and
reported data at the individual scale level.

For each item on the SMALSI, students answered with one of the follow
responses: N (never), S (sometimes), O (often), or A (always). Each of the responses
is worth 0 to 3 points. To score the SMALSI, responses for each item within each
construct was totaled and an overall raw score for the construct was given. See
Table 4 for average raw scores and range scores for the SMALSI-teen standardization
sample.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Average Raw Scores for the SMALSI-Teen Standardization Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>Range</td>
</tr>
<tr>
<td><strong>Student Strengths</strong></td>
<td></td>
</tr>
<tr>
<td>Study Strategies (STUDY)</td>
<td>0-54</td>
</tr>
<tr>
<td>Note-Taking/Listening Skills (NOTE)</td>
<td>0-57</td>
</tr>
<tr>
<td>Reading/Comprehension Strategies (READ)</td>
<td>0-39</td>
</tr>
<tr>
<td>Writing/Research Skills (WRITE)</td>
<td>0-39</td>
</tr>
<tr>
<td>Test-Taking Strategies (TEST)</td>
<td>0-45</td>
</tr>
<tr>
<td>Organizational Techniques (ORG)</td>
<td>0-54</td>
</tr>
<tr>
<td>Time Management (TIME)</td>
<td>0-51</td>
</tr>
<tr>
<td><strong>Student Liabilities</strong></td>
<td></td>
</tr>
<tr>
<td>Low Academic Motivation (LOMOT)</td>
<td>0-51</td>
</tr>
<tr>
<td>Test Anxiety (TANX)</td>
<td>0-69</td>
</tr>
<tr>
<td>Concentration/Attention Difficulties (CONDIF)</td>
<td>0-51</td>
</tr>
</tbody>
</table>

Raw scores were then converted to T scores and then converted to percentile
rank scores. T scores for each learning-strategy construct was interpreted using the
following descriptors: (a) 71 and higher, extremely well developed learning; (b) 61 to
70, very well developed learning strategy; (c) 40 to 60, average in development; (d)
30 to 39, below average in development; and (e) 29 and lower, inadequately
developed. A T score for each construct was reported for the intervention group and the comparison group. Statistical tests were computed using group T scores.

The SMALSI includes 14-paired items to check for response consistency. Once all the raw scores are tallied, then each inventory sheet goes through an inconsistent response check and receives an inconsistent responding index score. Next, each set of paired items scores are listed, if there is a difference equal to or greater than 2, it is identified as an inconsistent item pair. The total of these items comprises the inventory inconsistency score. When there is an inconsistency score of 5, there is an 81% likelihood that the examinee responded to the SMALSI items without giving careful consideration or having a clear understanding of what those items mean. If there is an inconsistent score of 6 or higher, then there is an 85% likelihood the student responded to items randomly. Inconsistency scores were used to determine which inventories were included in data analysis. One treatment group student’s scores were not included due to a high inconsistency score.

**Self-Efficacy for Self-Regulated Learning Scale**

The Self-Efficacy for Self-Regulated Learning Scale (Bandura, 2006) was used to assess participants’ self-efficacy for self-regulated learning. Students in this study were taught self-regulated learning strategies that were designed to improve students’ knowledge of learning strategies and motivation to use learning strategies in an attempt to improve students’ use of self-regulated learning strategies. Research has stated that knowledge alone is not sufficient to ensure students use effective learning strategies; they need to be motivated to use them (Cleary & Chen, 2009;
For this reason, students’ beliefs about their ability to use self-regulated learning strategies was investigated.

The SESRLS consists of 10 items where participants rate their belief in their ability to engage in specific self-regulated learning tasks such as completing homework assignments on time and being able to maintain motivation to complete homework. On this instrument, students used a response scale that ranged from 1 to 6 where a “1” response indicates that the respondent does not believe he or she is capable of performing the proposed self-regulated learning task well and a “6” indicates the respondent believes that he or she is capable of performing the proposed task very well. Item responses were summed and used to calculate means.

The SESRLS was developed using information gathered from self-regulation studies conducted by Zimmerman and Martinez-Pons (1986, 1988). In the Zimmerman and Martinez-Pons studies, structured interviews were used to determine the types of self-regulation strategies students performed when preparing for classroom tests. The interview data revealed that students used self-regulation strategies including planning and organizing academic work, structuring a productive study environment, overcoming distractions, and participating in class (Usher & Pajares, 2008).

Previous researchers have reported reliability ratings on the SESRLS that surpass Cronbach’s coefficient $\alpha = .80$ standard expected in educational research (Henson, 2001). A recent study by Cleary et al. (2008) reported a Cronbach’s coefficient alpha of .82 on this instrument. The Cleary et al. study included a group of 13 high-school freshmen who were taking an honors biology course.
Recently, Usher and Pajares (2008) conducted a validity study to confirm that the SESRLS measured the construct of self-efficacy for self-regulated learning. To complete this task, they researched previous studies that utilized the SESRLS. Through their research, they concluded that there is equivocal support for a unidimensional factor across grades levels in subject areas. Usher and Pajares stated there was a need to conduct their investigation because previous research using the SESRLS reported inconsistent results due to researchers using varied numbers of items from the original SESRLS. Another purpose for conducting the validation study was to provide information on how the self-efficacy for self-regulated learning factor functions or varies with gender or school level.

In their validation study, Usher and Pajares (2008) provided validity evidence of the SESRLS by investigating four facets of the instrument using 7 of the 11 items from the original SESRLS (Bandura, 2006). They chose the 7 items by asking teachers, which items best represented the behavior students needed to be successful in school across all subject areas. First, they assessed the factor structure to determine if a single factor emerged from the instrument items. Next, they investigated whether the SESRLS instrument was invariant across gender and school level (elementary, middle, and high). In addition, they assessed latent mean differences on the SESRLS between boys and girls and students at all three levels of schooling. Finally, researchers investigated construct and concurrent validity by examining the relationship between the SESRLS with other motivation and achievement constructs used in academic research such as self-efficacy, self-concepts, anxiety, task goal orientation, and grade point average.
Usher and Pajares (2008) calculated descriptive statistics and zero-order correlations by each subgroup and for the full sample. Data were obtained from 3,670 students (1,849 girls and 1,821 boys). They were enrolled in elementary (Grade 3 = 105, Grade 4 = 280, Grade 5 = 282), middle (Grade 6 = 579, Grade 7 = 858, Grade 8 = 592), or high school (Grade 9 = 319, Grade 10 = 267, Grade 11 = 313, Grade 12 = 65). The overall mean for the SESRLS for all samples was high (M = 4.30, SD = 0.99). They also calculated correlation coefficients among the items that ranged from 0.17 to 0.59.

In addition, Usher and Pajares (2008) performed confirmatory factor analysis to test a measurement model of the seven self-efficacy for self-regulated learning items. Five separate confirmatory factor analyses were calculated, one for each subgroup of interest: males, females, elementary school, middle school, and high school. They reported the following statistically significant statistics: for girls, (S-B) \( \chi^2 = (14) = 69.93, \text{CFI} = .98, \text{RMSEA} = .05, \text{SRMR} = 0.03 \); for boys, (S-B) \( \chi^2 = (14) = 104.60, \text{CFI} = .97, \text{RMSEA} = .06, \text{SRMR} = 0.03 \); for elementary-school students, (S-B) \( \chi^2 = (14) = 20.72, \text{not statistically significant, CFI} = .99, \text{RMSEA} = .05, \text{SRMR} = 0.03 \); for middle-school students, (S-B) \( \chi^2 = (14) = 102.89, \text{CFI} = .97, \text{RMSEA} = 0.06, \text{SRMR} = 0.03 \); for high-school students, (S-B) \( \chi^2 = (14) = 71.72, \text{CFI} = .96, \text{RMSEA} = .07, \text{SRMR} = .04 \). The data suggest that the items used to measure self-efficacy for self-regulated learning formed a unidimensional construct and demonstrated an equivalent structure for boy and girls and for elementary-, middle-, and high-school students. Usher and Pajares (2008) concluded that the SESRLS is a sound measure that researchers can use to assess students’ beliefs about their self-
regulatory capabilities.

**Self-Regulated Learning Strategies and Interview Schedule**

Zimmerman and Pons (1986) identified 14 classes of self-regulated learning strategies and one class of regulatory behavior classified as other. Definitions and examples of each category are listed in Table 5. They used this information to create interview questions that investigated high-school students’ use of self-regulated learning strategies when studying. Their interview data revealed that high-achieving students reported statistically significantly greater use of self-regulated learning strategies on average than low-achieving students in 13 of the 14 categories they identified. Researchers have used the learning strategies identified in Zimmerman and Pons’ (1986) seminal study to investigate the self-regulatory behaviors of numerous students of various ages with diverse abilities in a variety of subject areas (Cleary & Chen, 2009; Cleary et al., 2008; Cleary & Zimmerman, 2004; Lam, 2009; Stoeger & Ziegler, 2005; Volpe, DuPaul, & DiPerna, 2006; Zimmerman, 2008; Zito et al., 2007).

These studies provide insight into the various approaches students use to prepare for their examinations. For the focus-group students, this study used an interview schedule modeled after those developed by Zimmerman and Pons (1986) and more recently, by Cleary and Zimmerman (2004). The interview questions used in this study were structured and investigated participants’ use of self-regulatory strategies during each of the three phases of Zimmerman’s (2000) cyclical model of self-regulated learning goal-setting, performance and self-monitoring, and self-reflection. Interview questions are listed in Table 6.
Table 5
Self-Regulated Learning Strategies

<table>
<thead>
<tr>
<th>Categories of Strategies</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-evaluation</td>
<td>Statements indicating student-initiated evaluation of the quality of progress of their work</td>
</tr>
<tr>
<td>2. Organizing and transforming</td>
<td>Statements indicating student-initiated overt or covert rearrangement of instructional materials to improve learning</td>
</tr>
<tr>
<td>3. Goal-setting and planning</td>
<td>Statements indicating student setting of educational goals or subgoals and planning for sequencing, time, and completing activities related to those goals</td>
</tr>
<tr>
<td>4. Seeking information</td>
<td>Statements indicating student-initiated efforts to secure further task information from nonsocial sources when undertaking an assignment</td>
</tr>
<tr>
<td>5. Keeping records and Monitoring</td>
<td>Statements indicating student-initiated efforts to record events or results</td>
</tr>
<tr>
<td>6. Environmental structuring</td>
<td>Statements indicating student-initiated efforts to select or arrange the physical setting to make learning easier.</td>
</tr>
<tr>
<td>7. Self-consequences</td>
<td>Statements indicating student arrangement or mention of rewards or punishment for success or failure</td>
</tr>
<tr>
<td>8. Rehearsing and memorizing</td>
<td>Statements indicating student-initiated efforts to memorize material by overt or covert practice</td>
</tr>
<tr>
<td>9-11. Seeking social assistance</td>
<td>Statements indicating student-initiated efforts to solicit help from peers (9), teachers (10), and adults (11)</td>
</tr>
<tr>
<td>12-14. Reviewing records</td>
<td>Statements indicated student initiated effort to reread tests (12), notes (13), or textbooks (14) to prepare for class or further testing</td>
</tr>
<tr>
<td>15. Other</td>
<td>Statements of learning behavior that is initiated by other persons such as teachers or parents and unclear verbal statements</td>
</tr>
</tbody>
</table>

Interviews were recorded and took place in the researcher’s classroom and in another classroom at the school where the study took place. Interviews were conducted immediately after focus-group students were observed as they studied for a history test. The first phase of interviews questions asked focus-group students about their most recent performance levels in their history class. Subsequent interview questions were in reference to the studying students had completed prior to the interviews. The second phase of questions investigated how participants planned
their study time. The third phase of questioning asked participants to recount which learning strategies they used when studying and how they monitored their learning as they studied. During the final phase of questioning, focus-group students were asked to explain how they defined success and failure when studying, to what they attributed their success or failure, and how will they use their learning experiences in future studying situations.

Table 6
Self-Regulation Interview Questions

<table>
<thead>
<tr>
<th>Phases of Cyclical Feedback Loop</th>
<th>Interview Questions</th>
</tr>
</thead>
</table>
| Self-monitoring                 | 1. How have you done on tests in this class in the past?  
2. How would you describe your success when studying for tests this particular class?  
3. Why do you describe your success like that? |
| Goal-setting                    | 1. What kind of goals do you make when studying for tests in this class?  
2. How do you decide which strategies to use when studying for your tests?  
3. How confident are you that you can get a ___ on your next test in this class?  
4. How interested are you when studying for tests in this class?  
5. How do you decide how long you need to study for your tests?  
6. How do you decide where and when you will study for your tests? |
| Performance                     | 1. Which studying strategies work well for tests in this class?  
2. How do you determine which studying techniques to use when studying for tests in this class?  
3. What do you do to keep yourself motivated to study for tests in this class?  
4. What strategies do you use when you are not understanding/remembering what you need to learn for the test?  
5. How do you keep track of what you need to study for your test?  
6. How do you know when you’ve studied enough for a test? |
| Self-reflection                 | 1. How do you decide how well you’ve done on a test?  
2. What is the reason you got the score you earned on your test?  
3. How do you feel about the score you earned?  
4. What do you need to do to do better on your next test? |
Observations with a Think-Aloud Protocol

Researchers agree that self-report questionnaires measure participants’ aptitudes to use self-regulatory strategies (Pintrich et al., 2000; Winne & Perry, 2000). Although self-report questionnaires capture the participants’ aptitudes, researchers acknowledge that self-report measures are not adequate for capturing self-regulatory events as they take place in applied situations (Pintrich, 2004; Zimmerman, 2008). In response to the need to capture the on-going, dynamic processes of self-regulation, this study included an observation with a think-aloud protocol. When conducting research using a think-aloud protocol, the researcher asked focus-group participants to verbalize their thoughts and cognitive processes while they studied for a history test (Ericsson, 2006).

Within a week of test dates, video-recorded observations with a think-aloud protocol were conducted. The researcher asked focus-group participants’ parents where they would like observations to take place. All participants’ parents requested that the observations and interviews take place at school. As participants engaged in each phase of the studying task, the researcher asked them to verbalize their thoughts, cognitions, and self-regulatory processes.

Participants’ think-aloud responses were recorded, transcribed verbatim, coded, and assessed. Because the 15 self-regulation learning strategies identified by Zimmerman and Martinez-Pons have been identified as strategies that distinguish high-achieving students from low-achieving students, transcripts were coded for the presence of the learning strategies listed in Table 5.
At first, transcripts were coded simply for the presence or absence of self-regulation learning strategies. After further inspection, it became apparent that noting the presence of a learning strategy failed to capture how students employed self-regulation learning strategies. Students were using learning strategies but to varying degrees of proficiency and understanding. In response to this observation, the researcher developed a scoring guide that describes a continuum of how students applied self-regulation learning strategies. Transcripts were assessed according to the Self-Regulation Learning Strategies Continuum of Development listed in Appendix B.

Videotapes and think-aloud transcripts were validated using an interrater reliability protocol as described in the previous section. Twenty-percent of the transcripts were coded by two raters and the researcher. The researcher and raters reached 100% agreement on the coding. In situations where there was disagreement, the researcher and the raters came to a consensus on the coding of the data.

**Study Tools**

After each history test, treatment-group students filled out study diaries where they indicated which study strategies they used, the amount of time the studied, and whether they studied alone or with a partner. Students’ study diaries were then collected and the data were tabulated and means were reported according to history achievement levels. Data included the mean number of minutes used to study for tests, the frequencies of students who studied alone or with a partner, the type of study tools used, and the mean number of study tools used during studying.
Qualifications of the Researchers

The primary researcher holds a multiple-subject teaching credential, a supplementary life science teaching credential, and an administrative credential. She has been teaching in the California public schools for 19 years. She has taught reading improvement courses for middle-school students and has trained teachers as a new teacher mentor for the last 15 years. She taught sixth-grade language arts and history. At the time of the study, she had conducted one previous qualitative study that investigated students’ study behaviors. During previous investigations, students were observed as they studied for a science test, and then they were interviewed about how they went about studying.

The two secondary researchers are acquaintances of the primary researcher. They agreed to code qualitative data. The first researcher is a graduate student working on her master’s degree in holistic health. She has conducted mixed-methods research and is familiar with coding transcripts. She has used information from her studies to write articles that she has submitted for publication. Prior to attending graduate school, the first secondary researcher worked as a marketing consultant in the high-tech industry. The other secondary researcher is a former colleague of the primary researcher. She is a credentialed teacher who has taught for 7 years. She taught sixth-grade language arts and history for 5 years and has taught seventh-grade language arts and history for 2 years. Currently, this researcher is enrolled in a reading certificate program through the University of California at Irvine. She has been trained in cognitive and metacognitive strategy instruction in the area of reading.
Subjectivity

The nature of qualitative research assumes that researchers’ world views influence their research (Creswell & Plano, 2007). As the teacher of the students in the study, a self-regulation curriculum developer, and a presenter in the area of self-regulation, the researcher possesses strong opinions regarding the value of self-regulation to students’ academic achievement. The researcher took precautions to prevent researcher bias by using several techniques including treatment validation procedures, interrater reliability testing, and the reporting of disconfirming evidence.

Steps were taken to verify the treatment was taught in the manner described in the proposal. Each day’s lesson included a step-by-step written lesson plan with lesson objectives. On each lesson plan, the researcher checked off each step of each lesson as it was delivered. Approximately 50% of the lessons were observed. A new teacher mentor was trained to observe lessons and verify that the lessons were delivered in the manner described in the lesson plans.

Qualitative data analysis included coding, tabulating responses with data gathered through observations, think-alouds, and structured interviews. Reliability was established through intercoder reliability tests. Two raters and the researcher coded 20% of the transcripts. The researcher and raters attained 92% agreement in the coding initially. After discussion, the researcher and the raters reached a consensus and attained 100% agreement on the coding. In situations where there was disagreement, the researcher and the raters came to a consensus on the coding of the data.
Disconfirming evidence was reported to ensure that all data were analyzed and reported. In addition, themes from observations, think-alouds, and interview questions were identified. Themes were used to provide information not directly established through quantitative means.

Treatment

After the research proposal was approved, the researcher identified voluntary participants. The researcher gave students in her history classes consent forms explaining the purpose of the study and ensuring Human Subjects Protection. See Appendix C for treatment and comparison group and letters. Fifty-eight students returned consent forms and participated as research participants. Two students declined consent. The researcher’s morning history class was the treatment group, and the afternoon history class was the comparison group.

After receiving consent forms from the treatment-group students, the researcher used purposeful sampling to identify 5 medium- and low-achieving participants to be focus-group students. The focus-group students had several of the following characteristics: (a) poor organization skills, (b) poor study skills, (c) ineffective test preparation knowledge, and (d) average test and quiz scores below 85%. In addition, the representative sample of students had some of the following characteristics: Learning Disability, Attention Deficit Hyperactivity Disorder, and low-academic motivation. Researchers have suggested that future self-regulation investigations should consider examining the effects of self-regulation instruction for students with learning difficulties and recalcitrant students (Ablard & Lipschultz, 1998; Cleary et al., 2008; Cleary, & Zimmerman, 2004; Lam, 2009; Stoeger &
Ziegler, 2005; Volpe et al., 2006; Zimmerman, 2008; Zito et al., 2007). For this reason, the purposeful sample participants included students with the characteristics described previously. Participants who comprised the purposeful sample were observed studying for a history test. While they studied, they engaged in a think-aloud protocol. Immediately after studying, participants were interviewed using a structured interview protocol.

To initiate pretreatment data-gathering procedures, the researcher documented participants’ first-semester average history-test scores. Students in both the treatment and comparison groups were placed into one of three history achievement groups based on three history test grades. Students who earned 85% to 100% on history tests were placed in the high achievement group. Medium-achieving students were those individuals who earned between 84% to 70% on their first semester history tests. Students who earned less than 70% were placed in the low-achievement group. Quantitative data were analyzed according to pretreatment history achievement levels. In addition, the researcher administered the SMALSI and SESRLS to the treatment- and comparison-group classes.

The week before the treatment began, the researcher also made arrangements with parents to observe and interview focus-group participants as they prepared for history tests. Observations and interviews took place during the week of a history test in the researcher’s classroom or another classroom as the site of the study.

The treatment consisted of 8 weeks of instruction that took place during students’ history class. The treatment began the first week of March 2010 and concluded the first week of May 2010. Four days a week, the class period lasted 46
minutes, and one day a week the period lasted 36 minutes. Self-regulation learning-strategies lessons included instruction on the three-phase self-regulated learning cycle and specific learning strategies. See Table 7 for an outline of the lessons and activities that were implemented during the course of the treatment. Instruction began with students analyzing the results of their most recent history tests. Students filled out study diaries and then developed goals for the subsequent history unit. Two cycles of self-regulation learning-strategy lessons were taught over the course of the study. Each cycle of self-regulation instruction was integrated with the history curriculum over the course of instruction for two history units.

<table>
<thead>
<tr>
<th>Step</th>
<th>Task</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Selection of potential participants</td>
<td>February 15-February 28</td>
</tr>
<tr>
<td>2</td>
<td>Pretreatment qualitative data gathering</td>
<td>February 28-March 1</td>
</tr>
<tr>
<td>3</td>
<td>Pretreatment quantitative data gathering</td>
<td>March 1</td>
</tr>
<tr>
<td>4</td>
<td>Self-regulation learning strategies instruction</td>
<td>March 8 – May 5</td>
</tr>
<tr>
<td>5</td>
<td>Round 2 of qualitative data gathering</td>
<td>March 24 -March 28</td>
</tr>
<tr>
<td>6</td>
<td>Round 3 of qualitative data gathering</td>
<td>May 3 - May 5</td>
</tr>
<tr>
<td>7</td>
<td>Post-treatment quantitative data gathering</td>
<td>May 7</td>
</tr>
</tbody>
</table>

After students experienced the first cycle of self-regulation learning strategy lessons, qualitative observation and interview data were gathered from the focus group students. A second cycle of self-regulation learning strategies was taught and then qualitative data were gathered again. Interviews and observations were conducted again after students experienced the second cycle of self-regulation instruction. In addition, after each history test, treatment group students filled out study diaries detailing whether they studied alone or with a partner, the amount of time they studied, and the study tools they used as they studied. Upon completion of
the second cycle of self-regulation instruction, the SMALSI and the SESRLS was re-administered to treatment- and comparison-group students.

The instructional treatment used in this study was modeled after a self-regulation empowerment program developed by Zimmerman and Cleary (2004) and further refined by Cleary et al. (2008). This study’s treatment replicated much of the design of the Cleary et al. intervention. The treatment included five modules of instruction: introduction, task analysis, goal-setting, strategic planning, strategy training, and self-reflection. Table 8 provides an overview of the modules and the instructional activities that were used during the treatment. See Appendix F for module lesson plans.

<table>
<thead>
<tr>
<th>Instructional Modules</th>
<th>Sequential Order of Modules</th>
<th>Instructional Objectives &amp; Activities</th>
</tr>
</thead>
</table>
| **Introduction**      | First module (1 session)   | • Build community and provide overview of the program  
|                       |                            | • Identify students’ causal attribution for failure & current use of learning strategies  |
| **Task Analysis**     | Second module (2 sessions) | • Identify and discuss components of successful studying  
| **Goal-Setting**      | Third module (2 sessions)  | • Discuss importance of task analysis  
|                       |                            | • Discuss the value of goal-setting  
|                       |                            | • Model how to set outcome and process goals  
|                       |                            | • Model how to graph test grade goals  |
| **Strategic Planning**| Fourth Module (2 sessions) | • Discuss what strategic learning strategies are  
|                       |                            | • Discuss the value of studying strategically  
|                       |                            | • Identify elements of studying that are challenging  |
| **Strategy Training** | Implemented after fourth module and continued for most of the subsequent sessions | • Students learn how to implement various learning strategies  
|                       |                            | • Mini-module on concept mapping and mnemonics  
|                       |                            | • Model and guided practice on using learning strategies to prepare for tests  
|                       |                            | • Reteaching as needed  |
| **Self-Reflection**   | Fifth Module (administered each time history tests were returned to students) | • Students graph results of test scores and relate to the studying strategies used  
|                       |                            | • Students make strategic attributions and adaptive inference about the results of their performance  
|                       |                            | • Students analyze errors and connect errors to studying  |
The introduction module of the treatment oriented students to the purpose of the intervention and encouraged students to examine their attribution beliefs. This module’s lesson began by having student explain why they think they earned the grades they earned on their most recent history test. Then students were asked to compare and contrast two sample test reflection and attribution statements. One statement utilized external causal attributions and the other utilized internal causal attributions. After discussion, students defined attributions and learned to distinguish between internal and external attributions. Students learned that using internal causal attributions improves motivation and helps them understand the connection between study strategies and learning outcomes.

During the next phase of the lesson, students analyzed the results of their most recent history test and filled out their own test reflection and attribution sheets. Students recorded the grade they earned on their most recent history test and were given a list of possible reasons why a given grade was earned. The reasons were a mixture of internal and external attributions and included statements such as using effective strategies, spending enough time studying, and studying the correct information. Students marked the boxes that matched their beliefs. Then students determined whether they made internal or external attributions and reflected on their beliefs about their learning. Finally, students reflected on what they learned about attributions and how that information would guide them when they study in the future. This lesson’s main objective was to teach participants how to make internal causal attributions.
The second module lessons focused on teaching students about the task-analysis phase of self-regulation. In this module, students learned how to analyze study guides and match studying strategies to the types of questions that are on typical history tests. First, students identified the types of questions they usually have on history tests as multiple choice, vocabulary definitions, sequencing, short answer, matching, and essay. Next, they learned that different types of questions require different types of learning strategies and classified the learning strategies as rehearsal, organization, or elaboration strategies. Then students matched various study strategies to rehearsal, elaboration, and organization strategies. For example, they learned that vocabulary definition questions require rehearsal strategies and that flashcards and mnemonics were examples of rehearsal strategies they could use to study definitions. In addition, students learned that some questions ask them to retell sequence of events and that these questions require organization strategies such as reviewing outlines. Finally, they learned that essay questions require them to connect several ideas together and that they could use organization strategies such as reviewing concept maps to study for essay questions.

Students then applied what they had learned by analyzing their current study guide. They classified the type of questions on the study guide as definition, matching, listing, multiple choice, or essay. Next, they noted the type of learning strategy the questions required, and then identified which study strategies they would use when preparing for their upcoming history test.

The third module focused on goal-setting. During this module, participants reflected on the types of goals they have made in the past, and the procedures they
followed to accomplish their goals. Students learned that one type of goal is called an outcome goal and that they are focused on attaining a desired outcome. They learned that process goals are focuses on methods and strategies that help them reach their outcome goals. Students then looked at a list of goals and determined whether they were process or outcome goals. Next, they learned that outcome goals should be specific, measurable, attainable, realistic, and time dependent. Then students identified an outcome goal for their upcoming history test and then identified supporting process goals. Students learned to create process goals that focused on time, study strategies, and topics. The time goals indicated how long they would study and on which days they would study. The study strategy goals were tied to the task analysis students had learned in module two. Students indicated which study strategies they would use as they studied. The topic goal indicated which topics on their study guide they would review as they studied. During the third module, participants learned how to link outcome and process goals.

Once participants learned to establish goals, they began the fourth module of instruction, strategic planning. During this module, participants learned how to establish strategic plans for attaining the goals that they had identified during the goal-setting module. Students filled out a Strategic Study Plan form listed in Appendix A. On this form, students identified which study tools they would use as they studied. Study tools included using flashcards, outlines, webs, PowerPoint® slide shows, concept maps, or mnemonics. Students then planned specific days and times they would study. They listed where they would study and with whom they
would study. In addition, students developed a plan for monitoring progress and identified what they would do if they were not making progress.

After the first round of self-regulation lessons took place, it became apparent that students needed assistance in monitoring their progress toward their learning goals. In response to this need, the researcher developed a Study Reflection Sheet. See Appendix E for a copy of the Study Reflection Form. On this form, students indicated which items on their study guide they had mastered and which items they still needed to review. Students filled out this form at the beginning and end of each study session. Module four focused on students creating strategic plans using the Strategic Study Plan form.

The fifth module focused on strategy training. Students learned how to use mnemonics and concepts maps as study strategies. The students learned to use mnemonics to help them remember the definitions of vocabulary words and recall contributions of historical figures. The researcher reinforced the idea that mnemonics are an example of a rehearsal strategy and that it should be used with study guide questions that require simple recall of information. Students also learned how to use concept maps to compare and contrast political systems and religious beliefs. The researcher reinforced the idea that concept maps are an example of an elaboration strategy and that concept maps are effective study tools to use when preparing for essay questions. The researcher utilized social cognitive instructional practices to assist students in learning mnemonics and concept-mapping strategies. Social cognitive instructional practices utilize an instructional sequence that includes explicit instruction, modeling, and guided practice (Schunk, Pintrich, & Meece, 2008).
After completing the first five modules of the self-regulation instructional program, students took a history test. Prior to taking their tests, focus-group students engaged in the second round of observations and interviews. When they received their graded tests, they began the final module of the self-regulation instructional program, self-reflection. Upon receiving their graded tests, students made self-judgments and connected their tests results to their preparation techniques. Participants reflected on whether they reached their goals, made strategic attributions, and created adaptive inferences about testing outcomes. During this phase, students filled out their Test Preparation Reflection Forms. See Appendix G for a copy of the Test Preparation Reflection Forms. On this form, students graphed their score, indicated how long they studied, which study tools they used as they studied, whether they studied alone or with a partner, whether the reached their goals, and what adjustments they would make when they study in the future.

Upon completion of the first round of self-regulation lessons, the instruction began on the next history unit. Self-regulation lessons were taught again. The second round of lessons were the same as the first round of lessons; however, a few adjustments were made to support students. Some students were having difficulty understanding how to make and read concept maps. Students who were having difficulty worked in a small group with the researcher. The researcher modeled how to construct maps; students followed the researcher’s model and constructed their own maps. The researcher then worked with the small group of students to demonstrated how to read concept maps and use them as a study tool. Several of the students who were having difficulties had learning disabilities in the area of verbal
processing. In an effort to further support learners, the researcher assisted students in making flashcards with visual cues on them. Students learned to make flashcards that had questions with a visual cue of the answer on one front of the flashcard and the answer on the back of the flashcard. Through the course of the self-regulation instructional program, students learned three new study strategies, mnemonics, concept maps, and flashcards with visual cues.

During the final week of the self-regulation learning strategies program, data-gathering procedures began again. Focus-group students were interviewed and observed. Participants’ history test grades were recorded. All comparison-group students and intervention participants took the SMALSI (Stroud & Reynolds, 2007) and the SESRLS (Bandura, 2006) as posttests.

**Data-Collection Procedures**

The researcher collected data on the comparison group and the treatment group during the same time interval. See Table 9 for a summary of the data collection time line. Quantitative instruments were given to the students in the comparison group and the students in the treatment group prior to and upon the conclusion of the treatment. Treatment-group and comparison-group participants’ history test scores were collected prior to and throughout the treatment. Qualitative data were gathered concurrently for focus-group students at three different times: prior to the intervention, during the last intervention session, and at arranged times to conduct semi-structured interviews and observations.
Table 9
Data-Collection Time Line

<table>
<thead>
<tr>
<th>Week</th>
<th>Quantitative Data</th>
<th>Qualitative Data</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-intervention</td>
<td>Average history test scores from previous semester</td>
<td>Intervention group submitted all data types</td>
</tr>
<tr>
<td>1</td>
<td>Pretest: SMALSI &amp; SESRLS</td>
<td>Structured interviews, observations, think-alouds &amp; study diaries</td>
<td>Comparison group submitted history test scores</td>
</tr>
<tr>
<td>2</td>
<td>None</td>
<td>None</td>
<td>Intervention &amp; comparison groups</td>
</tr>
<tr>
<td>3</td>
<td>None</td>
<td>None</td>
<td>Intervention group</td>
</tr>
<tr>
<td>4</td>
<td>History Test or results</td>
<td>Structured interviews, observations, think-alouds, &amp; study diaries</td>
<td>Intervention group</td>
</tr>
<tr>
<td>5</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>History Test results</td>
<td>Structured interviews, observations, think-alouds &amp; study diaries</td>
<td>Intervention group</td>
</tr>
<tr>
<td></td>
<td>Posttest: SMALSI &amp; SESRLS</td>
<td></td>
<td>Intervention &amp; comparison groups</td>
</tr>
</tbody>
</table>

Data Analysis

This investigation addressed the following research questions:

Research Question 1: To what extent is there a change in sixth-grade students’ use of learning strategies as measured by SMALSI from pretest to posttest for those participating in a self-regulation learning-strategies instructional program when compared with the use of learning strategies of students in a comparison group?

a. Subquestion 1. To what extent is there a greater change on the SMALSI for low-achieving students compared with high-achieving and medium-achieving students in the instruction and comparison groups?

Research Question 2: To what extent is there a change in sixth-grade students’ self-efficacy for self-regulated learning as measured by SESRLS from pretest to posttest
for those participating in a self-regulation learning-strategies instructional program
when compared with the SESRLS of students in a comparison group?

a. Subquestion 2. To what extent is there a greater change on the SESRLS for
low-achieving students compared with medium-achieving and high-achieving
students in the treatment and comparison groups?

Research Question 3: To what extent is there a change in sixth-grade students’
performance on history tests from pretest to posttest for those participating in a self-
regulation learning-strategies intervention?

a. Subquestion 3: To what extent is there a greater change on history test
scores for low-achieving and moderate-achieving students compared with high-
achieving students in the treatment and comparison group?

Research Question 4: To what extent is there a change in focus-group students’ use of
deliberate strategies from pretreatment to posttreatment after participating in a
deliberate learning-strategies instructional program as measured by observations
with a think-aloud protocol and the Self-Regulation Interview Schedule?

Research Question 5: To what extent is there a change in students’ use of study tools
after participating in a self-regulation learning strategies instructional program from
pretreatment to posttreatment as measured by Test Preparation Reflection Forms?

a. Subquestion5: To what extent is there a greater change in low-achieving
students’ use of study tools compared with high-achieving and moderate-achieving
students in treatment group?

In order to answer the research questions, both quantitative and qualitative data
were analyzed following the recommendations for concurrent mixed methods studies
suggested by Creswell and Clark (2007). Their recommendations include collecting data in stages and then triangulating results. The first stage of data analysis involves analyzing quantitative data.

To address the first research question, quantitative data analysis consisted of both descriptive and inferential statistics on the SMALSI. Descriptive statistics included means and standard deviations. Two-way analyses of variances (ANOVA) were calculated on each scale of the SMALSI to analyze the mean differences between pretests and posttests. The independent variables were treatment or comparison group and history achievement with three levels: high, medium, and low. The dependent variable was T scores on each scale of the SMALSI. Effect sizes were computed for statistical significance results.

To address the second research question, quantitative data analysis used both descriptive and inferential statistics on the SESRLS. Descriptive statistics included means and standard deviations. A two-way ANOVA was calculated on the SESRLS to analyze the mean differences between pretests and posttest for both intervention and comparison groups. Effect sizes were computed to determine statistical significance.

To address the third research question, quantitative data analysis included both descriptive and inferential statistics. Descriptive statistics included means and standard deviations. Inferential statistics included two-way ANOVA calculated on the mean differences between pretests and posttest on history test scores for both intervention and comparison groups. Effect sizes were computed to determine statistical significance.
To address the fourth research question, qualitative data consisting of interview and observation transcripts were coded using the 15 self-regulation learning strategies listed on the coding sheet listed in Appendix D. Self-regulation learning strategies identified in transcripts and observations were then assessed using the Self-Regulation Learning Strategies Continuum of Development listed in Appendix B. The scoring guide was used to assess the depth of the self-regulation behaviors mentioned or observed in the interviews and observations. Results are presented in tables followed by narrative utilizing students’ quotes to demonstrate the development of self-regulation behavior exhibited by students throughout the course of the study.

To address the fifth research question, data from students’ study diaries were tabulated. The study tool frequency score indicated the number of times a particular study tool was mentioned. The number of strategies students used and the amount of time they studied was totaled and was used to generate descriptive statistics. Descriptive statistics included means and standard deviations. Study partner data were tabulated and were used to generate descriptive statistics consisting of means and standard deviations. Results were clustered into student history achievement levels.

Qualitative data analysis included coding, tabulating responses with data gathered through observations, think-alouds, and structured interviews. Reliability was established through intercoder reliability tests. Two raters and the researcher coded 20% of the transcripts. The researcher and raters attained 92% agreement in the coding initially. After discussion, the researcher and the raters reached a
consensus and attained 100% agreement on the coding. In situations where there was
disagreement, the researcher and the raters came to a consensus on the coding of the
data.

Disconfirming evidence was reported to ensure that all data were analyzed
and reported. In addition, themes from observations, think-alouds, and interview
questions were identified. Themes were used to provide information not directly
established through quantitative means.

In the final stage of data analysis, both sets of data were merged to provide a
comprehensive understanding of students’ knowledge and use of self-regulation
learning strategies. Quantitative and qualitative data were analyzed by presenting
similarities between the two data sets. This stage of data analysis triangulated data
such that qualitative observations and interview statements verify quantitative results.
In addition, triangulation of data enhanced the understanding of the research problem
by utilizing qualitative data analysis to provide explanations to questions raised
during quantitative data analysis.

**Summary**

This mixed-methods study examined the effects of a self-regulation learning-
strategies instructional program with sixth-grade students. This study used a
triangulation-mixed method design where different, but complementary data were
collected on participants’ use of self-regulation learning strategies. In this study,
quantitative data were used to examine the effects of teaching participants how to
prepare for tests while receiving 8 weeks of self-regulation learning-strategies
instruction. Quantitative data consisted of participant history test scores, scores on a
self-regulation learning strategies inventory, and scores on a self-efficacy inventory.

Concurrent with quantitative data collection, qualitative data were gathered and included study diaries, observations, and structured interviews that explored participants’ thought processes as they engaged in self-regulation learning tasks. Qualitative data were used to confirm the quantitative results.
CHAPTER IV

RESULTS

The purpose of this mixed-methods, quasi-experimental study was to examine the effects of a self-regulation learning-strategies instructional program on sixth-grade students’ use of study tools, self-regulation strategies, self-efficacy beliefs, and history test grades. Students from two intact sixth-grade history classes participated in the study. The treatment class was taught 10 self-regulation learning-strategy lessons. The comparison group was taught traditional history curriculum without explicit self-regulation learning-strategy lessons. The study took place over an 8-week period of time.

Quantitative data included pretreatment and posttreatment measures on the School Motivation and Learning Strategies Inventory (SMALSI), the Self-Efficacy for Self-Regulated Learning Scale (SESRLS), and history test scores. A two-way analysis of variance was conducted on SMALSI and SESRLS scores. The independent variables included treatment and comparison classes and high, medium, and low history achievement. History achievement was determined by averaging test scores on three history tests taken prior to the beginning of the treatment. Students who earned an 85% or higher average were labeled high achievers, students who earned between 70% to 84% were labeled medium achievers, and students who earned less than 70% were labeled low achievers. For history test data, two independent-samples t tests were conducted. The independent variable was treatment and comparison group. The tests were conducted on students in the high history achievement group and on the combined low and medium history achievement group.
groups. These two tests allowed comparisons of the groups controlling for history achievement.

All students in the treatment group provided qualitative data by filling out study diaries that chronicled the amount of time they studied, whether they studied alone or with a partner, and their use of study tools prior to the treatment and after the first and second rounds of self-regulation study-strategy lessons. Qualitative data also were gathered through observations and interviews conducted with five treatment-group students. Observation and interview data were gathered prior to the treatment and after the first and second cycles of self-regulation learning-strategy lessons.

This chapter contains the results of this study, which is presented in four sections: Descriptive Results, Quantitative Results, Qualitative Results, and Summary. Results are presented in response to the research questions.

**Descriptive Results**

During the winter and spring of 2010, 58 students from a middle school in the San Francisco East Bay participated in this study. Descriptive data for this study consisted of students’ history test scores and scores from two instruments: the SMALSI and the SESRLS. The SMALSI included four scales that measured students’ perceptions about the frequency they used various strategies study skills: study strategies, organization, time management, and test-taking strategies. For each scale, students’ responses to the inventory items were totaled and then converted to a T score as described in the SMALSI user’s manual. The SMALSI has been normed nationally. T scores are standardized scores derived from raw scores. To create T scores, the raw score means and standard deviations were converted so that the mean
is 50 and the standard deviation is 10. One student in the treatment group demonstrated response acquiescence and marked the highest score for approximately 75% of the items on the SMALSI scale. This student’s SMALSI scores were dropped from the analysis. The pretreatment and posttreatment means are located in Table 10.

### Table 10
Descriptive Statistics for Pretreatment and Posttreatment SMALSI T scores by History Achievement Group

| H. A. Group | SMALSI Scale | n | M | SD | M | SD | n | M | SD | M | SD |
|-------------|-------------|---|---|----|---|----|---|---|----|---|----|    |
| H           | Study       | 16 | 56.56 | 6.67 | 61.25 | 8.07 | 14 | 52.21 | 10.71 | 57.92 | 10.42 |
| M           |             | 6  | 53.33 | 11.65 | 58.50 | 7.55 | 10 | 50.40 | 11.37 | 53.10 | 11.82 |
| L           |             | 3  | 52.00 | 10.14 | 56.67 | 13.01 | 8  | 46.75 | 10.07 | 47.87 | 9.31  |
| T           |             | 25 | 55.24 | 8.25  | 60.04 | 8.35 | 32 | 50.28 | 10.65 | 53.91 | 11.07 |
| H           | Org         | 16 | 55.56 | 8.07  | 66.56 | 6.92 | 14 | 54.64 | 8.24  | 66.42 | 7.57  |
| M           |             | 6  | 53.67 | 12.20 | 67.33 | 6.77 | 10 | 46.90 | 9.02  | 60.90 | 9.47  |
| L           |             | 3  | 52.33 | 16.92 | 63.37 | 9.01 | 8  | 46.13 | 6.08  | 55.13 | 7.26  |
| T           |             | 25 | 54.48 | 9.89  | 66.40 | 6.89 | 32 | 50.09 | 8.79  | 61.87 | 9.13  |
| H           | Time        | 16 | 59.71 | 8.13  | 65.87 | 7.16 | 14 | 58.71 | 8.62  | 61.71 | 9.32  |
| M           |             | 6  | 56.17 | 11.21 | 62.50 | 10.09 | 10 | 53.90 | 10.91 | 59.20 | 8.56  |
| L           |             | 3  | 54.00 | 11.36 | 58.00 | 14.52 | 8  | 49.88 | 8.39  | 49.75 | 5.95  |
| T           |             | 25 | 58.20 | 9.12  | 64.12 | 8.85 | 32 | 55.00 | 9.75  | 57.93 | 9.48  |
| H           | Test        | 16 | 56.50 | 9.12  | 59.56 | 7.48 | 14 | 58.36 | 7.75  | 59.00 | 7.54  |
| M           |             | 6  | 53.83 | 11.72 | 55.67 | 7.23 | 10 | 51.30 | 9.32  | 53.10 | 9.81  |
| L           |             | 3  | 45.67 | 8.14  | 62.00 | 12.77 | 8  | 47.63 | 7.73  | 49.75 | 6.34  |
| T           |             | 25 | 54.56 | 9.93  | 58.92 | 7.97 | 32 | 53.47 | 9.22  | 54.84 | 8.74  |

Note. H.A.–History Achievement Level: H-High Achievement, M-Medium Achievement, L-Low Achievement.
Due to response acquiescence, one set of student scores were dropped from treatment group the SMALSI data set.

The low-achieving students had, on average, the lowest scores on each of the SMALSI scales in both the treatment and comparison groups. The low-achieving, comparison-group students had, on average, lower scores than the low-achieving treatment students on both the pretreatment and posttreatment measures on all scales. The low-achieving comparison-group students demonstrated largest growth on the organization scale. The medium-achieving treatment group students had, on average,
scores that are higher on each scale of the SMALSI on the preassessment and postassessments than the medium-achieving comparison group students. Each group showed higher scores, on average, on the postassessments. The high-achieving students in the treatment and comparison groups had the highest scores, on average, on each scale of the three groups in their respective classes. There was limited growth between the preassessment and postassessment on the SMALSI for both high-achieving groups; however, the high-achieving treatment group made relatively large gains on average on the organization scale.

The SMALSI scoring guide lists qualitative descriptors for T-score ranges. The descriptors that were used for the scales used in this study are as follows: 29 and lower, inadequately developed, 30-39 below average in development, 40-60 average in development, 61-70 very well developed, and 71 and higher extremely well developed. The pretreatment and posttreatment T-scores descriptors for each group are located in Table 11.

For both treatment groups and the three history achievement groups, pretreatment assessments on each scale had scores in the “average in development” range. On the postassessment study strategies scale, the high-achievement treatment group had scores in the “very well developed” range. All other study strategies postassessment T scores remained in the “average in development” range. On the organization scale postassessment, T score results indicated that each group’s scores moved into the “very well developed” range except for the medium-achievement
Table 11
Frequencies of Pretreatment and Posttreatment SMALSI T-score Descriptors by History Achievement Group

<table>
<thead>
<tr>
<th>Treatment Group Pretreatment</th>
<th>Comparison Group Pretreatment</th>
<th>Treatment Group Posttreatment</th>
<th>Comparison Group Posttreatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Well</td>
<td>Well Well</td>
<td>Well Well</td>
<td>Well Well</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td><strong>Study</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Med</td>
<td></td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td><strong>Org</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Med</td>
<td></td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Med</td>
<td></td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td><strong>Test</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Med</td>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1</td>
<td>20</td>
</tr>
</tbody>
</table>

**Total**
comparison group. This group’s scores stayed in the “average in development” range.

On the time-management scale, postassessment T scores indicated that three groups moved into the “very well developed” range for both high-achievement groups and the medium-achievement treatment group. The other three groups stayed in the “average in development” range. On the test-taking strategies postassessment scale, the low-achievement treatment group moved to the “very well developed” range.

The Self-Efficacy for Self-Regulated Learning Scale (SESRLS) measured students’ perceptions on their ability to perform various self-regulatory behaviors when studying history. The pretreatment and posttreatment means are located in Table 12. Possible scores on the SESRLS ranged from 1-6. The mean preassessment scores were in the 5 range for both the medium and high achievement for both the treatment and control groups. Scores on the SESRLS were relatively high for all groups. On the postassessment, all groups’ average scores were 5 or higher except for the low-achievement comparison group.

<table>
<thead>
<tr>
<th>H. A.</th>
<th>Pretreatment</th>
<th>Posttreatment</th>
<th>Pretreatment</th>
<th>Posttreatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>H</td>
<td>16</td>
<td>5.14</td>
<td>.51</td>
<td>5.40</td>
</tr>
<tr>
<td>M</td>
<td>6</td>
<td>5.10</td>
<td>.54</td>
<td>5.30</td>
</tr>
<tr>
<td>L</td>
<td>4</td>
<td>4.44</td>
<td>.97</td>
<td>5.13</td>
</tr>
<tr>
<td>T</td>
<td>26</td>
<td>5.02</td>
<td>.63</td>
<td>5.33</td>
</tr>
</tbody>
</table>

Note. H. A. – History Achievement Level
Pretreatment and posttreatment history test means were computed and are located in Table 13. All groups showed slight improvement; however, the high-achievement group in the comparison class had a slight decline in means.

<table>
<thead>
<tr>
<th>H. A.</th>
<th>Pretreatment</th>
<th>Posttreatment</th>
<th>Pretreatment</th>
<th>Posttreatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>16 90.95 3.00 92.62 4.00</td>
<td>14 90.50 3.00 89.93 5.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>6 76.00 4.40 86.14 4.42</td>
<td>10 78.66 6.05 82.41 8.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>4 56.79 10.21 64.76 15.31</td>
<td>8 57.65 7.57 69.58 10.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>26 82.23 13.54 86.84 11.88</td>
<td>32 78.59 14.37 82.49 11.60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Assumptions**

Quantitative data from the SMALSI and SESRLS were analyzed using two-way analysis of variance (ANOVA). Quantitative data from students’ history test scores were analyzed using independent-samples t tests. The four assumptions of two-way ANOVA and independent-samples t tests were assessed prior to proceeding with data analysis. The first assumption assessed was the normal distribution of the dependent variable for both population samples. The population sample consisted of 58 students. It was not large enough to assume normal distribution through the Central Limit Theorem (Kinnear & Gray, 2010). Therefore, statistically significant findings must be taken with caution due to the increased possibility of Type I error with small population samples.

The second assumption assumes equal variances for the population sample. This assumption was met through Levene’s test for equal variances. The Levene’s test for the mean differences on the four SMALSI scales: study, organization, time-
management, and test-taking strategies were $F(2,51) = 1.99$, $F(2,51) = 1.75$, $F(2, 51) = .88$ and, $F(2, 51)= 1.50$, respectively. All of the Levene’s tests suggested that the equal variance assumption between the population samples for the SMALSI scales was satisfied. The Levene’s test for the SESRLS was $F (2,52) = 5.42$. This violates the equal variance assumption for the SESRLS. The Levene’s test for the change in history test scores was $F (1,30) = 1.75$ for the high-achievement group and $F(1,26) = 0.63$ for the medium- and low-achievement groups. The equal variance assumption was met for the history test scores.

The third assumption is that population samples are randomly drawn from the population. Students were placed in the history classes randomly using a computer-generated student scheduling system. The population sample was randomly assigned, not randomly selected. This violates the random selection assumption.

The final assumption is that the observations of the dependent variables are independent of one another. The scores students earn on the SMALSI inventory, history test scores, and the SESRLS inventories were independent of each other. The independence assumption was met for each of the dependent variables in the study.

Students in the treatment and comparison groups attended the same school, were in the same grade level, and had classes with one another. There is a possibility that some students in the treatment group shared what they had learned with students in the comparison group. Students in the comparison group did not appear to have knowledge of or use the self-regulation learning strategies taught to the treatment group. Treatment-group students did not discuss whether they had shared what they
had learned with students in the comparison group. There is a logical argument that
the two groups are independent of one another.

Two-way ANOVAs were calculated on the SMALSI and the SESRLS data; \( t \) tests were calculated on history test scores. Two of the four of the two-way ANOVA and \( t \) tests assumptions were met. Because all of the assumptions for a two-way
ANOVA and \( t \) tests were not met, any statistically significant result should be
interpreted with caution due to an increased possibility of a Type I error.

**Quantitative Results**

Results have been presented by research question.

*Research Question 1: To what extent is there a change in sixth-grade students’ use of
learning strategies as measured by SMALSI from pretest to posttest for those
participating in a self-regulation learning-strategies instructional program when
compared to the use of learning strategies of students in a comparison group?*

*Research Subquestion 1. To what extent is there a greater change on the SMALSI for
low-achieving students compared with high-achieving and medium-achieving
students in the instruction and comparison groups?*

A two-way ANOVA was computed to investigate whether there was a
significant interaction between two groups, treatment and comparison, and three
history achievement levels, high, medium, and low, on the use of study strategies as
measured by four scales of the School Motivation and Learning Strategies Inventory
(SMALSI): study strategies, organization strategies, time-management strategies,
and test-taking strategies. The results of the two-way ANOVA for the study
strategies scale are located in Table 14. Two-way ANOVA results indicated
nonsignificant results for the main effect of group and history achievement. In addition, there was not a statistically significant interaction.

Table 14
Results of Two-Way ANOVA on Change Scores for the Study-Strategies Scale for Treatment and History Achievement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Partial Eta Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>1</td>
<td>172.44</td>
<td>172.44</td>
<td>2.86</td>
<td>.05</td>
</tr>
<tr>
<td>History ach.</td>
<td>2</td>
<td>33.19</td>
<td>16.59</td>
<td>0.28</td>
<td>.01</td>
</tr>
<tr>
<td>G x A</td>
<td>2</td>
<td>245.22</td>
<td>122.61</td>
<td>2.03</td>
<td>.07</td>
</tr>
<tr>
<td>Error</td>
<td>52</td>
<td>3134.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>3463.88</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To investigate whether there was a statistically significant interaction between treatment group and history achievement on the organization scale, a two-way ANOVA was computed. The results of the two-way ANOVA for the organization scale are located in Table 15. Two-way ANOVA results indicated nonsignificant results for the main effect for group and history achievement. In addition, there was not a statistically significant interaction.

Table 15
Results of Two-Way ANOVA on Change Scores for the Organization Scale for Treatment and History Achievement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>1</td>
<td>65.56</td>
<td>65.56</td>
<td>1.02</td>
<td>.02</td>
</tr>
<tr>
<td>History ach.</td>
<td>2</td>
<td>86.87</td>
<td>43.43</td>
<td>0.67</td>
<td>.03</td>
</tr>
<tr>
<td>G x A</td>
<td>2</td>
<td>128.10</td>
<td>64.04</td>
<td>0.99</td>
<td>.04</td>
</tr>
<tr>
<td>Error</td>
<td>52</td>
<td>3378.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>12214.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A two-way ANOVA was computed to investigate whether there was a statistically significant interaction between group and history achievement on the time-management scale. The results of the two-way ANOVA for the time
management scale are located in Table 16. Two-way ANOVA results indicated
statistically significant results for the main effect for group and nonsignificant results
for history achievement. In addition, there was no statistically significant interaction.

Table 16
Results of Two-Way ANOVA on Change Scores for the Time-Management Scale for Treatment and History Achievement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Partial Eta Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>1</td>
<td>321.19</td>
<td>321.19</td>
<td>5.99*</td>
<td>.10</td>
</tr>
<tr>
<td>History ach.</td>
<td>2</td>
<td>20.00</td>
<td>10.00</td>
<td>0.19</td>
<td>.01</td>
</tr>
<tr>
<td>G x A</td>
<td>2</td>
<td>193.25</td>
<td>96.62</td>
<td>1.80</td>
<td>.07</td>
</tr>
<tr>
<td>Error</td>
<td>52</td>
<td>2787.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>4525.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Statistically significant at the .05 level.

For the test-taking strategies scale, the results of the two-way ANOVA are
located in Table 17. Two-way ANOVA results indicated statistically significant
results for both treatment group and history achievement. In addition, there was a
statistically significant interaction. The partial eta squared for the main effects of
group and achievement level are considered large effects. The partial eta squared for
the interaction is also a large effect.

Table 17
Results of Two-Way ANOVA on Change Scores for the Test-Taking Strategies Scale for Treatment and History Achievement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Partial Eta Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>1</td>
<td>421.37</td>
<td>421.37</td>
<td>11.93*</td>
<td>.19</td>
</tr>
<tr>
<td>History ach.</td>
<td>2</td>
<td>564.99</td>
<td>282.50</td>
<td>8.00*</td>
<td>.24</td>
</tr>
<tr>
<td>G x A</td>
<td>2</td>
<td>436.68</td>
<td>218.34</td>
<td>6.18*</td>
<td>.19</td>
</tr>
<tr>
<td>Error</td>
<td>52</td>
<td>1836.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>3341.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Statistically significant at the .05 level.

Research Question 2: To what extent is there a change in sixth-grade students’ self-
efficacy for self-regulated learning as measured by SESRLS from pretest to posttest
for those participating in a self-regulation learning-strategies instructional program when compared to the SESRLS of students in a comparison group?

Research Subquestion 2. To what extent is there a greater change on the SESRLS for low-achieving students compared with medium-achieving and high-achieving students in the treatment and comparison groups?

A two-way ANOVA was computed to compare the change in Self-Efficacy for Self-Regulated Learning Inventory (SESRLS) scores from pretreatment to posttreatment. Results of the two-way ANOVA can be found in Table 18. There were no statistically significant main effects, and there was no statistically significant interaction.

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Partial Eta Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>1</td>
<td>0.03</td>
<td>0.03</td>
<td>0.07</td>
<td>.00</td>
</tr>
<tr>
<td>History achievement</td>
<td>2</td>
<td>2.81</td>
<td>1.41</td>
<td>3.00</td>
<td>.10</td>
</tr>
<tr>
<td>G x A</td>
<td>2</td>
<td>0.18</td>
<td>0.09</td>
<td>0.19</td>
<td>.00</td>
</tr>
<tr>
<td>Error</td>
<td>52</td>
<td>24.33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>32.73</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question 3: To what extent is there a change in sixth-grade students’ performance on history tests from pretest to posttest for those participating in a self-regulation learning-strategies intervention?

Research subquestion 3: To what extent is there a greater change on history test scores for low-achieving and medium-achieving students compared with high-achieving students in the treatment and comparison group?
An independent-samples *t* test was calculated to compare the change in history test scores from pretreatment to posttreatment for the high-achieving students in treatment and control group. An independent-samples *t* test was calculated to compare the combined change for the low-achieving and medium-achieving students. A two-way ANOVA was not calculated on this dependent variable because placement into history achievement groups was based on history test scores. It would have violated the independence assumption to base an independent variable on the dependent variable. Results of the *t* tests can be found in Table 19. There were no statistically significant differences on history test scores between the high-achieving students in the treatment and comparison groups. In addition, there were no statistically significant differences on history test scores between the combined low and medium-achieving students in the treatment and comparison groups.

<table>
<thead>
<tr>
<th>History Achievement</th>
<th>Treatment</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>High</td>
<td>16</td>
<td>1.67</td>
</tr>
<tr>
<td>Medium &amp; Low</td>
<td>10</td>
<td>9.31</td>
</tr>
</tbody>
</table>

Qualitative Results

*Research Question 4: To what extent is there a change in focus-group students’ use of self-regulation strategies from pretreatment to posttreatment after participating in a self-regulation learning-strategies instructional program as measured by observations with a think-aloud protocol and the Self-Regulation Interview Schedule?*
The purpose of the qualitative portion of this study was to confirm and validate students’ responses on quantitative measures. A representative sample of two medium- and low-achieving students participated in the qualitative aspect of the study. The qualitative data gathered online measures of self-regulatory processes as students studied for history tests. Online measurement is a form of data gathering such that data are gathered while a research participant is engaged in specific self-regulatory learning processes. A concurrent research design was used to triangulate data to investigate to what extent quantitative and qualitative data converge.

Five focus-group students were observed and then immediately interviewed as they studied for three history tests. The first observation and interview took place prior to initiating the self-regulation study-strategy intervention. The second observation and interview cycle took place after the first round of self-regulation instruction. The third observation and interview cycle took place after the second round of self-regulation instruction.

Students were observed as they studied for a history test. As students studied, they engaged in a think-aloud protocol where they verbalized the mental processes they utilized as they prepared for the history test. Students were videotaped as they studied. Immediately following each observation, students were interviewed using the interview protocol listed in Table 6. Each interview was audiotaped. Videotapes and interviews were transcribed verbatim. After transcribing videotapes and interviews, students’ self-regulatory behaviors were coded and categorized into the 15 categories of self-regulated learning strategies listed in Table 5 that is on page 140 in chapter 3. No additional codes were identified during the data analysis process. The 15
categories of self-regulated learning strategies have been clustered into three categories: self-regulation process strategies, rehearsal strategies, and social-assistance strategies. Data are presented in these clusters.

The researcher developed a detailed scoring guide called the Self-Regulation Learning Strategies Continuum of Development (SRLSCD) that is located in Appendix B. Observation and interview data were evaluated using the SRLSCD and are presented in a series of tables that indicate to what extent students used and explained the various self-regulation learning strategies during the observations and interviews. In general, the presence of a (0) indicates a particular learning strategy was not used or mentioned; a (✓-) indicates the student attempted the strategy but showed confusion, was not able to perform the strategy, or the student mentioned the strategy but failed to describe how a strategy was performed; a (√) indicates students applied parts of the strategy or described it with vague comments; and a (√+) indicates that it was used successfully or was described with specific statements. Following each table, qualitative descriptions are presented that illuminate the elements of self-regulation learning strategies revealed in transcripts. Data are presented such that the three students with learning disabilities, Student 1, Student 3, and Student 5 are listed first followed by the general education students, Student 2 and Student 4.

**Self-Regulation Learning Strategy Interview and Observation Data**

The data in this cluster include seven self-regulatory processes: self-evaluation, organizing and transforming information, goal-setting, seeking information, monitoring progress, environmental structuring, and self-consequencing.
The first element of self-regulation regulation identified in transcripts was self-evaluation. Zimmerman and Pons (1986) defined self-evaluation as statements indicating student-initiated evaluation of the quality of progress of their work. Student transcriptions were coded for evidence of self-evaluation. These results are listed in Table 20. Transcripts reveal that as students learned self-regulation strategies, they became more adept at assessing their progress toward study goals.

During the first round of interviews, the students made vague self-evaluation remarks. For example, when asked, how have you done on your history tests in the past, Student 3 responded by saying, “sort of successful. Like the scores tell me how good I’ve been doing and how I’ve been studying.” When this student was asked about what makes him feel successful, he stated that, “When . . . I think when I try to do. When I’m working on some things.” At first, this student evaluated himself based on whether he tried or not and how he did on the test overall.

Table 20
Evidence of Self-Evaluation Behaviors and Statements in Interviews and Observations of Focus Students

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre Obs.</th>
<th>Pre Int.</th>
<th>During #1 Obs.</th>
<th>During #1 Int.</th>
<th>During #2 Obs.</th>
<th>During #2 Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>√-</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√+</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>0</td>
<td>√+</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>√</td>
<td>√</td>
<td>√+</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>√</td>
<td>√+</td>
<td>√+</td>
<td>√+</td>
<td>√+</td>
</tr>
</tbody>
</table>

As he learned about self-regulatory processes, Student 3 made self-evaluation remarks that were more specific and centered on use of strategies. During the second interview when he was asked self-evaluation questions about how he had performed on history tests, he responded, “I (knew I) wasn’t going to get a good grade. I only
got one day of studying. I think the flashcards didn’t really help. Half an hour is best for me.” Student 3 made more specific self-evaluation comments that included effectiveness of the study strategies he used, the amount of time he studied, and commented on the overall effectiveness of his studying process.

Student 3 continued to make self-evaluation remarks that reviewed studying processes and outcomes, during the last interview. When asked self-evaluation questions, the third time he stated, “I did better on knowing what to do and if I didn’t know I could just look into my study guide and check and then when I get home . . . I go over it.” When asked why he got a “C” on the test and not an “F” he said, “I worked better and worked through and pushed it better.” When asked why he did not get an “A,” he hypothesized, “Because maybe I did not practice enough.”

Organizing and transforming data was the second self-regulation strategy identified in observation and interview transcripts. Organizing and transforming data is defined as student-initiated overt or covert rearrangement of instructional materials to improve learning (Zimmerman & Pons, 1986). Table 21 contains the presence and depth of students’ organizing and transforming behaviors and comments.

Table 21
Evidence of Organizing and Transforming Behaviors and Statements in Interviews and Observations of Focus Students

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre Obs.</th>
<th>Pre Int.</th>
<th>During #1 Obs.</th>
<th>During #1 Int.</th>
<th>During #2 Obs.</th>
<th>During #2 Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>√</td>
<td>0</td>
<td>√</td>
<td>√</td>
<td>√+</td>
<td>√-</td>
</tr>
<tr>
<td>3</td>
<td>√</td>
<td>√-</td>
<td>√-</td>
<td>√</td>
<td>√+</td>
<td>√-</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>√-</td>
<td>√+</td>
<td>√</td>
<td>0</td>
<td>√+</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>√-</td>
<td>√</td>
<td>√</td>
<td>0</td>
<td>√-</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>√-</td>
<td>0</td>
<td>√</td>
<td>√+</td>
<td>√+</td>
</tr>
</tbody>
</table>
During preintervention interviews, all students mentioned the need to transform information; however, several students were unable to clearly communicate a procedure for data transformation. In addition, during observations, students stated what they should do but failed to engage in those practices. For example, while she was studying Student 2 stated, “I like to go back and write stuff down.” She never did write anything down during that observation. In response to the interview question, “Are there other strategies you want to use?” Student 3 said, “the vocabulary . . . put the picture, then the word, then anything and then you explain it.” Although this student explained a transformation procedure, it required several probing questions to get him to articulate his response. This students’ inability to explain himself suggests that he had partial knowledge of what he could do but did not know how to employ those techniques. His partial understanding was further demonstrated during the observation when he studied using flashcards his mother had made for him. His mother had transformed and organized the data for him, so it is unclear whether he knew how to perform the task himself.

After the first round of self-regulation study-strategy lessons, all students used data organization and transformation techniques during their observations. Although students knew they needed to transform data, they were not sure what information should be studied or how to organize the information to aide in recall and rehearsing. For example, Student 1 made flashcards during the observation. He used the following process to make flashcards: (a) he looked for highlighted words in the textbook, (b) he wrote the words and definitions on the same side of a Post-it note,
and (c) he added words and definitions onto the Post-it note until there was no more room.

This student had access to a study guide that listed the key vocabulary words to study but failed to take it out as he was making his flashcards. He chose vocabulary words based on the fact they were highlighted in the text. He placed the words and the definitions on the same side of the Post-it, which would make rehearsing the definitions more difficult because the definitions were in plain sight. Finally, he placed numerous words on each Post-it. This practice interfered with his ability to focus on one word at a time and impeded his ability to sort flashcards into piles he knew from those he did not know. Although this student made an attempt to organize information and transform data, he was not clear about which data to transform and struggled to implement a procedure for transforming data that would be an effective rehearsal tool.

Student 1 organized and transformed data more effectively, during the last observation. The first improvement he made was to make flashcards of the words on the study guide instead of randomly choosing highlighted words from the textbook. Second, he placed one word on a card. In addition, he wrote the word on one side, and on the flip side he wrote the definition and a mnemonic. For example, he was studying the word Zoroastrianism. He used the chunk of the word, “rastri” and broke it into two words, rat and stream. Then he said he would think of a religious rat worshiping the god of water, Neptune. He then drew an image of a rat praying at a stream. He said he knew the “Zoro” part of the word and only needed help remembering the middle part. The rat and stream elements of the mnemonic gave
him a picture to remember and a connection to his prior knowledge. When he was asked about Zoroastrianism on the test, he had the correct answer.

The evolution of strategy use Student 1 represents the type of change most of the focus-group students exhibited as they experienced the self-regulation study-strategies instructional program. They were able to identify which data to transform and to transform them in ways that aided in rehearsal and comprehension.

Goal-setting and planning was another self-regulation strategy investigated in this study. To identify evidence of goal-setting and planning, transcripts were coded for statements and behavior that showed situations where students set educational goals or subgoals, planned sequencing, time, and completion activities related to goals. Results of observation and interview data are recorded in Table 22.

<table>
<thead>
<tr>
<th>Table 22</th>
<th>Evidence of Goal Setting and Planning Behaviors and Statements in Interviews and Observations of Focus Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Pre</td>
</tr>
<tr>
<td>1</td>
<td>( \checkmark )</td>
</tr>
<tr>
<td>3</td>
<td>( \checkmark )</td>
</tr>
<tr>
<td>5</td>
<td>( \checkmark )</td>
</tr>
<tr>
<td>2</td>
<td>( \checkmark )</td>
</tr>
<tr>
<td>4</td>
<td>( \checkmark )</td>
</tr>
</tbody>
</table>

During the first observation and interview cycle, most students engaged in portions of the goal setting and planning process. Students generally described outcome goals that focused on the grade they would like to earn. Planning usually involved establishing an amount of time to study. Goal setting and planning did not include explicit statements of what they would learn or focus on during a study session. For example, during the interview Student 2 stated her goal was, “to study a
lot and to get a good grade on my test.” When prompted further about her goal, she stated, she wanted to “hopefully get a B.” When she was asked how she decides how long to study, she said, “Probably about 20 minutes.” Student 3 responded to the same questions by stating, “I think my goal is to get at least C.” When asked how long he plans to study, he said, “I don’t know . . . until I get kind of bored and then I need to do my other homework.” These responses suggest that students are not clear on what they want to accomplish during a study session and are not sure how to go about accomplishing the goals they do set. The type of statements made by Student 2 and Student 3 are typical of the goal setting and planning statement made by students prior to the self-regulation study-strategies instructional program.

Prior to each test, students were given a study guide that outlined key vocabulary words and specific learning objectives. During the first observation, three out of the five focus group students identified learning the highlighted words in the history book as the learning goal for the observation and neglected to refer to their study guide. During Student 4’s observation, he stated, “So, it’s highlighted (in the textbook), so it’s probably going to be on the test.” Student 5 stated during her observation, “I notice that when we have a test, I mostly see the highlighted words, so I want to make sure I know what they are, so I can answer them on the test.” Students were not able to identify clear learning objectives when they studied. Student 2 was the only student in the focus group to use the study guide to establish goals and plan for the study session. She looked at the study guide, identified a section of information she would work on, and then used her textbook to review information on the topics she would study.
After the first set of self-regulation learning-strategy lessons were taught, some students made more precise goals and developed more thorough plans for meeting goals. For example, when Student 4 was asked what he was going to do during the second observation, he stated, “I’m going to preview this with my flashcards . . . I’m going to use the concept map . . . I’m going to do chunks first . . . I’m going to circle the one I do remember and the ones I don’t remember.” This student used his study guide to identify which topics to study. He identified the topics he did not know well. He then used three resources to aide in rehearsing: his textbook, a study guide with answers on it, and a concept map. He decided he would focus on one chunk of the study guide instead of trying to study the whole study guide at once. When asked about this during the interview he said, “since this is a long chapter, I wanted to take short time, so I would remember it more instead of taking a long time and trying to remember a whole lot over a long period of time.” When asked about how much time he should study, he said, “30 minutes like I did today.” This student showed that he could identify specific learning goals, identify techniques to use to rehearse and learn those goals, and establish an appropriate amount of time to study.

Not all students were able to make this type of progress even by the third observation and interview cycle. Student 3 and Student 5 struggled in applying the goal-setting and planning stage of the self-regulation study strategy. During the last observation, it became evident that Student 5 was not ready to set specific learning goals, time goals, or establish a plan for meeting learning goals. She did use the study guide to focus her studying; however, as she was reviewing and identifying
which items that she knew and did not know, it was evident she did not know how to
determine whether she knew the information or not. She thought if she read about it
and it was familiar to her that meant she knew it for the test. Her inability to self-
evaluate prevented her from being able to establish goals and set a plan. She thought
she knew more than she did.

Student 3 also had difficulty establishing goals and making a learning plan; however, he did make some progress. This progress was evident when he explained
his usual study plan. He stated, “So every day I get, I usually go on my study guide
and I ask the questions using the reflection sheet by doing stuff in my head and
pictures in my head whatever I can think is the answer.” He knew to use the study
guide to focus his learning efforts, he chunked his study time into 20- to 30-minute
intervals over several days, and he knew that making flash cards with visual cues
helped him remember the answers to questions. Although he did make some
improvement in the goal setting and planning, he was not able to articulate specific
learning goals and establish a clear plan to meet those goals.

Students 3 and 5 have diagnosed learning disabilities that include profound
short-term memory difficulties. It was difficult for them to recall information from
the lessons in class. Transcripts from the interviews and the observations suggest that
both of these students struggled to recall the information from history lessons and the
content from the self-regulation study-strategy lessons.

Another area of self-regulation investigated included seeking information.
Zimmerman and Martinez-Pons (1986) defined seeking information as student-
initiated efforts to secure further task information from nonsocial sources when
undertaking an assignment. Evidence of seeking information included using reference books, webpages, and other resources to gather additional information about focus areas. Table 23 displays the results of the students who utilized and discussed information seeking during their interviews and observations.

Student 1, Student 3, and Student 4 mentioned using resources to gather information when studying. Student 4 was the only student who used a reference book when he was studying. As he studied, Student 4 consistently focused on making sure he understood what he was studying. He would get up and consult a dictionary, textbooks, or his notes if he was unclear. During the first observation, this student focus mostly on understanding the meaning of words. He looked up the words in a dictionary and the textbook glossary. At the second observation, he quizzed himself using the study guide. When he realized he did not fully understand all the elements of the Warring States Period in Chinese history, he decided he needed more information and said, “That’s why I always keep the book near me. In case I forget stuff that’s not on the study guide.” During the third observation, he continued to pull resources to enhance his understanding of the information he studied. While reviewing a concept map of Athens and Sparta, he pulled out his notes so he could

<table>
<thead>
<tr>
<th>Student</th>
<th>Obs.</th>
<th>Int.</th>
<th>During #1 Obs.</th>
<th>Int.</th>
<th>During #2 Obs.</th>
<th>Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>√</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>√</td>
<td>-</td>
<td>0</td>
<td>√-</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√+</td>
<td>√</td>
<td>√+</td>
</tr>
</tbody>
</table>

Table 23
Evidence of Seeking Information Behaviors and Statements in Interviews and Observations of Focus Students
make additional connections and add new labels to the work he had done in class.

Even though Student 4 consistently gathered information to support his learning, not all students improved in this area. Two focus group students failed to mention or engage in seeking information during any of the interviews and observations.

Keeping records and monitoring progress is an essential part of self-regulation study strategy. This element of self-regulation takes place when students assess and keep track of their progress toward goals (Zimmerman & Martinez-Pons, 1986). Table 24 displays the results of keeping records and monitoring from student transcripts.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>√-</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>√</td>
<td>0</td>
<td>√</td>
<td>√-</td>
<td>√</td>
<td>√-</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>√-</td>
<td>√-</td>
<td>√-</td>
<td>√-</td>
<td>√-</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>√-</td>
<td>√</td>
<td>√-</td>
<td>√</td>
<td>√+</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>√-</td>
<td>√</td>
<td>√</td>
<td>√+</td>
<td>√</td>
</tr>
</tbody>
</table>

Few students monitored their progress, during the first observation cycle. Student 3 utilized a rudimentary form of monitoring and keeping records. This student used flashcards as he studied and sorted them into piles he knew and piles he did not know. During the interviews, three students mentioned using a cursory record keeping and monitoring process. For example, when asked how they know when they are finished studying, Student 4 replied, “I keep turning the pages back and forth and yeah, I know this stuff and yeah.” Student 5 stated, “If I get everything. If I get what I’m reading, I’ll just say okay. I’ll study tomorrow. If I study more than
like an hour or something, I think that’s enough for me.” Student 1 said, “I just like know it. I know everything. I don’t need to do anything.” Student 3 replied, “I just do it. . . I stop whenever I want to.” None of these students had defined specific learning objectives, so they were not clear on what they needed to know. During the observations, they all read textbooks and used the memory of reading the text as the indicator of “knowing” the information. None of the students utilized a specific process for keeping records of progress. When asked how he keeps track of what he needs to study, Student 3 replied, “I don’t know how I keep track.” Student 1 said, “I would usually . . . I would mostly try to stick it in my brain. Like let’s take this in brain.”

Students utilized a classroom tool to help them monitor progress, during the second observation and interview cycle. Students utilized a form called a Study Reflection Sheet (SRS) to help them monitor progress as they studied. (See Appendix E for a copy of the Study Reflection Sheet.) This sheet helped students keep track of what they needed to study and helped them plan their study sessions.

For example during the second observation, Student 3 said,

I’m going to use the yellow paper (SRS) to figure out each day what types of questions are really hard for me and which ones are really easy. Each day I will study the ones that are hard and come back to the easy ones.

During the observation, Student 2 used the SRS to begin the studying process. She was able to identify which items she knew and focused on reviewing the items she did not know; however, this student did not demonstrate comprehension of the concept of keeping records and monitoring in her interview. When asked about how she monitors her progress during the interview, Student 2 said, “When I already know
something I’ll put it in flashcards like I said and the stuff I didn’t know, them I’ll make them and then I’ll know them.” This response did not demonstrate that she had a process for keeping track of what she needed to review. When she was asked how she knows she has studied enough for a test she replied, “When I feel tired.” When prompted further about what else tells her she knows she has studied enough she said, “My brain feels like I know it and I’m ready . . . to settle down.”

During the third interview and observation cycle, some students had shown improvement in how they monitored progress. In response to the question, how do you keep track of what you need to study, Student 2 responded, “I like to check it off on my reflection sheet and that helps.” Student 3 said, “I am doing more things. I’m checking off and keeping track. I keep track of that on the yellow piece of paper . . . on the reflection sheet.” Student 4 stated, “Well, now that we have a yellow sheet (SRS), I’m going to probably keep numbering it. When we stop getting them, I’m going to number it myself on a white sheet of paper.” Student 5 replied, “The reflection sheet.” Students were able to comprehend the benefit of using the reflection sheet to keep track of what they need to study and monitor progress.

Even though most students improved in this area, one student did not. Student 1 failed to make the connection between the SRS and using it to monitor progress. When asked how he keeps track of what he needs to study, he stated, “Usually, I try to put it in my binder so I am organized, so I don’t lose anything like some people.” He defined keeping track as keeping his materials organized. When prompted further about how he knows what he should study, he replied, “The study guide gives me like, lots of information.” This student knew what to study, so he could make
studying goals. He knew what resources to use to focus he studying, but he did not understand the need to monitor progress toward knowing the information on the study guide.

A fundamental aspect of preparing to study involves environmental structuring. This aspect of self-regulation refers to student-initiated efforts to create a learning environment that supports learning. Table 25 displays the results of environmental structuring comments and behaviors. There were very few changes that transpired throughout the study in this area. Students were not able to create their own environment to study during the observations. They studied in classrooms when no other students were around.

<table>
<thead>
<tr>
<th>Table 25</th>
<th>Evidence of Environmental Structuring Behaviors and Statements in Interviews and Observations of Focus Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Pre</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

During the first interview, two students did not make comments about environmental structuring. On subsequent interviews, all students were able to define specific study environments that supported their learning. In general, all students stated they liked to study in a quiet place in their house away from distractions such as siblings and the television. Students usually studied at the kitchen table or in their bedrooms.
Self-consequencing was another self-regulation study behavior investigated in this study. Self-consequencing was identified as statements or behaviors that consist of the creation of rewards or punishment for success or failure (Zimmerman & Martinez-Pons, 1986). Table 26 shows that none of the students engaged in this aspect of self-regulation during any of the observations. In addition, none of the students mentioned the use of self-consequencing during any of the interviews. This aspect of self-regulation was not included as part of the self-regulation study-strategies instructional program.

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre Obs.</th>
<th>Int.</th>
<th>During #1 Obs.</th>
<th>Int.</th>
<th>During #2 Obs.</th>
<th>Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The preceding information presented the results of self-regulatory processes data cluster identified in focus group students’ observations and interviews. The seeking social assistance strategies will be the next data group presented.

**Seeking Social Assistance Interview and Observation Data**

This cluster of data includes three sections: seeking social assistance from peers, seeking social assistance from teachers, and seeking social assistance from adults. Interview and observation transcripts were coded for the presence of student-initiated efforts to solicit help from peers. Table 27 displays the results of whether students use this self-regulation behavior. Student 1, Student 3, and Student 4 failed to mention using peers for assistance during any interview or observation. This result
is consistent with Student 1 Asperger’s Syndrome diagnosis. Student 3 has a learning
disability and is unsure of himself around peers. Student 4 uses an array of
independent strategies to help himself when studying. When asked what he does
when he is not understanding or remembering, he said, “I read my notes . . . and I use
mnemonics because you relate to stuff and that makes you remember it.” Student 2
and Student 5 are extremely social and readily acknowledged the use of peers to help
them with their studies.

Student 2 changed how she perceived peer assistance. At first she thought of
peers as a resource to gain answers. For example, when she was asked what was the
best way to study about China’s trading system, she replied, “You could read about it
or talk to someone who knows and have them explain it to you.” By the third
observation and interview cycle, she described peer assistance as reciprocal
interactions where she could contribute to her partner’s learning by working together.
When asked about how she gets herself to know the information on the study guide
she stated, “I would go over it with my buddy and we’d try to talk it out and like so
we keep on going over it. So we know we can get it (know it) off the top of our
head.”

| Table 27 |
| Evidence of Seeking Social Assistance from Peer Behaviors and Statements in Interviews and Observations of Focus Students |

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>✓</td>
<td>0</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Student transcripts also were coded for comments or behaviors indicating student-initiated effort to seek assistance from teachers. The coding results for this behavior are displayed in Table 28. The data show that the general education students, Student 2 and Student 4, never mentioned using a teacher as a way of obtaining assistance with understanding learning material. The three special education students, Student 1, Student 3, and Student 5, all solicited teacher assistance during at least one observation and mentioned going to the teacher for assistance during the interviews more than once.

Table 28

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre Obs.</th>
<th>Pre Int.</th>
<th>During #1 Obs.</th>
<th>During #1 Int.</th>
<th>During #2 Obs.</th>
<th>During #2 Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>√</td>
<td>√</td>
<td>0</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Seeking assistance from adults was the last type of social assistance identified in transcripts. This self-regulation behavior was identified in transcripts when students made statements about getting help or guidance from a parent or guardian.

Table 29 displays the results for the presence of this type of self-regulation behavior. During the interviews, the most frequent response students gave was that they obtain help from an adult when they do not understand something. Student 5 was the only student who mentioned that she sometimes studied with a parent. All the other students said they usually studied alone.
Table 29
Evidence of Seeking Social Assistance from Adults Behaviors and Statements in Interviews and Observations of Focus Students

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>3</td>
<td>√</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>0</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The preceding information presented the results of the seeking social assistance data cluster identified in focus group students’ observations and interviews. The next data group presented is the rehearsing and memorization strategies data group.

**Rehearsing and Memorization Interview and Observation Data**

Rehearsing and memorizing strategies include three categories of data: general rehearsal strategies, the use of study tools such as textbooks and notes, and strategies initiated by others. Some of the data in the general rehearsing and memorization strategies overlap with the textbook reading and reading notes data. The first category of information identified in transcripts is general rehearsing and memorizing techniques. Behaviors or statements were labeled as a rehearsing or memorizing technique when students made efforts to memorize material using overt or covert practice (Zimmerman & Martinez-Pons, 1986). Table 30 displays the results of students engaging in or describing rehearsing and memorizing during interviews and observations.
During the first set of interviews and observations, all students attempted rehearsal and memorization techniques. The most common strategy used during the first observation was to read the textbook. Each student approached the task of reading the textbook in a different way. For example, Student 1 read the highlighted words in the textbook and then wrote several words without the definitions on a Post-it note. He then silently read the section around the highlighted word without writing any notes or making any verbalizations. When asked about how he uses the cards, he replied, “Mainly I just look at my study card and then I’ll look at the whole chapter like a few times.” Student 5 approached the reading of the textbook in a similar manner. She read only the highlighted words and the surrounding text. She skipped around the textbook. She did not write any notes, summarize verbally, or quiz herself. She also said she goes back and reads the text over and over. During Student 2’s observation, she said that she reads over a section of the textbook that went along with the study guide questions three or four times. Student 4 approached the reading of the textbook differently than the first two students. He read a section of text and then summarized it. When he came across an idea or a concept in the reading he did not understand, he gathered resources such as a dictionary or his notebook to enhance
his comprehension. This student manipulated information after reading it so that he could retrieve it at a later time.

Student 3 was the only student who used flashcards as a rehearsal strategy during the first observation. He did not appear to know how to use the flashcards. He would read the questions and then verbally answer them without checking the answer. At times, he would read the question and then read the answer without trying to recall the answer on his own. He would place flashcards into a stack of ones he knew and did not know. Some of his answers did not make sense. He placed cards that he could not answer correctly on his own into the “know it” pile. He stated that he uses the flashcards over and over until his mother makes him stop.

Students elaborated on previous rehearsal and memorization strategies and employed new techniques. For example, Student 1 stated during the second observation, “Okay I just finished my first flashcards. When I see that it reminds me of the “Aristocats” movie. So aristocrats were just officials.” Student 1 wrote descriptions on the back of his flashcards. As he rehearsed the flashcards, he said the word, thought of a mnemonic, and then said the definition.

Although some students progressed, some students continued to struggle. For example, Student 3 elaborated his rehearsal strategy when he said, “I usually just do this and close my eyes and answer each and every question.” He proceeded to look at his flashcards and determine if he could answer questions before reading the answers. This technique was an improvement over his initial attempts to use flashcards. Previously, he would just read the answer without trying to answer questions on his own. Despite some improvement, Student 3 continued to struggle with answering the
questions and was not sure what he could do to help himself recall information.

Student 5 also continued to struggle with this part of the process. During her second observation, she did not read out of the textbook, she read off of the study guide. She was not able to recall information in detail and was not sure how to determine whether she knew something or not. As stated previously, Student 3 and Student 5 have profound short-term memory difficulties, which makes this element of self-regulation a challenge.

The last set of observations revealed students using additional memorization and rehearsal techniques. Student 4 used numerous techniques while reviewing for his test. He used a map in the textbook and covered it up. He visualized a map placed on the top of his hand and then lifted his hand to confirm that he was able to name places on the map correctly. In addition, he pulled out his concept maps and reviewed the links and nodes on the maps. He also added new links and nodes as he reviewed. Additionally, he made up mnemonics to help him remember some of the vocabulary words. For example, he connected the word Zoroastrian to Persian religion by thinking, “It is a religion because it ends in iansism. There is an A right here (at the beginning of astrian) I think of first and at the end of Persia.” Student 4 used the concept map as the main studying technique during the third observation.

Student 3 did not use concept maps as a rehearsal strategy. He used visualization strategies instead. At one point in the observation, he read a flashcard, closed his eyes, and then explained what he could see in his mind’s eye. When describing how early Greeks made their living he closed his eyes and said, “I see a guy fishing and catching tons of fish. I see people in a boat selling things and getting
other things . . . I got fishing and trading.” During the first observations, almost all students simply read out of the textbook or used flashcards as their rehearsal strategy. By the third observation, the focus-group students added mnemonics, visualizations, and concept maps to their rehearsal and memorization techniques.

Another self-regulation behavior that was identified in the transcripts was reviewing tests. Table 31 shows that no students utilized or mentioned this strategy during any of the observations or interviews. Students at the school where this study took place were not allowed to take tests home and did not have access to them once they had looked at test results. Reviewing tests was not one of the self-regulation study strategies introduced in the instructional program.

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre-Obs</th>
<th>Int.</th>
<th>During #1 Obs.</th>
<th>During #1 Int.</th>
<th>During #2 Obs.</th>
<th>During #2 Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Reviewing notes was another self-regulation study strategy that was identified in observation and interview transcripts. Students utilized a variety of notes as they studied which included outlines from class lecture, timelines, webs from class lessons, concept maps, study guide sheets with answers, and student-generated notes from videos. Table 32 illustrates the results of this presence of this self-regulation behavior in observations and interviews.
Table 32
Evidence of Reviewing Notes Behaviors and Statements in Interviews and Observations of Focus Students

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre Obs.</th>
<th>Pre Int.</th>
<th>During #1 Obs.</th>
<th>During #1 Int.</th>
<th>During #2 Obs.</th>
<th>During #2 Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>2</td>
<td>√-</td>
<td>√-</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>√+</td>
<td>√+</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>

During the preintervention observations, Student 2 was the only student who used notes as she studied. She was the only student who mentioned reviewing notes as a study technique during the first interview; however, she was not able to explain how she used her notes to study. During the observations, the other students read the textbook or reviewed flashcards and neglected to use their notes.

After the first round of self-regulation instruction, all the students described using notes as a studying technique during their interviews. Student 5 reviewed her study guide during her observation. She mentioned that she did not use the study guide on previous tests and that she was going to do more than read the textbook. When asked about what techniques she would use she said, “Since I know what is on the test, I will just study those (the study guide), like the vocabulary.” During the observation, Student 4 added using concept maps as part of his studying process.

Almost all of the students included reviewing notes as part of their studying process, during the last round of interviews and observations. Students used a variety of notes as part of their studying process: concept maps, study guides, their history notebooks, and webs. By the third observation, students were able to identify which type of notes would help them review material on the study guide most effectively.
For example when asked how he has changed his approach to studying, Student 4 said, “Well I’m studying concept maps and usually . . . mapping, and stuff and mnemonics, but I wouldn’t really use the web activity or the flash cards or read. I would read my notes sometimes.” This student had experimented with a variety of resources and determined which strategies work best for him.

Reviewing the textbook was the last self-regulation strategy identified in interview and observation transcripts. Table 33 displays the results of students who used or referred to reviewing the textbook during interviews and observations. The way students used the textbook changed after learning about self-regulation study strategies. At first, all but one student used the textbook as the primary means of studying for the history test. Students 1, 4, and 5 reviewed the highlighted words in the text as the main focus of their studying. Student 2 was the only student who used the study guide to help her determine which parts of the text she should read.

Table 33
Evidence of Reviewing the Textbook Behaviors and Statements in Interviews and Observations of Focus Students

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre Obs.</th>
<th>Int.</th>
<th>During #1 Obs.</th>
<th>Int.</th>
<th>During #2 Obs.</th>
<th>Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>√-</td>
<td>√-</td>
<td>√+</td>
<td>√</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>√-</td>
<td>√+</td>
<td>√</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>5</td>
<td>√-</td>
<td>√</td>
<td>√+</td>
<td>√</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>2</td>
<td>√</td>
<td>√</td>
<td>√+</td>
<td>√</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>4</td>
<td>√</td>
<td>√</td>
<td>√+</td>
<td>√</td>
<td>√+</td>
<td>√</td>
</tr>
</tbody>
</table>

All students used the textbook as they studied for their test, during the second observation; however, the way they used the textbook had evolved. Instead of searching for highlighted words to guide their reading, they used the study guide to help them establish a learning goal that helped them focus their reading. During the
observations, all five students read their study guides, identified the items they did not know, read about it in the textbook, and then made a flashcard of information or added notes to their study guides.

When the last observations took place, the textbook was no longer the primary study tool used by most students. Students began to integrate other reviewing strategies including flashcards, study guides, webs, outlines, and concept maps. During the final interviews, all students mentioned using the textbook as part of the reviewing process, but students named the textbook as just one of many strategies for reviewing material. It was used as a resource to add details to other study tools students used as they reviewed for their test.

The final learning strategy identified in transcripts was strategies initiated by other persons such as teachers or parents. Behaviors and statements were coded with this label when students stated they were doing what a parent, a peer, or teacher told them to do. Table 34 displays which students demonstrated this learning tactic. Student 3 and Student 5 were the only students to make statements indicating they were doing what another person had told them to do. Student 3 studied using flashcards his mother had made. When asked when he decides to begin studying for his tests, he stated, “Usually, when you (his teacher) tell me when.” When he was asked how he decides what strategies to use when studying he replied, “When you said that we should use flashcards to do our work.” During the last observation, Student 2 and Student 5 studied together. Student 5 took a very passive role and allowed the other student to tell her what to do. She would ask for help or would remain silent after being asked a question. Student 2 would offer assistance and tell
Student 5 what to do. Students 3 and Student 5 are diagnosed with having short-term memory difficulties and have additional learning disabilities. The data highlight situations where these two students allowed others to regulate their learning.

<table>
<thead>
<tr>
<th>Student</th>
<th>Pre Obs.</th>
<th>Int.</th>
<th>During #1 Obs.</th>
<th>Int.</th>
<th>During #2 Obs.</th>
<th>Int.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>√</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>0</td>
<td>√</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Research Question 5:** To what extent is there a change in students’ use of study tools after participating in a self-regulation learning strategies instructional program from pretreatment to posttreatment as measured by Test Preparation Reflection Forms?

**Research Subquestion 5:** To what extent is there a greater change in low-achieving students’ use of study tools compared with high-achieving and moderate-achieving students in treatment group?

During the course of the study, students filled out test preparation reflection form where they indicated which strategies they used, with whom they studied, and how long they studied. See Appendix G for a copy of this form. Table 35 displays the results of the number of minutes students studied and whether they studied with a partner or alone. The three achievement groups reported disparate amounts of study time. The medium-achieving group studied the fewest number of minutes for every test in the study. This group studied a little more than an hour for their tests. By the last test, they had increased the amount of time they studied by about 10 minutes.
The high-achieving group studied approximately 2 hours for each test. They had increased the amount of time they studied by approximately 20 minutes. The data show that the low-achieving group students reported studying approximately 2 ½ hours for each test. Closer inspection of the data revealed that two of the low-achieving students studied about 45 minutes for each test. Two of the low-achieving students studied more than 5 hours for each test. The amount of time the individual low-achieving student studied was consistent throughout the study.

Table 35
Mean Number of Minutes Studied and Presence of Study Partner Used by Students Pretreatment and Posttreatment

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Minutes Studied</th>
<th>Studied Alone</th>
<th>Studied with Partner</th>
<th>Minutes Studied</th>
<th>Studied Alone</th>
<th>Studied with Partner</th>
<th>Minutes Studied</th>
<th>Studied Alone</th>
<th>Studied with Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>16</td>
<td>112.56</td>
<td>5</td>
<td>11</td>
<td>120.56</td>
<td>2</td>
<td>14</td>
<td>131.31</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Med.</td>
<td>6</td>
<td>63.83</td>
<td>5</td>
<td>1</td>
<td>65.83</td>
<td>3</td>
<td>3</td>
<td>75.00</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Low</td>
<td>4</td>
<td>206.25</td>
<td>2</td>
<td>2</td>
<td>210.00</td>
<td>3</td>
<td>1</td>
<td>205.00</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>115.73</td>
<td>12</td>
<td>14</td>
<td>121.70</td>
<td>8</td>
<td>18</td>
<td>129.65</td>
<td>12</td>
<td>14</td>
</tr>
</tbody>
</table>

The treatment group students also recorded whether they studied alone or with a partner. These data revealed that a much greater proportion of high-achievement students chose to study with partners than the low- and medium-achievement students. As the study progressed, more of the medium- and low-achievement students chose to study with partners. The high- and medium-achievement students studied consistently with their mothers and the low-achievement student reported studying with peers. Only one low-achievement student reported studying with a parent.

In their test preparation reflection forms, treatment-group students indicated which study tools they used as they prepared for their tests. These data are reported
Study tools are broken up into the three categories based on three categories of a learning strategies framework developed by Weinstein and Mayer (1986). The learning strategies categories that were used in this study are rehearsal, elaboration, and organization. The data show that throughout the study, the high-achievement students utilized the most study tools and that the low-achievement students utilized the fewest number of study tools. As the study progressed, all groups increased the number of study tools they used to study for tests. The mean number of study tools reported by the high group increased by about 0.81. The mean number of study tools reported by the medium group increased between 0.50 and 1.0. The mean number of study tools reported by the low group increased by 1.0.

<table>
<thead>
<tr>
<th>Study Tools</th>
<th>Rehearsal Strategies</th>
<th>Elaboration Strategies</th>
<th>Organization Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAG</td>
<td>Book</td>
<td>Study Guide</td>
<td>Notes</td>
</tr>
<tr>
<td>Pretreat.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td>16</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>M</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>L</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>T</td>
<td>26</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>During</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td>16</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>M</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>L</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>T</td>
<td>26</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>During</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td>16</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>M</td>
<td>6</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>L</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>T</td>
<td>26</td>
<td>15</td>
<td>24</td>
</tr>
</tbody>
</table>

Note. Abbreviations: HAG-History Ach. Group, Flash-Flash cards, Mnem-Mnemonic, Sum-Summary

Students indicated which study tools they used as they studied for each test. Prior to and throughout the self-regulation learning strategies instructional program, students across all ability groups reported using the textbook and their notes most frequently. Prior to the self-regulation learning strategies instructional program, less
than half of the students used their study guides as a study tool. Nine students reported using concept maps, but these data are questionable because they were not taught to use concept maps prior to the self-regulation instructional program. After following up with students, they indicated that they thought of webs as concept maps.

After participating in the self-regulation learning strategies instructional program, several study tools were used more frequently. For the last test of the learning strategies instructional program, 24 out of 26 students reported using the study guide as a study tool and 16 out of 26 students reported using concept maps as a study tool. The number of students using flashcards fluctuated over the course of the study. Some students stated that they realized that using the concept maps was a more effective tool for rehearsing information, so they decided to stop making flashcards. There was little change in the number of students who quizzed themselves over the course of the investigation. This study technique was not taught explicitly in the self-regulation learning-strategies instructional program, and its absence may explain why the number of students who used this strategy did not change. Very few students reported using mnemonics as a study tool. At the beginning of the study, none of the students mentioned using them, and by the end of the study, four students reported using mnemonics.

Throughout the self-regulation learning strategies treatment, rehearsal strategies were used most frequently among all achievement levels. As the study progressed, the number of students who used elaboration strategies remained about the same and the number of students using organizational study tools increased. Prior to the beginning of the study, only 12 students used elaboration strategies, and 16
students used organization strategies. By the end of the study, 13 students used elaboration strategies, and 19 students used organization strategies. Closer inspection revealed that 75% of the high-achieving students and 40% of the medium- and low-achieving students used organization strategies.

**Merging of Quantitative and Qualitative Data**

The qualitative data confirmed the results of the quantitative data reported in the SMALSI. Students in the treatment group indicated they used statistically significant more time-management strategies than the comparison group students. In the observation and interview portions of the study, students described their use of time as they prepared for their tests. The self-regulation learning-strategies instructional program included lessons on time management and reflection on the effectiveness of study plans that invited students to reflect on how well they used their time to study.

Qualitative data provided insight beyond the information provided in the quantitative measures. In the area of time management, the lowest ability group reported spending the most time studying. In addition, they reported using the fewest study strategies. Almost all low-achievement-group students reported using the textbook as a study technique. When students were observed using the textbook, at first, the books were used with little planning or focus. They read sections of the book that had highlighted texts and did not establish a plan for what they were going to read and the purpose for reading the sections of text they did read. It is possible that the use of underdeveloped study techniques may contribute to a student’s low test scores even though they had studied for an average of 2 ½ hours.
On the SMALSI study strategies scale, there were no statistically significant results reported; however, the low- and medium-achieving students in the treatment reported higher mean differences from pretest to posttest. There were medium- and low-achieving students in the focus group. The five students in the focus group showed large changes that could not be identified on a quantitative scale. One item on the SMALSI asks students to indicate how often they use a plan for studying. Students had a study plan; however, for some students they were ineffective. For example, prior to the self-regulation instructional program, several students were unsure of how to use a study guide and studied only highlighted words in a textbook. Over the course of the instructional program, these students were able to use the study guide to identify what to study, which part of the textbook they should read, and which part of their notes they should review. The SMALSI data may have indicated that students had a plan, but the qualitative data showed that the plans were underdeveloped and ineffective.

Another insight revealed in the qualitative data was that some students were unsure of how to determine whether they know something or not. Several of the focus-group students also demonstrated that did not know how to rehearse information as they studied. They thought that reading the textbook silently or rereading notes would suffice in helping them remember the information for a test. They did not connect the ineffective use of strategies to their low-test scores.

Qualitative data also revealed insights beyond the focus of the study. For example, they revealed the anxiety students experienced as they prepared for and took their tests. One of the low-achievement students stated that even though she had
studied a long time for the test, that she hurried through the test and answered
questions randomly at times. She said that the test made her so anxious she did not
care about her grade. She just wanted to get it over with so she would not feel
nervous. This anxiety was not captured in either the SMALSI or the SESRLS.

Because this student and others demonstrated anxiety during observations or during
the interviews, the researcher was able to integrate some discussions in small groups
about how to deal with test anxiety. The quantitative data provided the foundation for
the information to understand students’ study techniques. The qualitative data
provided much more detail into the actual execution of learning plans as they were
happening, which provided a more accurate representation of how students
approached the task of studying.

**Summary**

This chapter contained the results of the five research questions that were the
basis of the present study. To answer the first two research questions, a two-way
analysis of variance was computed for the study-strategies, organization, time-
management, and test-taking strategies scales of the School Motivation and Learning
Strategies Inventory (SMALSI) and the Self-Efficacy for Self-Regulated Learning
Scale (SESRLS). The independent variables were treatment and comparison group
and high, medium, and low history achievement. History achievement was
determined on the basis of students’ average history test scores on three tests prior to
the study. A statistically significant group effect was reported on the time-
management scale and statistically significant main effects and interaction were
reported on the test-taking strategies scales of the SMALSI. No statistically
significant results were found on the SESRLS. To answer the third research question, an independent-samples $t$ test was computed on history test scores between high-achievement students in the comparison and treatment groups and between combined medium- and low-achievement students in the comparison and treatment groups. No statistically significant results were reported on this measure.

To answer the fourth research question, qualitative data were gathered from five focus group students who participated in three sets of observations followed by interviews. Interviews and observation were transcribed verbatim. The transcripts were coded and categorized into the 15 categories of self-regulated learning strategies behaviors listed in Table 5 that is located on page 140 in chapter 3. If a self-regulation behavior was present, further analysis was performed to indicate the level of proficiency displayed and described during the observations and interviews. In general, the presence of a (0) indicated a particular self-regulation behavior was not used or mentioned. A ($\sqrt{\text{-}}$) indicated the student attempted the strategy but the student showed confusion or was not able to perform the strategy. A ($\sqrt{\text{-}}$) also indicated that a student mentioned the strategy, but failed to describe it in detail. A ($\sqrt{\text{+}}$) indicated that students applied parts of the strategy or described it with a few vague comments. A ($\sqrt{\text{+}}$) indicates that a behavior was used with great success or it was described thoroughly and with specific detail. A detailed scoring guide called the Self-Regulation Learning Strategies Continuum of Development is available in Appendix B.

The qualitative data gathered from observations and interviews revealed that, to varying degrees, students learned to approach studying for tests in a systematic
way utilizing self-regulatory processes. In general, students were able to set both process and outcome goals, establish more specific plans to work toward their goals, they were able to monitor progress toward goals, and made more specific self-evaluative comments that were focused on the use of strategies.

Students also became more adept at using study tools such as their textbook and notes. In the area of seeking social assistance, students made little change. If students sought social assistance before the study began, they continued to do so with minor, if any adjustments. If students did not seek social assistance before the study, they continued to work independently throughout the study.

Qualitative data were gathered to answer the fifth research question. For one test prior to the investigation and two tests during the investigation, students filled out test preparation reflection forms on which they indicated with whom they studied, how long they studied, and which study tools they used as they studied. The data revealed that for most students, as they progressed in the learning-strategies instructional program, they studied longer and increased the number of study tools used as they studied. High-achieving students used organization study strategies more often than medium- and low-achieving students. The data showed that high-achieving students tended to study with an adult partner and that medium- and low-achieving students who studied with a partner tended to study with a peer.
CHAPTER V

SUMMARY OF FINDINGS, LIMITATIONS, DISCUSSION, IMPLICATIONS, RECOMMENDATIONS, AND AFTERWARD

The purpose of this study was to investigate the effects of a self-regulation learning-strategies instructional program on sixth-grade students’ academic achievement, use of self-regulation strategies, self-efficacy for self-regulated learning, and use of study tools. The instructional program took place over 8 weeks during students’ history class and was integrated with the traditional history curriculum. Throughout the instructional program, students learned how to apply cycles of self-regulation as they studied for their history tests. Students learned how to set goals, created strategic plans for learning, applied learning plans, monitored progress toward goals, and reflected on the effectiveness of strategic plans.

This study used a pretest-posttest quasi-experimental design. Learning was measured using quantitative and qualitative methods. Quantitative data included treatment-group and comparison-group history test scores and two instruments: an adjusted version of the School Motivation and Learning Strategies Inventory (SMALSI) and the Self-Efficacy for Self-Regulated Learning Scale (SESRLS). Qualitative data were gathered through structured interviews and observations with think-alouds from a representative sample of treatment-group students. In addition, treatment-group students filled out study diaries that detailed how long they studied, with whom they studied, and which study tools they used as they studied. Qualitative data were used to confirm and enhance data gathered through quantitative measures.

This chapter contains a summary of the findings, the limitations of the study, a
discussion of the results of the study, implications for future practice, and recommendations for future research in the area of self-regulation learning strategies instruction with middle-school children.

**Summary of Findings**

This section outlines the summary of the findings of the study. The quantitative results will be discussed followed by a discussion of the qualitative results. Quantitative data were analyzed on two levels. The first level was treatment and comparison groups, and the second level was history achievement level. Students in both classes were assigned to one of three history achievement groups based on their performance on three history tests that were taken prior to the beginning of the study. Students were placed in the high-achievement group if their history test average was 85% or higher. They were placed in the medium-achievement group if their test scores were between 70% and 84%. Students who earned average history test scores below 70% were put in the low-achievement group.

The first research question examined the effects of a self-regulation learning strategies instructional program on students’ use of learning strategies as measured by an adapted version of the School Motivation and Learning Strategies Inventory (SMALSI). Pretest and posttest results showed that both treatment- and comparison-group classes improved scores on posttests; however, some achievement groups within each group failed to show improvement. Pretreatment means on the four SMALSI scales used in this study (study strategies, organization skills, time management, and test-taking strategies) were higher for the treatment group;
however, the mean differences were not statistically significant. The treatment group made larger gains on the posttests than the comparison group.

Two-way analyses of variance (ANOVA) were calculated on posttreatment SMALSI scales and showed statistically significant differences between the two groups on the time-management and test-taking strategies scales. Students in the treatment group reported the use of time-management techniques more frequently than the comparison group students. The two-way ANOVA calculated on the test-taking strategies scale yielded statistically significant results on the main effects of group and history achievement and also a statistically significant interaction. The two-way ANOVA conducted on the study strategies and organization strategies scales of the SMALSI showed there were no statistically significant differences between the two groups.

The second research question examined how a self-regulation learning strategies instructional program would influence students’ self-efficacy scores as measured by the Self-Efficacy for Self-Regulated Learning Scale (SESRLS). Two-way ANOVA results indicated no statistically significant differences on the main effects for group or history achievement and no statistically significant interaction.

To answer the third research question, an independent-samples t test was conducted to examine differences on history test scores between the high-achieving students in the treatment and comparison groups. In addition, an independent-samples t test was computed to examine differences on history test scores between the combined medium- and low-achieving students in the treatment and comparison groups. The results from the independent-samples t tests indicated no statistically
significant differences between the two classes among the achievement groups.

The fourth research question investigated how five focus group students’ self-regulatory behavior changed after participating in a self-regulation learning strategies instructional program. Three of the focus students had learning disabilities, one had Attention Deficit Hyperactivity Disorder, and the last student had no diagnosed learning difficulties. Students were observed as they studied for history tests three times: once prior to the instructional program and twice during the implementation of the self-regulation learning strategies instructional program. Transcripts from each observation and interview were coded for evidence of 15 self-regulatory behaviors listed in Table 5 in chapter 3 and then given a rubric score that classified the level of application of the self-regulatory behaviors. Self-regulation behaviors were divided into three categories: self-regulatory process behaviors, seeking social assistance behaviors, and rehearsing and memorizing behaviors.

Observation and interview results showed that most students engaged in novice forms of self-regulatory processes prior to the instructional program and enhanced their use of self-regulation learning strategies as they experienced the self-regulation instruction. For example, students learned how use a study guide to set process goals that centered on reviewing small chunks of material. They learned to develop learning plans that centered on choosing appropriate rehearsal, organizing and elaboration strategies, which supported them as they reviewed learning material. Students learned several transforming techniques that included reading and making concept maps, creating mnemonics, and making flashcards with picture cues. In addition, students learned how to use a Study Reflection Sheet to help them monitor
progress toward goals of learning the information on their study guide. During the self-evaluation phase of the self-regulation learning cycle, students were able ascribe their success or failure to their use of effective or ineffective strategies.

The self-regulation learning strategies characterized as seeking social assistance revealed varying results. The data showed that the three special education students mentioned using the teacher or other adults as a means of getting support from in their studying. The two general education students never mentioned obtaining assistance from parents or their teacher in any of their observations or interviews. Three of the students never mentioned using peers to support their learning. Two of the students enjoyed studying with peers and asked them for assistance when they were having difficulty. These two students chose to study together during their last observation.

Data also were analyzed for memorizing and rehearsing strategies. Memorizing and rehearsal strategies consisted of three categories of behaviors: general rehearsal techniques, the use of study tools such as textbooks and notes, and strategies initiated by others. During the first set of observations and interviews, most focus-group students used the textbook as their primary means of rehearsing information. All but one student focused on rehearsing the highlighted words in the text. Most students tried to memorize highlighted words in isolation and did not understand the need to understand ideas and concepts listed on the study guide. Even though all students were given a study guide that detailed the information that would be on their test, none of the students used the study guide to determine which areas of the textbook to read.
After experiencing the self-regulation learning strategies instructional program, students used their textbooks more strategically and utilized a variety of rehearsal and memorization techniques. Students learned to use their study guides to identify which parts of the textbook to rehearse. As students progressed through the instructional program, they no longer relied on the textbook as their primary means of rehearsing information. They used concept maps, flashcards, outlines, and webs. Students understood the need to understand ideas and concepts on the study guide as their main learning objective. They no longer tried to memorize words in isolation.

The last self-regulation behavior identified in transcripts was the use of strategies initiated by others. Two students exhibited this behavior. During each observation and interview cycle, both of these students commented on using strategies a parent, a friend, or their teacher had told them to use. They did not describe making study decisions as an independent endeavor based on their own conclusions of which strategies and processes worked best for them. They relied on others to prescribe a study strategy protocol for them rather than using what they had learned in the self-regulation instruction.

The fifth research question investigated how the self-regulation learning strategies instructional program influence treatment group students’ use of study tools. To answer this question, after each history test treatment-group students filled out a study diary that detailed how much time they studied, with whom they studied, and which study tools they used as they studied. The pretreatment data revealed that, on average, the low-achieving students spent approximately 2 ½ hours studying. The medium-achieving students studied about an hour for each test. The high-achieving
students studied approximately 2 hours for each test. By the end of the study, the medium- and the high-achieving groups increased the amount time they studied by approximately 10 and 20 minutes, respectively. The amount time low-achieving students reported studying did not change drastically.

Students also indicated with whom they studied and the study tools they used as they studied. These data revealed that high-achieving students often studied with a partner and that partner was usually the student’s mother. Medium- and low-achieving students usually studied alone. The low-achieving students who chose to study with a partner, often studied with another low-achieving student. Study diary data also revealed that as the study progressed, students increased the number of study tools they used when studying. On average, the treatment group used approximately three study tools to study and had increased this number to approximately four study tools by the end of the study. These data also showed that throughout the study high-achieving students utilized more study tools than medium and low-achieving students.

Study tool data were categorized into one of three learning strategy categories: rehearsal, elaboration, and organization. Rehearsal strategies were used most frequently among all achievement levels. Throughout the study, the number of students who used elaboration remained stable and the number of students using organizational study tools increased. When considering achievement levels, it was determined that 75% of the high-achieving students and 40% of the medium- and low-achieving students used organization strategies.
Limitations

This study has several limitations. First, this study was a quasi-experimental study conducted at a public school utilizing a convenient sample consisting of two intact classes. The two classes in the study were different from one another in several ways. First, the treatment class included six special education students and one student with ADHD. The comparison group class had only one special education student. Because the treatment group included several students with learning disabilities, their learning disabilities may have interfered with their ability to apply self-regulation learning strategies. More than half of the treatment-group students were high-achieving students. Only a third of the comparison group was high achieving. This disparity may have masked the affects of the treatment because many of the high-achieving students utilized self-regulation learning strategies prior to the treatment. The treatment class included 2 students who participated in an after-school mandatory study hall, and the comparison group had 7 students in the study hall. Participating in a study hall may have influenced students’ scores on the quantitative measures. Small sample size and utilizing nonrandom groups limits generalization of the current results.

Qualitative research methods increase the threat of researcher bias and are a limitation in qualitative research studies. To reduce bias, the researcher engaged in rigorous and systematic data collection and data analysis. The researcher analyzed data manually and then engaged in an interrater reliability protocol. Two raters were trained how to code data and were each given 20% of the transcripts to code and
results were compared. Initially, the raters reached 92% consistency. When there were disagreements about coding, the raters and the researcher discussed coding until consensus was reached.

Another limitation of the study was the use of two self-report instruments and student study diaries. Research suggests that students have difficulty accurately reporting their behaviors (Boekaerts & Corno, 2005; Winters, Greene, & Costich, 2008). In the present study, students may have overestimated the number of minutes studied. In addition, at least one student demonstrated response acquiescence when he filled out the SMALSI. Also, some students may have responded to survey questions in a socially desirable manner. Because the researcher was their teacher, some students may have chosen survey responses that would please the researcher.

An additional limitation of this study is a likelihood of the Hawthorne Effect. Five treatment-group students participated as focus-group students and engaged in three observation and interview cycles. Two of the focus-group students stated that they had never studied as much as they had while participating in the focus group.

Finally, this study took place at a school in a suburban area in the San Francisco East Bay. The population sample is drawn from an upper-middle class, highly educated, professional community. Results of this study may not be generalized to populations that do not match this socioeconomic demographic.

**Discussion of Results**

This section focuses on the discussion of the findings of the study in relation to the research literature and each research question. First, the results of the quantitative questions are discussed. Then the qualitative questions are discussed.
The Impact of Self-Regulation Learning Strategies Instruction Program on the SMALSI-Adapted Version

Two-way analysis of variance (ANOVA) calculations were performed on four scales on the School Motivation and Learning Strategies Inventory (SMALSI): study strategies, organization strategies, time-management strategies, and test-taking strategies. Two-way ANOVA results revealed four statistically significant findings and 12 nonstatistically significant findings. There were nonstatistically significant findings for the main effects of group and history achievement level for the study strategies and organization strategies scales. This result could be attributed to a confounding variable that presented itself as the study began.

The school where the study was conducted initiated a mandatory study hall program that began at approximately the same time as the self-regulation learning-strategies instructional program. Seven of the comparison-group students were enrolled in the program. Two of them were medium-achieving students, and five of them were low-achieving students. There were also two the treatment-group students enrolled in the mandatory study hall program. Both of those students were medium-achieving students. Students participated in the mandatory study hall program because their grade point averages were below 2.0, they were not completing homework, and they were not communicating assignments with their parents. The mandatory study hall program required students to stay after school to work on homework and study for one hour and 15 minutes Mondays through Thursdays. In addition, students had to write assignments in their organizers and then have their parents and teachers sign their organizers. Finally, every Friday teachers filled out grade checks where they listed students’ current grade and missing assignments.
Students who failed to have signatures or were missing homework assignments had to stay after school for an hour on Fridays to make up missing work. Students were forced to study or suffer consequences.

Most of the students who participated in the mandatory study hall improved their grades in general and also improved their history test grades. More than half of the low-achieving, comparison-group students participated in the mandatory study hall. Their SMALSI results showed that they improved their study skills and organization strategies even though they did not receive explicit self-regulation instruction.

The mandatory study hall program integrated several learning behaviors Zimmerman and Pons (1986) identified as behaviors exhibited by successful students. They include self-evaluation, environmental structuring, time-management aspects of goal-setting, and self-consequencing. One major difference between the mandatory study hall program and the self-regulation instructional program was that the learning behaviors integrated in the study hall program were not self-regulated; they were imposed on the students. Numerous studies have identified environmental structuring, self-consequencing, time management, and self-evaluation as essential aspects of effective studying (Garavalia & Gredler, 2002; Stoeger & Ziegler, 2005; Zimmerman, 1998). The fact that seven of the comparison-group students and two of the treatment-group students participated in the mandatory study hall could explain why there were no statistically significant differences between the treatment- and comparison-group students on the study strategies and organization strategies scales.

A statistically significant main effect for group was found when the two-way
ANOVA was computed for the SMALSI time-management scale. This result suggests that students in the treatment group increased the frequency they used time-management strategies more than students in the comparison group. This result mirrors the results of other self-regulation studies that suggested teaching students to employ self-regulation learning strategies improved their time-management techniques (Schmitz & Wiese, 2006; Stoeger & Ziegler, 2005; Zimmerman, 1994).

Treatment-group students were taught time management on several levels. They were taught how to determine the amount of time needed to study and how to divide up that time over several days. In addition, they learned how to break up study time within a given study session. Finally, after students received the results from their tests, they were taught to evaluate the effectiveness of their time management based on their test results. Student evaluations became the basis for time-management plans for students’ subsequent test.

A two-way ANOVA was calculated for the SMALSI test-taking strategies scale. Statistically significant results were reported for the main effects of treatment and ability group, and statistically significant results also were reported for the interaction. The results of this test suggest that students in the treatment group increased the frequency with which they used test-taking strategies by 5 percentile points compared with the comparison group. In addition, students with low-history achievement demonstrated the greatest change in their use of test-taking strategies. Their mean difference was 7 points compared with medium and high mean differences of 2 percentile points. The last statistically significant interaction demonstrated that low-achieving students in the treatment group had larger gains on
the test-taking strategies portion of the SMALSI than low-achieving students in the comparison group. The treatment-group average gain was 18 points compared with the comparison-group gains of 2 points. These results support previous research that has suggested that low-achieving students have limited knowledge of test-preparation techniques and that when low-achieving students receive explicit instruction in self-regulation strategies, they respond well to instruction (Cleary et al., 2008; Cukras, 2006; Gettinger & Seibert, 2002; Kitsantas, 2002; Zimmerman & Martinez-Pons, 1986).

One element of the self-regulation instructional program included opportunities for students to reflect on their test-taking strategies. Students analyzed the types of questions they missed and tried to explain why they missed the various questions. They were taught to identify more effective strategies for choosing better answers on the test itself. In addition, they were taught to identify the characteristics of the questions they missed such as matching, multiple choice, and short answer. Students were taught to use study and rehearsal techniques that match the types of questions they would encounter on tests. This approach to test-taking strategies matches self-regulation processes utilized in a study developed by Cleary and Zimmerman (2004) and another study developed by Cleary, Platten, and Nelson (2008). In these studies, the researchers asked participants to engage in a microanalytic self-reflection process where students engaged in error analysis that were very similar to what the students. The Cleary et al. study found that, as students became more strategic in their thinking, they became more skilled in using specific tactics during learning. Students in the current study reported using test-taking strategies more frequently than students in the
comparison group. Teaching students to analyze performance on tests may have accounted for the statistical difference between the two groups.

This study adds a new dimension of information to previous self-regulation learning-strategies research. Previous self-regulation learning strategies research utilized high-school and university students. Students in the Cleary et al. (2008) study were high-achieving students and students in the Kitsantas (2002) and Zimmerman and Martinez-Pons (1986) study were university students. Their research was performed on older students who had experienced some level of academic success. The present study utilized a general population of middle-school students and separated them into high-, medium-, and low-achievement levels. This study assessed the impact of self-regulation learning strategies instruction as a general population of early adolescent students began their secondary schooling.

The data from this study suggest that self-regulation learning-strategies instruction improves middle-school students’ use of test-taking strategies of all achievement levels, and especially for low-achieving students. The instructional program in this study outlines an effective instructional technique that aides students in developing effective learning strategies. If low-achieving students are provided opportunities to learn self-regulation strategies earlier in their academic careers, as they progress in their education, they may increase motivation, experience more success in middle school, and avoid academic losses many middle-school students experience (Balfanz, 2009; Dembo & Eaton, 2000; Eccles & Roeser, 2009).
The Impact of Self-Regulation Learning Strategies Instruction on Students’ Self-Efficacy for Self-Regulated Learning

The second research question investigated the impact of self-regulation learning-strategies instruction on students’ self-efficacy. Research suggests that when students engage in self-regulated learning strategy instruction, students’ self-efficacy increases (Cleary et al., 2008; Schunk & Pajares, 2002; Stoeger & Ziegler, 2005). Self-efficacy data were gathered on the Self-Efficacy for Self-Regulated Learning Scale (SESRLS). Scores on the SESRLS range from 1 to 6. The data showed that students in both the treatment and control groups had relatively high scores on the Self-Efficacy for Self-Regulated Learning Scale (SESRLS) on the pre-assessment. The comparison group’s mean on the pre-assessment was 4.75 and the treatment group’s mean was 5.02. Because the pre-assessment scores were relatively high, it would have been challenging to find statistically significant differences between the two groups. The medium- and high-achieving students in both the treatment and comparison groups had means that were above 5.0.

The groups with the lowest scores on the SESRLS were the low-achieving groups in both the treatment and comparison group. The pre-assessment SESRLS averages were 4.44 for the treatment group and 3.58 for the comparison group. These groups had the greatest potential for change. The low-achieving comparison group reported greater changes on the SESRLS than the low-achieving treatment group students. The treatment group’s average on the postassessment was 5.13, and the comparison group’s average was 4.36. Even though the overall mean was higher for the treatment group, the comparison group showed a larger change in scores. The
comparison group’s SESRLS mean improved by .83 and the treatment group’s mean score improved by .63. The comparison group’s improved scores could be attributed to the fact that five of the low-achieving comparison-group students participated in a mandatory study hall that the school. Students in the mandatory study hall received weekly progress reports and were forced to make up missed assignments. Many of these students improved their overall grades, decreased missing assignments, and improved test scores. When students improve test scores, they also tend to improve self-efficacy (Shore & Shannon, 2007; Stoeger & Ziegler, 2005).

Another confounding variable that entered the study involved one of the low-achieving comparison-group students who were at risk for retention. The student’s mother and the researcher had a serious discussion about the student’s lack of effort, below-average skill level, and the possibility that he could be retained. After that conversation, the student began to study with his mother and improved his test scores. His mean history test scores were 64% prior to the study. His mean history test scores improved to 87% during the study. The time this student spent studying with his mother may have contributed to his improved test scores, which in turn may have improved his self-efficacy. A study conducted by Shores and Shannon (2007) found that as students’ test scores improve, their self-efficacy also improves.

The Impact of Self-Regulation Learning Strategies Instruction on Students’ History Test Scores

The third research question investigated the impact of the self-regulation learning strategies instruction on students’ history test scores. A study by Cleary et al. found that when students engaged in a self-regulation learning-strategies program their science test scores improved. Although treatment-group students’ average test
scores improved, the two-way ANOVA calculated on students’ average test scores yielded no statistically significant differences between the two classes.

Notwithstanding the lack of statistically significant differences between the two groups, some notable differences emerged. First, the high-achieving treatment group students’ average test scores improved by approximately two percentage points. Their pretreatment mean scores was 90.95%, and their posttreatment mean test scores was 92.62%. The high-achieving comparison-group students’ average test scores declined by approximately 0.5 percentage points. Their pretreatment mean test scores were 90.50%, and their posttreatment test scores were 89.93%. In addition, the medium-achieving treatment groups’ pretreatment test scores (76%) were approximately two percentage points lower than the comparison group’s mean test scores (78.66%). Their posttreatment mean test scores (86.14%) were approximately four points higher than the comparison group’s mean posttreatment test scores (82.14%). These results support the research results of numerous other researchers who have found that when students learn self-regulation learning strategies, they improve achievement test scores (Cleary et al., 2008; Cleary & Zimmerman, 2004; Fleming, 2002; Masui & De Corte, 2005; Stoeger & Ziegler, 2005).

Although the results from this study mirror the results in previous self-regulation studies, this study does distinguish itself from prior research. This study demonstrated the positive impact of integrating learning-strategies instruction with general course curriculum with middle-school students. Previous self-regulation learning strategy studies utilized population samples that were elementary-school, high-school, and university students (Cleary et al., Fleming, 2002; Masui & De Corte,
Another distinguishing characteristic of this study is that it integrated self-regulation instruction with standard-based history curriculum. Previous studies have taught self-regulation instruction during study skills intervention classes, in one-on-one coaching sessions, or in math and economics curriculum (Cleary & Zimmerman, 2004; Masui & De Corte, 2005; Stoeger & Ziegler, 2005).

The low-achieving treatment group’s average pretreatment test scores (56.79%) were slightly lower than the low-achieving comparison group’s average pretreatment test scores (57.65%). The low-achieving treatment group’s average posttreatment test scores (64.76%) improved by approximately 7%. The low-achieving comparison group’s posttreatment test scores were 69.58%. Their average scores improved by approximately 12%. This large change could be explained by the previously mentioned confounding variables: the mandatory study hall and the fear of retention of one of the low-achieving comparison-group students. The student who was at-risk of being retained in sixth grade improved his test scores from a 64% to an 87%, which is an improvement of 23%. The five of the eight students in the low-achieving comparison group attended the mandatory study hall. Their participation in the study hall may have influenced these students to increase the amount of time that they studied, which could explain why the low-achieving comparison group made such large improvements on their history tests.

Three of the four students in the low-achieving treatment group were diagnosed with learning disabilities. Two of the students were diagnosed with information processing problems and had difficulty with short-term memory. These
two students made very little improvement on their history test scores, and one student’s test scores declined by 16%. The third student with a learning disability has Autism and responded well to the self-regulation instruction. His scores improved by 20%. The self-regulation learning-strategies intervention did not address specifically the needs of students with information-processing and short-term memory difficulties. Cleary and Zimmerman (2004) stated that student differences across cognitive domains may limit the efficacy of self-regulation interventions. Specifically they stated that students with low intellectual potential and weak executive-functioning skills may have more difficulty planning, keeping track of performance processes, and effectively regulating their thoughts and behaviors. The student data that were available to the researcher did not report on the students’ intellectual potential or did it comment on their executive functioning skills. It is possible that students with learning disabilities may be better served with instructional strategies and methodologies beyond the scope of this investigation.

Another unique facet of this study is that data were clustered analyzed according to achievement level. Clustering data allowed the researcher to examine the effects of the treatment on students across a range of achievement levels. Previous studies have not clustered data according to achievement levels (Cleary et al., Fleming, 2002; Masui & De Corte, 2005; Stoeger & Ziegler, 2005). Understanding how self-regulation learning strategies impacts students from a variety of achievement levels allows researchers to identify effective elements of treatment and to investigate how to refine treatments to meet the needs of a broad range of students.
The fourth research question investigated the effects of a self-regulation learning strategies instructional program on students’ use of self-regulation strategies. To gather data for this question, five focus-group students were videotaped as they studied for a history test, and then immediately following the study session, they were interviewed. This took place three times, once prior to the beginning of the study and twice during the course of the study. Each observation and interview was transcribed and was coded for the presence of the 15 self-regulatory behaviors by the researcher and two other raters. Self-regulation learning behavior data were divided into three categories: self-regulatory processes, seeking social assistance, and rehearsal and memorizing strategies. After coding for the presence of self-regulatory behaviors, it was apparent to the researcher that coding for the presence of a self-regulatory behavior did not accurately portray the true nature of students’ use of self-regulation behaviors. Therefore, following the identification of the self-regulatory behaviors, the level of application of the behaviors was assessed using a rubric designed by the researcher.

Self-regulatory processes included seven specific behaviors: self-evaluation, organizing and transforming data, goal-setting, seeking information, monitoring progress, environmental structuring, and self-consequencing. In general, these behaviors mirror the elements of Zimmerman’s (2000) model of self-regulation, which includes a forethought phase, a performance phase, and a self-reflection phase. The forethought phase includes goal-setting and environmental structuring. The performance phase includes seeking information, organizing and transforming data,
and monitoring progress. The reflection phase includes self-evaluation and self-consequencing.

Pretreatment observation and interview data revealed that most of the focus-group students employed novice forms of the self-regulatory processes that Zimmerman and Pons (1986) identified as strategies used by high-performing students. Students’ initial efforts generally lacked specificity. Students made goals, enacted a type of learning plan, monitored progress toward goals, were specific about the type of learning environment that supported their learning, and made efforts in organizing and transforming information. Although the students engaged in self-regulatory processes, they were often vague and ineffective. As students experienced the self-regulation instructional program, they were able to articulate more specific goals, make more detailed plans, identify specific information needed to be organized and transformed, and monitored progress in a more detailed manner.

Initially, students made learning plans that focused on outcome goals that were based on the final grade they wanted to earn. Over the course of the study, students were able to create learning plans that centered on process goals that were focused on learning specific information from a study guide. Creating process goals has been shown to improve motivation and increase performance (Zimmerman & Kitsantas, 1997). Prior to the treatment, most students’ study plans focused on reading the highlighted words in the chapter of the textbook that covered the information on the test. Students did not have a specific process to identify which information to review for the test. Even though students were given a study guide to help them direct their studying efforts, they did not use it to guide their studying.
Students in the focus group did not study with a parent as was reported in the seeking social assistance section of the data analysis. The fact that these students studied alone and did not use the study guide to develop a learning plan suggests that these students had minimal understanding of self-regulatory learning processes and may lack the social learning models that could teach them these skills. Because self-regulatory processes are often learned through social models, when they are not present, students struggle to engage in self-regulatory processes (Martinez-Pons, 2002).

A unique feature of this study was the use of the Study Reflection Sheet. After the first set of observations and interviews, it was clear that students were not using their study guides as they studied and did not have a process for monitoring progress. In response to this, the researcher created the Study Reflection Sheet as part of the self-regulation instruction program. During each study session, students were asked to assess which study guide questions they would study, focus on those questions as they studied, and then indicate which questions they knew. After experiencing self-regulation instruction, students were able to observe how to make learning plans that centered on identifying specific information to learn during study session and had a process for monitoring progress. Observation data showed that focus group students improved their ability to self-monitor, which may be attributed to the use of the Study Reflection Sheet. Previous self-regulation learning strategy treatments that focused on test preparation did not report procedures for monitoring progress.
One aspect of the self-reflection phase of self-regulation processes is self-evaluation. Students were able to improve self-evaluation comments after learning about self-regulation processes. Prior to the treatment, students explained disappointing test scores by stating that they did not spend sufficient time studying. By the end of the treatment, students attributed poor test performance to the use of ineffective studying techniques. When students are able to make adaptive inferences, they increase motivation and improve self-regulatory processes (Zimmerman, 2000).

During the second set of observations, an important insight emerged. While two of the special education students studied, it became apparent that they were struggling with one aspect of self-evaluation. They were not sure how to determine whether they knew the information they were studying. They would read the study-guide questions, answer the questions by reading their notes or their flash card, and immediately mark that they knew the information on their Study Reflection Sheet (SRS). When asked how they decided whether they know the information or not, they both remarked that they were not sure. Initially, assisting students in learning how to determine whether they know something on the study guide was not part of the self-regulation instructional program, but was added to the self-regulation instructional program. Students learned to indicate that they knew something on the SRS if they could recite the information from the study guide without looking at the answers or if they could explain the question to someone accurately. If they could not answer study guide questions from memory without looking, they were to indicate that they did not know that particular study guide question on the SRS.
Assisting students in learning how to determine whether they know something on a study guide was another unique facet of this study. It was never mentioned in any of the research used to design this study (Cleary et al., 2008; Cleary & Zimmerman, 2004; Kitsantas, 2002; Zimmerman 1998, 2008). Perhaps because this study was modeled after research performed with general education college and high-school students, those studies assumed that students know how to determine whether they know the material for a test. When young students are learning self-regulation strategies, it is important to recognize that many of them are self-regulation novices and that many of them need explicit instruction in self-regulation subprocesses such as self-monitoring.

Another element of the self-reflection phase is self-consequencing. None of the students in the focus group engaged in any type of self-consequencing. Students neither rewarded themselves for meeting learning goals nor punished themselves for not meeting goals. This aspect of self-regulation was not addressed in the self-regulation instructional program. It was not part of the Self-Regulation Instructional Program that this study used as its model (Cleary et al., 2008). Failing to provide opportunities for students to learn how to engage in self-consequencing was a missed opportunity to further enhance students’ motivation and self-efficacy. Several studies have found that high test scorers used the technique of self-consequences more frequently than low test scorers (Kitsantas, 2002; Zimmerman, 1998; Zimmerman & Martinez-Pons, 1986).

A second set of self-regulatory behaviors identified in transcripts was characterized as seeking social assistance. Transcripts were coded with these
characteristics when students sought assistance from peers, parents, and teachers. Students rarely engaged in seeking social assistance. Only two students solicited assistance from peers. The three special education students asked for help from teachers. One of the students mentioned that her mother has helped her study for tests in the past, but it was not part of her usually study routine. Students who obtained help from parents usually asked for help with a specific question that did not help with the studying processes. In addition, none of the focus-group students came in before or after class time to ask for help from their teacher. When studying, all students stated they usually studied alone. It was apparent that some of the students were unsure of various aspects of the studying process and would have benefited from additional instruction even after the last round of interviews. During the course of self-regulation instruction, students were not provided opportunities to learn about seeking help. This was another missed opportunity in the study. High–performing students tend to seek assistance more often than low-performing students (Cleary et al., 2008; Kitsantas, 2002).

Two of the focus-group students stated that they received social assistance from peers. During the last set of observations, these two focus-group students chose to study together. When they studied together, several problems emerged. One student was a special education student who lacked confidence. The other student was a general education student who showed little academic motivation. The special education student took a passive role in the studying process and allowed her peer to teach her during the study session. Unfortunately, at times, the general education peer conveyed inaccurate information as they studied. Another problem that emerged
was that the special education student allowed the general education student to direct her in her studying process. When the special education student hesitated or faltered as she tried to engage in self-regulation behaviors, the general education student came to her aide very quickly. The challenge with asking peers for assistance is that sometimes the peers are as knowledgeable or less knowledgeable that the individual asking for assistance, so at times they can misinform one another. In addition, if one peer is too passive, then he or she is not developing self-regulation skills instead, others are regulating her.

The last set of self-regulatory behaviors identified in transcripts was rehearsing and memorizing behaviors. The rehearsing and memorizing behaviors included reviewing tests, reviewing notes, reviewing the textbook, and strategies initiated by other persons. After learning about self-regulation strategies, focus-group students demonstrated positive change in the use of the textbook and notes. At first, most students relied on reviewing the textbook as their only rehearsal strategy. As the study progressed, students employed numerous rehearsal strategies including developing mnemonics, reviewing concept maps, making flashcards, and reviewing class notes.

Students used both low-level complexity strategies such as mnemonics and high-level complexity strategies like concept maps. Some of the information students reviewed for their tests were of low-complexity levels such as vocabulary definition matching. Other testing topics were high-complexity topics such as comparing and contrasting various political structures. The researcher assisted students to use mnemonics to help them remember definitions of some words.
Students learned to use concept maps to review the more complex topics on their tests. This practice followed a recommendation by Hattie, Biggs, and Purdie (1996) and Nesbit and Adesope (2006). These researchers stated that if the intention of studying was to teach accurate retention of detail, then teaching mnemonics with imagery was appropriate and that if the focus of learning was to recall central ideas and detail, then concept maps are an appropriate strategy to use for more complex ideas.

Focus-group students used concept maps with varying degrees of success. The general education student with severe ADHD thoroughly enjoyed working with concept maps. He eagerly worked with them during class time and elaborated on them during observations. While he studied, he would focus on his map, recall additional connections, take out his textbook and his notes, confirm his recollection and then enhance his map. This student did extremely well on the history tests after learning the self-regulation strategies. All three of the special education students struggled with using concept maps. When concept maps were first introduced in class, none of the three students with learning disabilities participated during the construction of concept maps, which initially was done in partnerships. They appeared to be overwhelmed by the process of building a map, labeling the map, and then reading the map. When students were given the opportunity to build their own concept maps, none of the three students were able to construct their maps independently and relied on assistance from the researcher and classmates. None of these students used their maps as part of the studying process during their observations. It is possible that these students would have benefited from additional
opportunities to observe a model and experience guided practice. The time constraints associated with whole-class instruction within the traditional history curriculum prevented the researcher from providing additional instruction for these students.

Mnemonics appeared to be a new strategy for the students in the focus group. Students seemed to enjoy making up mnemonics with visuals to help them recall word definitions. The three special education students used this strategy more readily than concept maps. Each of these students articulated mnemonics during at least one of the observations. Even though mnemonics are a low-level complexity rehearsal strategy, for some students, mnemonics may be an appropriate strategy to use with students as they learn how to rehearse and memorize information (Wolgemuth, Cobb, & Alwell, 2008).

This study’s qualitative methodology was unique to self-regulation research. No previous self-regulation research engaged middle-school students in a think-aloud protocol as they studied followed by a structured interview. Engaging students in a think-aloud protocol captured students’ cognitive processes as they used self-regulatory processes. Because students were observed and interviewed throughout the treatment, it was possible to identify developmental shifts in the self-regulation learning strategies. In response to observations and interviews data, the researcher created a Self-Regulation Learning Strategies Developmental Continuum based on the 15 self-regulation learning strategies identified by Zimmerman and Martinez-Pons (1986) as the learning strategies that distinguish high-achieving students from low-achieving students. The development of this continuum is a useful tool that could be
used in future self-regulation research. Specifically, it could be used as part of the goal-setting process, the data analysis process, or self-evaluation process. No prior self-regulation studies have created or utilized a continuum that describes the developmental shifts students experience as they use self-regulation learning strategies.

The fifth research question investigated the impact of a self-regulation learning strategies program on students’ use of study tools. To gather data for this question, after each history test students filled out a test preparation reflection form. On that form, students indicated with whom they studied, how much time they studied, and which study tools they used as they studied. Student data were broken up into high-, medium-, and low-achieving groups.

As the study progressed, students in the high- and medium-achieving groups increased the amount of time they studied by about 15%. Students in the low-achieving groups did not change. At first, it appeared that the low-achieving students spent the longest amount of time studying among the three groups. Upon closer inspection, it was determined that one of the low-achieving students spent about 6 hours studying for each test. By the end of the study, this student increased his average test scores by 20%. Two of the students in the low-achieving group spent less than an hour studying for each test. Both of these students had learning disabilities. These two students failed to improve their average history test scores. One aspect of the self-regulation process was to self-evaluate the effectiveness of their previous learning plans and make adjustment to subsequent plans (Zimmerman, 2000). These students failed to allow the outcomes from previous learning plans to
influence their future learning plans. It is possible that the difficulties they experienced prevented them from feeling efficacious; therefore, they did not believe they had the ability to influence their future outcomes (Zimmerman, Bandura, & Martinez-Pons, 1992).

Students also chronicled which study tools they used as they studied. The data suggest that self-regulation study-strategy instruction broadened students’ knowledge of the variety of materials available for them to review when studying for tests. Students were taught to match study techniques to the type of questions they were asked on their tests. For example, learning vocabulary word definitions was considered a low-complexity task. Students were taught to use low-complexity, rehearsal study tools such as mnemonics and flashcards to review vocabulary words.

Students were taught to label more elaborate questions as high-complexity questions and that they should use organization and elaboration techniques such as concept maps and outlines to review those questions. An example of a high-complexity topic would be when students were asked to describe the benefits of a ruler’s leadership style. The data show that, as the study progressed, the number of students using organization study tools increased and the number students using elaboration and rehearsal tools remained consistent (see Table 34). When inspecting which strategies the three achievement groups used most frequently, it revealed that high-achieving students used organization strategies more often than medium- and low-achieving students. Medium- and low-achieving students generally used rehearsal strategies to study for their tests. It is possible that because high-achieving students used elaboration study tools more often than medium- and low-achieving
students, they understood what they studied on a deeper level and were able to perform better on assessments. Matching study tools to the complexity of the question type mirrors the instructional recommendations offered by Weinstein, Husman, and Dierking (2000). Although students were taught to match study techniques to question complexity, not all students matched study technique to question type in their own studying.

Study diaries also required students to indicate with whom they studied. Over the course of the study, between 50% and 88% of the high-achieving students studied with a partner, 50% of the medium-achieving students studied with a partner, and between 25% and 75% of the low-achieving students studied with a partner. Identifying whom the partner was revealed that the high-achieving students most often studied with their parents, and the parent they studied with was usually their mother. The low-achieving students who studied with someone most often studied with their friends. The fact that so many high-achieving students studied with their parents supports the findings of Manuel-Pons’ (2002) study. Martinez-Pons suggested that parental modeling and support for self-regulatory processes precede students’ development of self-regulatory skills. Because students are studying with their parents, it is possible that their parents are teaching them how to apply self-regulatory strategies and that could contribute to their higher achievement. In addition, Martinez-Pons suggested that students who do not have social models who teach self-regulated learning activities at home are at a distinct academic disadvantage. To support the development of self-regulatory skills for these students,
Martinez-Pons recommended that teachers make deliberate attempts to model self-regulatory processes in the classroom.

Overall, this study adds to the self-regulation body of research in several ways. To begin, first-year middle-school students were provided self-regulation instruction. In numerous studies, learning strategies were taught to high-school and college-aged students (Cleary et al., 2008; Cukras, 2006; Masui & De Corte, 2005; Weinstein et al., 2000). The students in this study who were taught self-regulation learning strategies were a general student population that included students with Attention Deficit, Hyperactivity Disorder, learning disabilities, and Autism. Other studies such as the Cleary et al. (2008) study consisted of students with adequate learning skills as determined by placement in honors classes and proficient or higher scores on statewide tests. Researchers have suggested that self-regulation research should examine the effectiveness of self-regulation instruction with a variety of abilities including students with learning disabilities, academic skills weaknesses, and motivation problems (Cleary et al., 2008; Weinstein et al., 2000). The present study addressed this research suggestion and demonstrated the effectiveness of teaching self-regulation learning strategies to students with academic weaknesses.

Another important contribution this study makes is that it integrates self-regulation instruction with traditional course curriculum. Most self-regulation studies provide instruction in study-skills courses or through intervention programs (Cleary et al., 2008; Cleary & Zimmerman, 2004; Cukras, 2006; Eliam, 2001). A meta-analysis conducted by Hattie, Biggs, and Purdie (1996) investigated the characteristics of effective study-skills programs. They found larger effect sizes when study skills were
integrated with the core curriculum. The current study was conducted in a history class and integrated self-regulation learning strategies instruction with the traditional history curriculum. Results of this study demonstrate the feasibility and value of integrating self-regulation instruction with the core curriculum.

Additionally, because this study included first-year middle-school students with underdeveloped self-regulation skills, new insights regarding how to teach self-regulation to young students were discovered. Data gathered through interviews and observations identified two areas of self-regulation where young, low-achieving students needed additional support: self-monitoring and self-evaluation. In response to this information, the researcher developed a tool called the Study Reflection Sheet that helped students monitor study progress. In addition, the researcher taught students how to determine whether they knew something on the study guide. Neither of these processes had been part of explicit instruction in previous self-regulation learning strategies studies that focused on studying and test preparation.

Finally, this study gathered evidence of self-regulation processes and behaviors using online data gathering methods of observations followed by interviews. Online data-gathering methods collect data while participants are engaged in specific self-regulatory learning processes. Previous self-regulation research often utilized self-report measures such as surveys and interviews. Self-report instruments for self-regulation have several validity problems: (a) student recall may be inaccurate, (b) underreporting strategy use, (c) overreporting strategy use, (d) social desirability responses, and (e) response bias (Boekaerts & Corno, 2005). This study used an online research methodology to offset self-report validity problems. A direct benefit
of using online data-gathering methodologies was that the researcher was able to develop the Self-Regulation Learning Strategies Continuum of Development. No previous research has described the impact of self-regulation instructional programs using a developmental continuum. This tool could be used as both a research tool and an instructional tool in future investigations.

Research has shown that high-achieving students utilize numerous self-regulation processes and behaviors that low-achieving students fail to employ (Kitsantas, 2002; Kitsantas & Zimmerman, 2009; Zimmerman & Martinez-Pons, 1986). The results of this study suggest that providing self-regulation learning strategies instruction to middle-school students supports them in developing the self-regulation processes and behaviors high-achieving students exhibit. Incorporating self-regulation learning strategies instruction may be an effective way to support students to meet the increased academic demands they encounter as they begin middle school.

**Implications for Educational Practice**

Self-regulation learning instructional programs are an effective way to teach students strategies to prepare for classroom tests (Cleary et al., 2008; Cleary & Zimmerman, 2004; Masui & De Corte, 2005; Stoeger & Ziegler, 2005). Students achieve at a higher level if they know how to analyze learning tasks, develop process and outcome goals, implement and monitor learning plans, and self-evaluate the effectiveness of learning plans. Many students suffer academic losses as they begin middle school (Akos & Galassi, 2004). Learning self-regulation learning strategies may support students as they make the transition to middle school (Dembo & Eaton,
245

2000; Gettinger & Seibert, 2002). Some students learn to use these strategies through
parent modeling. Other students are left to figure out self-regulation processes on
their own (Martinez-Pons, 2002). To support the learning needs of students who
struggle with middle-school transition, it is necessary for educators to integrate self-
regulation learning strategies with the core curriculum (Dignath & Buttner, 2008;
Hattie, Biggs, & Purdie, 1996; Masui & De Corte, 2005; Stoeger & Ziegler, 2008).

As students begin middle school, they are required to engage in more
independent learning activities that require the use of self-regulation processes
(Dembo & Eaton, 2000; Gettinger & Siebert, 2002; Martinez-Pons, 2002). It is
important that middle-school educators integrate long-term, self-regulation learning
strategies instruction throughout the school year utilizing a sociocognitive model as
recommended by Dignath and Buttner (2008).

Studies have shown that learning improves when teachers teach self-regulation
using the four level of self-regulatory development: (a) observation, (b) emulation,
(c) self-control, and (d) self-regulation. Teachers should model how to employ each
phase of self-regulation: forethought, performance control, and self-reflection. As
students become more proficient with self-regulation processes, the teacher can allow
the students to share their self-regulatory processes with one another and they can
learn from one another (Zimmerman, 2000). When educators serve as the self-
regulatory model in the classroom, they provide opportunities for students without
models at home to learn the learning strategies of highly successful students, which
could lead to higher academic achievement in the future (Eilam, Zeidner, & Aharon,
Overall, educators should teach self-regulation strategies explicitly so students learn how to study for tests. To begin this process with early adolescent students, teachers need to inform the students what material will be covered on the test. Teachers should use the information that will be covered on the test as the pool of possible process goals for each study session. Next, educators need to model how to employ rehearsal, memorization, organization, and elaboration strategies to review test material. Educators can then teach students how to create learning plans using appropriate learning strategies. Once they have taught students how to employ learning plans, teachers can then have students employ their learning plans and model how to monitor progress toward process goals and adjust learning plans as needed. Teachers can use adapted Study Reflection Sheets to help young students with the self-monitoring process. As students are learning how to monitor progress, teachers also should teach students how to investigate whether they know something or not, so that students can self-monitor accurately. Finally, when students receive graded tests, teachers can ask students to reflect on the overall learning plan, and to assess the effectiveness of various aspects of the plan based on test performance. Then students can learn to make strategic attributions and adaptive inferences. This instruction should start at the beginning of the school year and continue throughout the academic calendar in a variety of classes.

Teachers also could use the Self-Regulation Learning Strategies Continuum of Development (SRLSCD) as part of the instructional process. To begin, teachers could present the SRLSCD to students and explain that the learning strategies listed on it are some of the learning strategies high-achieving students use. Next, teachers
could explain that as students progress in their knowledge of learning strategies, they make developmental shifts and become more proficient in their use of learning strategies. Finally, teachers can convey that one objective could be to refine their use of learning strategies and move across the continuum. Students should learn that using effective learning strategies can improve their academic achievement and improve motivation. The SRLSCD is a concrete tool teachers can use to help students assess themselves as they develop self-regulation learning strategies.

Self-regulation instructional programs highlight varying aspects of the self-regulation process (Dignath & Buttner, 2008; Masui & De Corte, 2005; Stoeger & Ziegler, 2008). Two aspects of self-regulation that were not highlighted in the present study included self-consequencing and help-seeking. These two self-regulatory behaviors have been associated with higher academic achievement and increased motivation (Kitsantas, 2002; Zimmerman & Martinez-Pons, 1986). It would be beneficial to teach students how to reward themselves for achieving their goals and to issue consequences for not attaining their goals. Self-consequencing can increase motivation, which encourages students to persevere with studying efforts (Zimmerman, 1998). Help-seeking also was an area of self-regulation that was not highlighted in the present student. Teaching students to employ help-seeking as part of the performance phase of self-regulation empowers students to address their learning needs (Kitsantas, 2002).

As educators introduce self-regulation processes to students with learning disabilities, instructional adjustments should be considered. Some students with learning disabilities may need to experience slower instructional pacing and more
teaching modeling. Also, special education students may benefit from additional opportunities for guided practice. In addition to the self-regulation curriculum delivered in the general education classroom, these students may benefit from receiving additional self-regulation instruction in a special education classroom where there are fewer students. If teachers are considering the use of concept-maps, it may be necessary to begin concept-map instruction using simple concepts and increase map complexity as students become more comfortable with the concept maps. Teachers should consider providing additional instructional time for students to learn how to read concept maps. Finally, it may be helpful to change the instructional model that is used to teach self-regulation to special education students. Students may benefit from instruction delivered using the Strategic Content Learning (SCL) model developed by Butler (2003) or the Self-Regulation Strategy Development (SRSD) model developed by Harris and Graham (1996). Both the SCL and SRSD models were designed for students with learning disabilities.

Another instructional consideration includes providing parent education on self-regulatory processes. Because self-regulatory processes are often learned through social means, it is imperative that students’ lifelong model, their parents, understand what self-regulation processes are, how they are learned, and what they can do to support their child as he or she learns to self-regulate (Grolnick & Ryan, 1989; Martinez-Pons, 2002). Schools could offer parent education classes helping parents learn how to study with their children, so they can model self-regulation processes throughout their child’s academic lives. These classes could be offered before Back-to-School Nights, as during Parent Teacher Association meetings, and on web-based
classes linked from school web pages.

**Recommendations for Future Research**

This study builds on two previous studies outlining the effects of a self-regulation instructional programs (Cleary et al., 2008; Cleary & Zimmerman, 2004). The first study provided self-regulation instruction in a one-on-one coach and student format. The second study employed a small-group after-school intervention model. In the present study, students were taught self-regulation skill utilizing whole-class instruction. Each of these studies was performed using a nonrandom, convenient sampling. Future studies should employ randomization of treatment to intact groups with a larger sample size. This could be achieved by identifying several classes that are willing to engage in self-regulation instructional programs and using random selection to determine which class would receive the treatment. Adding these elements would provide results that are more robust than those provided through small, nonrandomized samples.

Students who participated in the focus group for this study were medium- and low-achieving students. Future studies should observe and interview high-achieving students. Data gathered during the observations and interviews of the medium- and low-achieving students provided insight into the developmental shifts students experienced in response to self-regulation learning strategy instruction. This type of data has not been gathered for high-achieving students. Previous researchers have interviewed or gathered study diary data on high-achieving students; however, no studies have observed them throughout a self-regulation learning-strategies treatment (Eilam, Zeidner, & Aharon, 2009; Kitsantas, 2002). Studying high-achieving early
adolescent students will help researchers understand how self-regulation instruction influences these students’ self-regulatory processes.

The Study Reflection Sheet (SRS) and the Self-Regulation Learning Strategies Continuum of Development (SRLSCD) were developed in response to the data gathered in observations and interviews. Future studies can incorporate the use of these tools to investigate the impact of introducing these tools in self-regulation learning-strategies instruction. The SRS could be used as part of a study that investigates the impact of self-monitoring. The SRLSCD could be used in a variety of ways. It could be used to analyze interviews and observations about students’ self-regulation processes. It also could be introduced to students as part of a self-regulation instructional program. Students could use the SRLSCD as part of their goal-setting processes and self-evaluation processes. The development of the SRS and the SRLSCD provides researchers with two new ways to investigate self-regulation learning strategies.

The self-regulation instructional program study began after students had been in school for two-thirds of the academic year. It may be more appropriate to begin self-regulation instruction at the beginning of the school year, so researchers have a more accurate baseline of middle-school students’ knowledge of self-regulation learning strategies. As students experience middle-school curriculum, they could learn self-regulatory process implicitly through informal means (Martinez-Pons, 2002; Zimmerman, 1994). If research begins at the beginning of the school year, students will have less time to have acquired self-regulation strategy knowledge informally.

This study failed to integrate self-consequencing and help-seeking as an explicit
part of the self-regulation process. It may be beneficial to examine the effect of including these variables into the study of a self-regulation instruction. Help seeking and self-consequencing are behaviors high-achieving students utilize as a means of motivating and empowering themselves (Kitsantas, 2002; Zimmerman, 1998; Zimmerman & Martinez-Pons, 1986).

Another element of this study that warrants further investigation is how to teach self-regulation learning strategies to students with learning disabilities. Observation and interview data showed that the students with learning disabilities had a difficult time utilizing self-regulation strategies while studying for their history tests. Self-regulation instruction was delivered during whole-class instruction in a class with 28 students. At times, students with learning disabilities can become invisible in class with active, eager participants. For this reason, when studying students with learning disabilities, it may be necessary to investigate the effectiveness of self-regulation learning-strategies instruction using alternative settings, instructional strategies, and instructional pacing. Butler’s (2003) Strategic Content Learning (SCL) model addresses the recommendations identified in this study. The SCL model is designed for small groups and utilizes an individualized approach to instruction. Students with learning disabilities would benefit from the small group dynamic because they could receive more attention. In addition, the individualized approach to instruction would allow the teacher to understand students’ unique learning needs and pace instruction according to their needs.

Harris and Graham’s (1996) Self-Regulation Strategy Development model also may be an appropriate model to employ when teaching self-regulation learning
strategies to students with learning disabilities. First, it was developed to address motivational challenges students with learning disabilities display such as maladaptive attributions and low self-efficacy. In addition, it promotes explicit instruction of self-regulation strategies using an instructional model with six stages that includes varying levels of teacher support. Finally, the SRSD model suggests that instruction match students’ individual level of skill development.

Many of the students in the treatment group were high achieving and possessed a well-developed arsenal of learning strategies. It is possible that these students do not need to experience instruction using a social-cognitive approach. A meta-analysis by Dignath and Buttner (2008) suggested that when students have high levels of metacognitive knowledge, they do not need the structures of social-cognitive instruction. Therefore, future studies that include high-achieving students may consider not utilizing a social-cognitive approach to instruction.

Future research also should consider extending the duration of the instructional program. The current study took place over an 8-week period. During that time, students experienced two cycles of self-regulation instruction. Previous research states that in order for students to think and behave in a cyclical, self-regulated manner, they need frequent opportunities to engage in self-regulatory processes. Students in this study engaged in the process three times: once before the program and twice during the study. Extending the duration of the treatment so that students can engage in additional self-regulatory cycles may improve learning outcomes.

This study was conducted in a history class. Future research should include teaching self-regulation learning strategies in other subject areas such as science,
mathematics, technology courses, and foreign language. There have been studies conducted in mathematics and science; however, those studies were conducted with elementary-school, high-school, and university students.

**Conclusions**

Numerous self-regulation learning strategies studies have been conducted with high-school and postsecondary students; however, there is a paucity of self-regulation learning strategies research utilizing middle-school students. Research conducted with high-school and university students suggest that students who engage in self-regulation learning strategies demonstrate higher achievement than students who do not (Eliam, Zeidner, & Aharon, 2009; Kitsantas, 2002; Kitsantas & Zimmerman, 2009; Zimmerman & Kitsantas, 2002). Researchers have explored the impact of teaching self-regulation strategies to students. Studies suggest that students improve academic achievement when they learn self-regulation learning techniques (Cleary et al., 2008; Cleary & Zimmerman, 2004; Cukras, 2006; Masui & De Corte, 2005; Weinstein, Husman, & Dierking, 2000). This study builds on previous research by demonstrating the impact of self-regulation learning-strategies instruction with first-year middle-school students.

A review of the research identified the transition to middle school as a time when academic achievement declines for many students (Akos & Galassi, 2004; Elias, 2001; Deemer, McCotter, & Smith, 2003; Dembo & Eaton, 2000; Eccles & Roeser, 2009). Students experience procedural, social, and academic changes as they make the transition from elementary to middle school. Schools support students’ procedural and academic transitions by hosting welcoming programs and providing
school orientations. Students need assistance as they adjust to the increased academic demands of middle school but often fail to receive it (Midgley, Middleton, Gheen, & Kumar, 2002; Schunk, 2005).

Colleges and universities provide study-skills classes to support students with the academic transition to postsecondary education. Studies have found that post-secondary students who learn self-regulation learning strategies in study-skills classes improve academic achievement, motivation, and self-efficacy (Kitsantas, Reiser, & Doster, 2004; Masui & De Corte, 2005; Weinstein et al., 2000). This study attempted to support the academic transition into middle school by providing self-regulation learning-strategies instruction integrated with the traditional history curriculum. The results of this study suggest that providing self-regulation learning strategies instruction to young middle-school students benefits them as it benefits high-school and university students. It is important that middle-school students receive self-regulation learning strategies instruction as they begin middle school, so they can enjoy the benefits of increased academic success at the start of their secondary education.

To test the efficacy of a self-regulation instructional program on students’ academic transition in middle school, this study used both quantitative and qualitative methods. Quantitative methods included scores on three measures: students’ history test scores, scores on the School Motivation and Learning Strategies Inventory (SMALSI), and scores on the Self-Efficacy for Self-Regulated Learning Scale (SESRLS). A comparison group was used to examine the impact of the self-regulation learning-strategies instructional program. Results of analyses of variance
showed statistically significant differences between the two groups in the area of test-taking strategies and time-management strategies. ANOVA and t-test analyses failed to show statistically significant differences between the treatment and comparison groups on all other measures; however, results showed that treatment-group students experienced larger gains on study-strategies measures, organization-strategies measures, self-efficacy measures, and history test scores than the comparison group.

Qualitative methods were employed to investigate the impact of a self-regulation instructional program on students’ use of self-regulatory behaviors and processes. Five focus-group students participated in this phase of data collection. These data provided important insight into the development of self-regulatory processes of middle-school students. On three occasions, students were observed as they studied for history tests. During observations, student thought aloud. Each observation was followed with an interview. Each interview and observation was transcribed. At first, the researcher intended to identify the presence or absence of 15 self-regulatory behaviors following previous research (Kitsantas, 2002; Zimmerman & Martinez-Pons, 1986). As transcripts were analyzed, it became evident that identifying the presence or absence of self-regulatory behavior failed to capture the impact of self-regulation instruction. Students displayed a transformation in self-regulatory processes. In response to this transformation, the researcher created the Self-Regulation Learning Strategies Developmental Continuum to describe developmental shifts of self-regulation behaviors and processes.

Prior to self-regulation instruction, most students demonstrated novice forms of self-regulatory behaviors and processes that were unclear and unfocused. As students
experienced self-regulation instruction, their self-regulation behaviors and processes became more focused, specific, and deliberate. Most students were able to employ systematic self-regulatory process for establishing goals, implementing learning plans, monitoring progress toward goals, and evaluating effectiveness of learning plans. In addition, students were able to improve their use of rehearsal and memorizing strategies by using their notes and textbooks more effectively. Students failed to show substantial change in the seeking social assistance categories of self-regulatory behaviors. This area of self-regulation was not highlighted in the self-regulation instructional program. Observation and interview data offered evidence that students make incremental shifts in the use of self-regulatory behaviors and processes and that these shifts can inform educators in appropriate instructional choices.

Observation and interview data suggest that students with learning disabilities showed the least amount of change and were least responsive to the self-regulation learning-strategies instructional program. It is possible that these students needed more modeling and guided feedback than they were able to receive in the whole class instruction model used by this study. Research suggests that teaching self-regulation strategies is most effective when it is integrated with course content and not in a counseling or remedial setting; however, learning self-regulation strategies with tradition course curriculum did not appear to be successful for students with learning disabilities (Hattie, Biggs, & Purdie, 1996).

Students filled out study diaries to demonstrate how the self-regulation learning strategies instruction program influenced their use of study tools. After each test,
students indicated the amount of time they studied, with whom they studied, and which study tools they used as they studied. These data showed that high-achieving students often studied with a parent and that low-achieving students usually studied alone or with and equally achieving student. The data showed that low-achieving students studied the least amount of time and that the amount of time low-achieving students studied did not change substantially throughout the study. Students also indicated which study tools they used as they studied for their tests. The data showed that low-achieving students used the fewest number of study tools. These data support the Gettinger and Siebert (2002) study that reported that low-achieving students have a limited knowledge of effective learning strategies. Over the course of the study, students averaged adding one study tool to their studying repertoire.

**Afterward**

This research study utilized both quantitative and qualitative research methods. The qualitative data provided several important details that the quantitative data could not have revealed. At times, the qualitative data demonstrated exhilarating insights into students’ learning processes, and other times it illuminated distressing facts into how students prepare for tests.

An interesting piece of information that I learned from this study was the fact that some students did not know how to self-assess whether they knew information on the study guide. Two focus-group students struggled with this fundamental aspect of studying. They both had learning disabilities. Teaching students how to identify whether they know the items on the study guide was not a skill I taught directly to the class. I assumed students knew how to determine whether they knew something or
not. I wonder how many other students were unsure of how to determine whether they knew information they were studying. Realizing that some students struggle with this fundamental element of studying helped me recognize the complexity of the studying process.

A disturbing piece of information I learned from the first observations and interviews was the fact that some students did not know how to use a study guide. Even though students were answering study guide questions throughout the unit of instruction, only one focus group student used it during the first observation. Prior to this study, I had not taught students how to use the study guide. I assumed that they would know how to use it. I had not planned on teaching students how to use a study guide as part of the self-regulation learning-strategies instruction. After the first observations, I realized that I needed to model how to use the study guide using very precise steps, so I created a study guide reflection sheet that students used as a tool for monitoring progress toward their learning goals and explicitly modeled how to use the guide as they studied. I am so grateful for the insight the focus-group students provided me during the first observations.

How students use textbooks was another troubling detail I learned during the first observation cycle. Only one student used the textbook to understand information. The other students simply used the textbook to read around highlighted words. Even though students had been taught comprehension strategies for reading the textbook during regular history instruction, they did not apply it as they studied. Watching students skip around a textbook chapter, reading only highlighted words was both frustrating and humbling.
Observing the students with learning disabilities illuminated the information processing challenges some students experience as they try to make sense of their learning. Transcripts show how often some students needed me to repeat questions, how difficult it was for them to find the words to explain themselves, and how long it took to get answers to some of the simplest questions. This information further humbled me and made me realize how difficult studying is for some students. It also helped me understand the value of resource specialist programs and the need for some students to experience small-group intervention-type classes. I do not believe whole-class instruction provided the best learning outcome possible for these students.

Some of the insights revealed in this study were positive surprises. An interesting piece of information that was revealed was the fact that even the high-achieving students made improvements on their history test scores and increased their use of study tools. Some might assume that high-achieving students may not need self-regulation learning-strategies instruction because they are already doing well academically. This study showed the importance of providing self-regulation learning strategies instruction to all students. New middle-school students especially need self-regulation learning-strategies instruction because middle school is oftentimes more academically demanding than elementary school.

Overall, engaging in the qualitative aspects of this study were daunting. Countless hours of transcribing, reading, and analyzing transpired before I was able to articulate what I had learned. Even though the work was overwhelming at times, the qualitative data provided the most important insights and were a true reflection of how students engaged with the instruction provided in the study. The qualitative data
allowed me to recognize how much I assumed students know, which allowed me to adjust my instruction to meet students’ learning needs more adequately. Qualitative methodologies were an important aspect of this study that illuminated important insights into students’ studying processes, which improved the self-regulation instructional program.
REFERENCES


Waeytens, K., Lens, W., & Vandenbergh, R. (2002). 'Learning to learn': Teachers conceptions of their supporting role. *Learning and Instruction, 12,* 305-322.


APPENDIXES
Appendix A

Strategic Study Plan
Module 4: Strategic Study Plan

Name_____________________

1. Prepare to study
☐ Make/review flashcards
☐ Make/review PowerPoint slideshow
☐ Make/review mnemonics
☐ Make/review outlines
☐ Make/review webs
☐ Make/review concept maps

2. When will you study?
☐ Friday—Time_______ = No. minutes__________________
☐ Saturday—Time_____ = No. minutes__________________
☐ Sunday—Time_____ = No. minutes__________________
☐ Monday—Time_______ = No. minutes__________________
☐ Tuesday—Time_______ = No. minutes__________________
☐ Wednesday—Time_____ = No. minutes__________________
☐ Thursday—Time_______ = No. minutes__________________

3. Where will you study?

4. What resources will you use as you study?

5. With whom will you study?

6. How will you monitor progress towards your goals?

7. What will you do if you’re not making good progress?

____________________________________________________________________
Appendix B

Self-Regulation Learning Strategies Continuum of Development
## Self-Regulation Learning Strategies Continuum of Development

<table>
<thead>
<tr>
<th></th>
<th>(-)</th>
<th>(\checkmark)</th>
<th>(\checkmark+)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-Evaluation</strong></td>
<td>Self-evaluates at end but in one factor like time or technique</td>
<td>Self-evaluates once and relates it to several factors</td>
<td>Self-evaluates throughout process and relates it to several factors</td>
</tr>
<tr>
<td><strong>Organizing &amp; Transforming information</strong></td>
<td>Inappropriate information used, incorrect process used, unclear on procedure</td>
<td>Used correct information and had some difficulty with procedure</td>
<td>Used correct information and correct procedure</td>
</tr>
<tr>
<td><strong>Goal-Setting</strong></td>
<td>Outcome goal, no process goals made with one of the following named: time, sequence, or activities</td>
<td>Outcome goals and/or process goals made with some of the following named: time, sequence, or activities</td>
<td>Outcome and process goal made with time, sequence, and activities named</td>
</tr>
<tr>
<td><strong>Seeking Information</strong></td>
<td>Mentions the need to seek information, but does not elaborate or actually seek information</td>
<td>Mentions the need to seek information and had a process for seeking it</td>
<td>Mentions the need for information, has a process for it, and explain why more information is needed</td>
</tr>
<tr>
<td><strong>Keeping Records</strong></td>
<td>Self-assesses, keeps record but is unclear on how to do so in general</td>
<td>Self-assesses knows how to keep records, but is inconsistent or may be unclear at times</td>
<td>Self-assesses, keeps record accurately and consistently</td>
</tr>
<tr>
<td><strong>Environmental Structuring</strong></td>
<td>Knows to create appropriate conditions for learning, but fails to do so consistently</td>
<td>Has an appropriate learning environment that is used consistently</td>
<td>Uses appropriate conditions for learning and can adapt conditions given varying learning situations</td>
</tr>
<tr>
<td><strong>Rehearsing &amp; Memorizing</strong></td>
<td>Attempts to memorize information by using passive means such as rereading textbook, notes</td>
<td>Memorizing information using passive and active strategies like using mnemonics, self-quizzing, and reading notes</td>
<td>Memorizing information through active strategies such as concept maps, self-quizzing, and visualizing</td>
</tr>
<tr>
<td><strong>Seeking Social Assistance</strong></td>
<td>Seeks help for general procedural assistance and is passive</td>
<td>Seeks help for minor details in procedure</td>
<td>Takes leadership stance in seeking assistance is articulates how partner should help</td>
</tr>
<tr>
<td><strong>Reviewing Records</strong></td>
<td>Reviews material without establishing a purpose or goal</td>
<td>Reviews with a goal, but may be using passive learning strategies</td>
<td>Reviews with a goal and uses active learning strategies</td>
</tr>
<tr>
<td><strong>Strategies initiated by others</strong></td>
<td>Mentions what others have said to do with adaptations to unique learning conditions</td>
<td>Mentions what others said to do with minor changes made</td>
<td>Mentions what others have said to do in a rote, verbatim manner</td>
</tr>
</tbody>
</table>

*(0)-indicates no statements or behaviors were made during observations and interviews*
Appendix C

Consent Forms
New Consent Forms

Appendix A-1

University of San Francisco
School of Education

February 10, 2010

Dear Parents,

My name is Elizabeth Lyons-Wagner. I am your child’s sixth-grade block teacher at Harvest Park Middle School and have been employed by the Pleasanton Unified School District for ten years. In addition, I am a doctoral student at the University of San Francisco’s Learning and Instruction Program. I am conducting research in the area of teaching students how to study for tests. I would like to include your child as a participant in an academic program designed to teach students study strategies, which will be a normal part of the history curriculum.

Participants in the study will be asked to provide several types of data to which will be used to assess the effectiveness of the study strategies program. The first type of data that will be gathered are questionnaires. These questionnaires will ask students to identify how often they use various learning strategies and explain their confidence in their ability to perform various learning tasks. In addition to these data, student test scores will be gathered to assess whether students’ tests scores improve as a result of participating in the study strategies program.

Only the researcher will have access to the information collected in this project. Neither your name nor your child's name will appear in any reports of this research. Upon your request, you are able to review a copy of the questionnaires and interview questions. At the conclusion of this study, students’ responses to the questionnaires, interview questions, and videotapes will be destroyed.

If you have questions about the research, you may contact me at (925) XXX-XXXX. If you have further questions about the study, you may contact the IRBPHS at the University of San Francisco, which is concerned with protection of volunteers in research projects. You may reach the IRBPHS office by calling (415) 422-6091 and leaving a voicemail message, by e-mailing IRBPHS@usfca.edu, or by writing to the IRBPHS, Department of Counseling Psychology, Education Building, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1080.

PARTICIPATION IN RESEARCH IS VOLUNTARY. Participation in this project involves no unusual risks to you or your child. You may rescind your permission at
any time with no negative consequences. Your child can refuse to participate or withdraw from the project at any time with no negative consequences.

Your child's participation in the study skills program will help me design an effective program that teaches students how to study for tests. If you agree to let your child participate, please keep a copy of this letter and consent form for your records, sign one copy, and return it with your child as soon as possible. If you have any questions about this research or would like to review the interview questions, questionnaires, or the learning modules objectives prior to providing consent, please feel free to contact me by calling 925-XXX-XXXX or emailing me at ________________.

Sincerely,

Elizabeth Lyons-Wagner
Sixth-Grade Block Teacher
Harvest Park Middle School
Doctoral Candidate
University of San Francisco
PARENTAL CONSENT FOR RESEARCH PARTICIPATION A-1

Purpose and Background
Ms. Elizabeth Lyons-Wagner of the School of Education at the University of San Francisco is doing a study on the effects of a study-skills curriculum on sixth-grade students’ history test scores. Sixth-grade students must learn many new study skills in order to be successful in middle school. The researcher is interested in learning how teaching study skills within the history curriculum impacts students’ history grades and their motivation to study.

Procedures
If I agree to allow my child to be in Part I of the study, the following will happen:

1. At the beginning and end of two instructional history units, my child will fill out two questionnaires, the School Motivation and Learning Strategies Inventory (75 questions) and the Self-Efficacy for Self-Regulated Learning Inventory (9 questions).
2. The surveys will take approximately 40 minutes to fill out.
3. The researcher will return results in a sealed envelope with interpretations upon completion of the study.
4. The researcher will review my child’s history grades.
5. If I chose to not allow my child to be in the study, when the rest of the class is filling out the questionnaires, my child will receive an alternative assignment. Students who do not have permission to participate will read an article on study skills and complete an assignment based on the information in the article.

Risks and/or Discomforts
1. Filling out questionnaires is a normal routine and usually does not make students uncomfortable. If my child becomes uncomfortable or upset during the 40-minute questionnaires, the researcher will attempt to comfort my child. If my child continues to be upset, the researchers will stop my child from the activity that is upsetting him/her.
2. Participation in research may mean a loss of confidentiality. Study records will be kept as confidential as is possible. No individual identities will be used in any reports or publications resulting from the study. Study information will be coded and kept in locked files at all times. Only the researcher will have access to the questionnaires.

Benefits
My child may benefit from participating in this study. My child will receive feedback from the questionnaires regarding their study skills and strategies they use to learn.

Costs/Financial Considerations
There will be no costs to me or to my child as a result of taking part in this study.

Payment/Reimbursement
Neither my child nor I will be reimbursed for participation in this study.

Questions
I have talked to Ms. Lyons-Wagner about this study and have had my questions answered. If I have further questions about the study, I may call her at (925) XXX-XXXX. If I have any questions or comments about participation in this study, I should first talk with the researchers. If for some reason I do not wish to do this, I may contact the IRBPHS, which is concerned with protection of volunteers in research projects. I may reach the IRBPHS office
by calling (415) XXX-XXXX and leaving a voicemail message, by FAX at (415) XXX-XXXX by e-mailing IRBPHS@usfca.edu, or by writing to the:

IRBPHS, Department of Counseling Psychology, Education Building, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1080.

Consent
I have been given a copy of the “Research Subject’s Bill of Rights,” and I have been given a copy of this consent form to keep. PARTICIPATION IN RESEARCH IS VOLUNTARY. I am free to decline to have my child be in this study, or to withdraw my child from it at any point. My decision as to whether or not to have my child participate in this study will have no influence on my child as a student at this middle school.

Please indicate below your decisions regarding the various parts of this research project:

I give my permission for the items checked "Yes" below:

If you agree to have your child participate in the study, please indicate the type of data you will allow me to gather.

Yes  No

_____  _____My child may answer questionnaires

_____  _____My child’s history test scores may retrieved

My signature below indicates that I agree to allow my child to participate in this study.

_________________________________ __________________
Child’s Name

_________________________________ __________________
Signature of Subject’s Parent/Guardian    Date of Signature

_________________________________ __________________
Signature of Person Obtaining Consent    Date of Signature

***Please sign a copy of this consent form and keep the other copy for your records.
New Consent Forms

Appendix A-2

University of San Francisco
School of Education

February 10, 2010

Dear Parents,

My name is Elizabeth Lyons-Wagner. I am your child’s sixth-grade block teacher at Harvest Park Middle School and have been employed by the Pleasanton Unified School District for ten years. In addition, I am a doctoral student at the University of San Francisco’s Learning and Instruction Program. I am conducting research in the area of teaching students how to study for tests. I would like to include your child as a participant in an academic program designed to teach students study strategies, which will be a normal part of the history curriculum.

Participants in the study will be asked to provide several types of data to which will be used to assess the effectiveness of the study strategies program. The first type of data that will be gathered are questionnaires. These questionnaires will ask students to identify how often they use various learning strategies and explain their confidence in their ability to perform various learning tasks. In addition to these data, student test scores will be gathered to assess whether students’ tests scores improve as a result of participating in the study strategies program.

Your child has been asked to participate in interviews and to be videotaped while studying for a test. In addition, your child’s concept maps and study journals will be photocopied and then returned to students. These data will be used to record students’ studying behaviors and their thoughts about studying as a result of receiving study strategies instruction.

Only the researcher will have access to the information collected in this project. Neither your name nor your child’s name will appear in any reports of this research. Upon your request, you are able to review a copy of the questionnaires and interview questions. At the conclusion of this study, students’ responses to the questionnaires, interview questions, videotapes, concept map copies, and reflective journal copies will be destroyed.

If you have questions about the research, you may contact me at (925) XXX-XXXX. If you have further questions about the study, you may contact the IRBPHS at the University of San Francisco, which is concerned with protection of volunteers in research projects. You may reach the IRBPHS office by calling (415) 422-6091 and leaving a voicemail message, by e-mailing IRBPHS@usfca.edu, or by writing to the IRBPHS, Department of Counseling Psychology, Education Building, University of
PARTICIPATION IN RESEARCH IS VOLUNTARY. Participation in this project involves no unusual risks to you or your child. You may rescind your permission at any time with no negative consequences. Your child can refuse to participate or withdraw from the project at any time with no negative consequences.

Your child's participation in the study skills program will help me design an effective program that teaches students how to study for tests. If you agree to let your child participate, please keep a copy of this letter and consent form for your records, sign one copy, and return it with your child as soon as possible. If you have any questions about this research or would like to review the interview questions, questionnaires, or the learning modules objectives prior to providing consent, please feel free to contact me by calling 925-XXX-XXXX or emailing me at ________________.

Sincerely,

Elizabeth Lyons-Wagner
Sixth-Grade Block Teacher
Harvest Park Middle School
Doctoral Candidate
University of San Francisco
PARENTAL CONSENT FOR RESEARCH PARTICIPATION A-2

Purpose and Background
Ms. Elizabeth Lyons-Wagner of the School of Education at the University of San Francisco is doing a study on the effects of a study-skills curriculum on sixth-grade students’ history test scores. Sixth-grade students must learn many new study skills in order to be successful in middle school. The researcher is interested in learning how teaching study skills within the history curriculum impacts students’ history grades and their motivation to study.

Procedures
If I agree to allow my child to be in Part I of the study, the following will happen:

1. At the beginning and end of the learning strategies instruction study, my child will fill out two questionnaires, the School Motivation and Learning Strategies Inventory (75 questions) and the Self-Efficacy for Self-Regulated Learning Inventory (9 questions).
2. The surveys will take approximately 40 minutes to fill out.
3. The researcher will return results in a sealed envelope with interpretations upon completion of the survey.
4. The researcher will review my child’s history grades.

If I also give my child permission to participate in Part II of the research study, the following will happen:
5. My child will be videotaped thinking aloud while he/she studies for a history test.
6. My child will be interviewed about how he/she studied immediately after being videotaped.
7. The interview and the videotapes will be transcribed.
8. My child’s concept maps will be photocopied.
9. My child’s study journals will be photocopied.

Risks and/or Discomforts
1. My child may become uncomfortable or upset during the 40-minute questionnaires, the videotaping, and interview; if this happens, the researchers will attempt to comfort my child. If my child continues to be upset, the researchers will stop my child from the activity that is upsetting him/her.
2. Participation in research may mean a loss of confidentiality. Study records will be kept as confidential as is possible. No individual identities will be used in any reports or publications resulting from the study. Study information will be coded and kept in locked files at all times. Only the researcher will have access to the questionnaires, videotapes, and interview transcripts.

Benefits
My child may benefit in several ways from participating in this study. My child will learn effective, research-based study strategies. Use of these study strategies may result in an improvement my child’s history test grades, overall history grade, and increase his/her motivation to study for history tests. Another benefit of this research is that it will help the researcher determine if the study skills instruction is an effective curriculum for sixth-grade students’ who need to learn how to study for middle school tests.

Costs/Financial Considerations
There will be no costs to me or to my child as a result of taking part in this study.
Payment/Reimbursement
Neither my child nor I will be reimbursed for participation in this study.

Questions
I have talked to Ms. Lyons-Wagner about this study and have had my questions answered. If I have further questions about the study, I may call her at (925) XXX-XXXX. If I have any questions or comments about participation in this study, I should first talk with the researchers. If for some reason I do not wish to do this, I may contact the IRBPHS, which is concerned with protection of volunteers in research projects. I may reach the IRBPHS office by calling (415) 422-6091 and leaving a voicemail message, by FAX at (415) 422-5528, by e-mailing IRBPHS@usfca.edu, or by writing to the:

IRBPHS, Department of Counseling Psychology, Education Building, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1080.

Consent
I have been given a copy of the “Research Subject’s Bill of Rights,” and I have been given a copy of this consent form to keep. PARTICIPATION IN RESEARCH IS VOLUNTARY. I am free to decline to have my child be in this study, or to withdraw my child from it at any point. My decision as to whether or not to have my child participate in this study will have no influence on my child as a student at this middle school.

Please indicate below your decisions regarding the various parts of this research project: I give my permission for the items checked "Yes" below:

If you agree to have your child participate in the study, please indicate the type of data you will allow me to gather.

Yes  No

_____  _____  My child may answer questionnaires

_____  _____  My child’s history test scores may retrieved

_____  _____  My child may be interviewed

_____  _____  My child may be videotaped while studying for a test

_____  _____  My child’s concept maps may be photocopied

_____  _____  My child’s study journals may be photocopied

My signature below indicates that I agree to allow my child to participate in this study.

_________________________________ __________________
Child’s Name

Signature of Subject’s Parent/Guardian  Date of Signature

Signature of Person Obtaining Consent  Date of Signature

***Please sign a copy of this consent form and keep the other copy for your records.***
Comparison Group Parent Cover Letter and Consent Form

University of San Francisco
School of Education

February__, 2010

Dear Parents,

My name is Elizabeth Lyons-Wagner. I am a doctoral student at the University of San Francisco’s Learning and Instruction Program. I am conducting research in the area of how students study for tests. I would like to include your child in a comparison group for this study.

As a participant in the comparison group, your child will respond to two questionnaires. The first questionnaire is called the School Motivation and Learning Strategies Inventory (SMALSI). This questionnaire asks students to rate the frequency they use various learning strategies. The second questionnaire is called the Self-Efficacy for Self-Regulated Learning Inventory (SESRLI). This questionnaire asks students to identify their confidence in their ability to perform various learning behaviors. Information gathered from these questionnaires will help me compare how a focus group of students score compared to a typical class of sixth-graders.

Only the researcher will have access to the information collected in this project. Neither your name nor your child's name will appear in any reports of this research. Upon your request, you are able to review a copy of the questionnaires. At the conclusion of this study, students’ responses to the questionnaires will be destroyed.

If you have questions about the research or would like to review the questionnaires prior to providing consent, please feel free to contact me by calling 925-XXX-XXXX or emailing me. If you have further questions about the study, you may contact the IRBPHS at the University of San Francisco, which is concerned with protection of volunteers in research projects. You may reach the IRBPHS office by calling (415) 422-6091 and leaving a voicemail message, by e-mailing IRBPHS@usfca.edu, or by writing to the IRBPHS, Department of Counseling Psychology, Education Building, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1080.

PARTICIPATION IN RESEARCH IS VOLUNTARY. Participation in this project involves no unusual risks to you or your child. You may rescind your permission at any time with no negative consequences. Your child can refuse to participate or withdraw from the project at any time with no negative consequences.

Your child's participation in the comparison group will help me determine whether the study skills class improves students’ use of study strategies. On the following page, please indicate whether or not you give your child permission to participate in this study. If you agree to let your child participate, please keep a copy of this letter and informed consent form, sign the informed consent form and return it with your child as soon as possible.

Sincerely,
PARENT CONSENT FOR COMPARISON GROUP PARTICIPATION

Purpose and Background
Ms. Elizabeth Lyons-Wagner of the School of Education at the University of San Francisco is doing a study on the effects of a study-skills curriculum on sixth-grade students’ history test scores. Sixth-grade students must learn many new study skills in order to be successful in middle school. The researcher is interested in learning how a study skills curriculum that teaches students how to set goals, create learning plans using effective learning strategies, and use rehearsal strategies will impact students’ use of study strategies and their motivation to study compared to a group of typical sixth-grade students. My child is being asked to participate as a comparison group member, so the researcher can compare the study skills and motivation of students who learn a specific study skills curriculum to a typical sixth-grade class.

Procedures
If I agree to allow my child to be a comparison group member for this study, the following will happen:

1. Twice over the next two months, my child will fill out two questionnaires, the School Motivation and Learning Strategies Inventory (75 questions) and the Self-Efficacy for Self-Regulated Learning Inventory (9 questions).
2. The surveys will take approximately 40 minutes to fill out.
3. The researcher will return results in a sealed envelope with interpretations upon completion of the study.
4. If I chose to not allow my child to be in the study, when the rest of the class is filling out the questionnaires, my child will receive an alternative assignment. Students who do not have permission to participate will read an article on study skills and complete an assignment based on the information in the article.

Risks and/or Discomforts
1. My child may become uncomfortable while filling out the 40-minute questionnaires; if this happens, the researcher will attempt to comfort my child. If my child continues to be upset, the researcher will stop my child from finishing the questionnaire.
2. Participation in research may mean a loss of confidentiality. My child’s information will be coded with his/her district identification number. Study records will be kept as confidential as is possible. No individual identities will be used in any reports or publications resulting from the study. Study information will be coded and kept in locked files at all times. Only the researcher will have access to the questionnaires.

Benefits
My child may benefit in several ways from participating in this study. My child will have the opportunity to reflect on his/her study habits and motivation for studying. At the end of the study, my child will receive interpretations of the questionnaire responses and suggestions for improvement. The main benefit of this research is
that it will help the researcher investigate if the study skills curriculum is an effective intervention of sixth-grade students’ who need to learn how to study for middle school tests.

Costs/Financial Considerations
There will be no costs to me or to my child as a result of taking part in this study.

Payment/Reimbursement
Neither my child nor I will be reimbursed for participation in this study.

Questions
I have talked to Ms. Lyons-Wagner about this study and have had my questions answered. If I have further questions about the study, I may call her at (925) XXX-XXXX.

If I have any questions or comments about participation in this study, I should first talk with the researchers. If for some reason I do not wish to do this, I may contact the IRBPHS, which is concerned with protection of volunteers in research projects. I may reach the IRBPHS office by calling (415) 422-6091 and leaving a voicemail message, by FAX at (415) 422-5528, by e-mailing IRBPHS@usfca.edu, or by writing to the:

IRBPHS, Department of Counseling Psychology, Education Building, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117-1080.

Consent
I have been given a copy of the “Research Subject’s Bill of Rights,” and I have been given a copy of this consent form to keep. PARTICIPATION IN RESEARCH IS VOLUNTARY. I am free to decline to have my child be in this study, or to withdraw my child from it at any point. My decision as to whether or not to have my child participate in this study will have no influence on my child as a student at this middle school.

Please indicate below your decisions regarding the various parts of this research project:

Yes

_____ My child may participate in the comparison group.

No

_____ My child may not participate in the comparison group.

_____________________________________________

(Child’s Name/grade)
(Parent/Guardian printed name)

__________________________________________
(Parent/Guardian signature)                      Date

__________________________________________
Signature of Person Obtaining Consent          Date of Signature

***Please sign a copy of this consent form and keep the other copy for your records.***
Appendix D

Interview Question Coding Sheet
<table>
<thead>
<tr>
<th>Categories of Strategies</th>
<th>Definition</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-evaluation</td>
<td>Statements indicating student-initiated evaluation of the quality of progress of their work</td>
<td></td>
</tr>
<tr>
<td>2. Organizing and</td>
<td>Statements indicating student-initiated overt or covert rearrangement of instructional materials to improve learning</td>
<td></td>
</tr>
<tr>
<td>and transforming</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Goal-setting and</td>
<td>Statements indicating student setting of educational goals or subgoals and planning for sequencing, time, and completing activities related to those goals</td>
<td></td>
</tr>
<tr>
<td>planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Seeking information</td>
<td>Statements indicating student-initiated efforts to secure further task information from nonsocial sources when undertaking an assignment</td>
<td></td>
</tr>
<tr>
<td>5. Keeping records and</td>
<td>Statements indicating student-initiated efforts to record events or results</td>
<td></td>
</tr>
<tr>
<td>monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Environmental</td>
<td>Statements indicating student-initiated efforts to select or arrange the physical setting to make learning easier.</td>
<td></td>
</tr>
<tr>
<td>structuring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Self-consequences</td>
<td>Statements indicating student arrangement or imagination of rewards or punishment for success or failure</td>
<td></td>
</tr>
<tr>
<td>8. Rehearsing and</td>
<td>Statements indicating student-initiated efforts to memorize material by overt or covert practice</td>
<td></td>
</tr>
<tr>
<td>memorizing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-11. Seeking social</td>
<td>Statements indicating student-initiated efforts to solicit help from peers (9), teachers (10), and adults (11)</td>
<td></td>
</tr>
<tr>
<td>assistance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-14. Reviewing records</td>
<td>Statements indicated student initiated effort to reread tests (12), notes (13), or textbooks (14) to prepare for class or further testing</td>
<td></td>
</tr>
<tr>
<td>15. Other</td>
<td>Statements indicating learning behavior that is initiated by other persons such as teachers or parents and all unclear verbal responses</td>
<td></td>
</tr>
</tbody>
</table>
Appendix E

Study Reflection Sheet
Study Reflection Sheet

Name___________________________________ Date_________ Period_______

- Practice all your test review questions each study session
- Separate the cards you do know from the ones you don’t know
- Find answers to questions you don’t know
  - Perhaps draw pictures or create mnemonics to help you remember subject matter that’s unfamiliar
  - Record topics you know and don’t know in the reflection section below
  - Plan what you will do to learn the topics you don’t know
- Each day you practice, have a study partner—could be a parent, sibling, or friend—sign you off

Each day’s practice reflection is worth 5 points, which will be added to your test grade: ___/20 pts.

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Study guide questions you know:</th>
<th>Study guide questions you don’t know:</th>
<th>How you’ll learn those topics:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>__flashcards __read book __read notes __other</td>
</tr>
<tr>
<td>Study Buddy’s Initials____</td>
<td>13 14 15 16 17 18 19 20</td>
<td>vocab words:</td>
<td></td>
</tr>
<tr>
<td>vocab words:</td>
<td></td>
<td>vocab words:</td>
<td></td>
</tr>
<tr>
<td>Day 2</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>__flashcards __read book __read notes __other</td>
</tr>
<tr>
<td>Study Buddy’s Initials____</td>
<td>13 14 15 16 17 18 19 20</td>
<td>vocab words:</td>
<td></td>
</tr>
<tr>
<td>vocab words:</td>
<td></td>
<td>vocab words:</td>
<td></td>
</tr>
<tr>
<td>Day 3</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>__flashcards __read book __read notes __other</td>
</tr>
<tr>
<td>Study Buddy’s Initials____</td>
<td>13 14 15 16 17 18 19 20</td>
<td>vocab words:</td>
<td></td>
</tr>
<tr>
<td>vocab words:</td>
<td></td>
<td>vocab words:</td>
<td></td>
</tr>
<tr>
<td>Day 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>__flashcards __read book __read notes __other</td>
</tr>
<tr>
<td>Study Buddy’s Initials____</td>
<td>13 14 15 16 17 18 19 20</td>
<td>vocab words:</td>
<td></td>
</tr>
<tr>
<td>vocab words:</td>
<td></td>
<td>vocab words:</td>
<td></td>
</tr>
</tbody>
</table>
Appendix F

Sample Lesson Plans
## History Self-Regulation Empowerment Program Lesson Sequence

<table>
<thead>
<tr>
<th>Module</th>
<th>Day of Intervention</th>
<th>Instructional Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intro. To SREP</td>
<td>1</td>
<td>Overview of the SREP program</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Give SMALSI and SESRLS instruments</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Causal attributions for failure &amp; current use of learning strategies</td>
</tr>
<tr>
<td>Task Analysis</td>
<td>4</td>
<td>Analyze history tests, the types of questions on the tests, and the challenges that go with those types of test questions.</td>
</tr>
<tr>
<td>--------------</td>
<td>---</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Goal-Setting</td>
<td>5</td>
<td>Identify ways to study for the different types of questions on history tests.</td>
</tr>
<tr>
<td>Strategic Planning</td>
<td>6</td>
<td>Discuss goal setting: short-term and long-term goals for history tests.</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Setting outcome and process goals &amp; go over test grade graphing procedure</td>
</tr>
<tr>
<td>Strategy Training</td>
<td>8</td>
<td>Describe ways to set up a strategic plan for attaining history test grade goals</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Develop strategic plan for upcoming history test</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Identify the types of study tactics students have used for previous science tests &amp; introduce 2 new ones: mnemonics &amp; concept maps</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Teach students keyword mnemonic tactic</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Practice keyword mnemonic tactic</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Teach students concept map tactic</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Practice mnemonic tactic</td>
</tr>
<tr>
<td>Reflection</td>
<td>15</td>
<td>Students receive science tests, graph grades and reflect on outcomes</td>
</tr>
<tr>
<td>2, 3, &amp; 4</td>
<td>16</td>
<td>Analyze next unit, set new goals based on test results, &amp; create new strategic plan</td>
</tr>
<tr>
<td>5</td>
<td>17</td>
<td>Instruction on topics as needed: environmental structuring, help-seeking, behavior management, time management, concept maps, mnemonics</td>
</tr>
<tr>
<td>5</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repeat modules as needed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflection</td>
<td>30</td>
<td>Give SMALSI and SESRLS</td>
</tr>
</tbody>
</table>

**Module 1: Attribution Patterns**

**Objectives:**

- Build rapport & provide description of Self-Regulation Empowerment Program
- Identify causal attributions for failure and current use of learning strategies

**Module 1 Lesson:**
Attribution Patterns & Use of Learning Strategies
<table>
<thead>
<tr>
<th>Connect &amp; Engage</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Ask students to explain how they feel about history tests.</td>
</tr>
<tr>
<td>- Ask students to explain how students in general explain the reasons they get the grades they earn on tests.</td>
</tr>
<tr>
<td>- Read a sample student explanation and have them comment on the sample student’s thinking.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instruct</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Ask students to brainstorm all the reasons students do well on tests</td>
</tr>
<tr>
<td>- Ask students to brainstorm all the reasons students do poorly on tests</td>
</tr>
<tr>
<td>- Explain to students that there are many reasons that contribute to students’ grades on science test and they can be classified into two types: external and internal.</td>
</tr>
<tr>
<td>- External attributions: explain outcomes on outside sources—too hard, teacher mean,</td>
</tr>
<tr>
<td>- Internal attributions: explain outcomes on internal sources- I didn’t study hard enough, I used the wrong strategies, I didn’t study the right material.</td>
</tr>
<tr>
<td>- Next, tell students that the way they explain their learning outcomes are called attributions and one outcome of this class is to help them understand the connection between study strategies and learning outcomes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Place a blank test reflection &amp; attribution sheet on the overhead and how to classify the students explanations as either external or internal</td>
</tr>
<tr>
<td>- Model how to fill out the form: note the place to describe learning strategies use, difficulty level of test, type of teacher, how smart think they are, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Ask students to fill out their reflection &amp; attribution sheet based on the results of their last science test.</td>
</tr>
<tr>
<td>- Have students fill out science test reflection: what grade did they earn, what grade did they want to earn, what strategies did they use to prepare for test, and how much time did they take to prepare for the test.</td>
</tr>
<tr>
<td>- Ask students to explain the reasons for their science test grade.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group Debrief</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Discuss the reflections students made.</td>
</tr>
<tr>
<td>- Ask students to share what they noticed about the way they explain the outcomes, are they internal or external.</td>
</tr>
<tr>
<td>- Ask students to reflect on what they’ve learned about attributions and why they are important to their learning.</td>
</tr>
</tbody>
</table>
Module 2: Task Analysis

Objectives:
- Identify the types of questions on history tests
- Identify different studying techniques: rehearsal, elaboration, and organization

<table>
<thead>
<tr>
<th>Module 2 Lesson: Task Analysis and Successful Studying</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connect &amp; Engage</strong></td>
</tr>
<tr>
<td>- Have them identify what they had to do to prepare for that event.</td>
</tr>
<tr>
<td>- Point out that at the beginning of any big event they need to analyze the event to identify what needs to be done in order to accomplish that task/event.</td>
</tr>
</tbody>
</table>

| **Instruct** |
| - Ask students to look at sample study plans and sample study guide. |
| - Ask them to critique the student’s study plan. |
| - Have them comment on the learning strategies that were used, the amount of time used to study, and whether the types of strategies were appropriate to the type of test the student was going to have. |
| - Ask students to list the types of test questions they have on history tests. |
| - Ask students to list the different types of strategies they use to prepare for the different types of questions. |
| - Explain that different types of questions require different types of learning strategies. |
| - The different strategies can be divided into three types: rehearsal, elaboration, and organization strategies. |
| - Rehearsal strategies are used for simple topics that require word-for-word memorizing—such as remembering lists of information or vocabulary. |
| - Elaboration strategies are used for topics that have a lot of detail or parts to them—such as steps in a cycle, sequence of events. |
| - Organization strategies are used for topics that connect more than one idea together—such as comparing the 8-Fold Path to the 10 Commandments. |
| - Explain that different types of questions require different techniques for studying. |
| - If they match their learning strategy to the type of test questions they have they will have better success on their tests. |

| **Model** |
| - Show a list of study guide questions and think aloud how to analyze them to determine the type of learning strategy they should use: rehearsal, elaboration, or organization. |
| - As students become familiar with analyzing strategies, invite them to share which type of strategies they should use. |

| **Indep. Prac.** |
| - Give students a list of study guide questions and have them analyze the types learning strategies they should use to study for that question. |
| - When students are finished go over their responses and check for understanding. |

| **Group Debrief** |
| - Ask students to explain the purpose of analyzing study guide questions. |
| - Ask students what happens if they do not analyze questions prior to studying for a test. |
| - Ask students to reflect on what they’ve learned about how to study successfully. |
### Module 3: Goal Setting

**Objective:**
- To teach students how to identify and create long-term outcome goals

<table>
<thead>
<tr>
<th>Module 3 Lesson:</th>
<th>Long-Term Goal Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connect &amp; Engage</strong></td>
<td></td>
</tr>
<tr>
<td>- Write the word GOAL on a piece of paper and give to groups of 4 students</td>
<td></td>
</tr>
<tr>
<td>- Have students list all the words they associate with goals</td>
<td></td>
</tr>
<tr>
<td>- Ask students to define GOAL</td>
<td></td>
</tr>
<tr>
<td>- Ask students to think of a time they’ve set a goal and what were the steps they took in achieving their goals.</td>
<td></td>
</tr>
<tr>
<td><strong>Instruct</strong></td>
<td></td>
</tr>
<tr>
<td>- Explain that a goal is the object or aim of an action and that goals have an important influence on their motivation</td>
<td></td>
</tr>
<tr>
<td>- It helps them in several ways: helps them focus attention on goal and relevant tasks, increases effort to attain goals, helps them persist, and helps them feel positive about their efforts.</td>
<td></td>
</tr>
<tr>
<td>- There are two types of goals they will be establishing: 1) process goals that are goals that focus on methods and strategies that help them master skills and 2) outcomes goals that concentrate on attaining a desired outcome.</td>
<td></td>
</tr>
<tr>
<td>- Outcome goals need to be SMART: specific, measurable, attainable, realistic, and time-dependent.</td>
<td></td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td></td>
</tr>
<tr>
<td>- Show a list of goals on the overhead and ask students to identify which type of goals they are: process or outcome</td>
<td></td>
</tr>
<tr>
<td>- Go over the outcome goals and have them determine whether they are SMART goals. –if they aren’t, model how to make them SMART</td>
<td></td>
</tr>
<tr>
<td><strong>Independent Practice</strong></td>
<td></td>
</tr>
<tr>
<td>- Ask students to create process and outcome goals on their goal sheets.</td>
<td></td>
</tr>
<tr>
<td>- Have students write a SMART outcome goal that they would like to work towards on their next history test.</td>
<td></td>
</tr>
<tr>
<td>- Students fill out the goal setting portion of the test-reflections page.</td>
<td></td>
</tr>
<tr>
<td><strong>Group Debrief</strong></td>
<td></td>
</tr>
<tr>
<td>- Ask students to compare their new goals to the type of goals they’ve made in the past.</td>
<td></td>
</tr>
<tr>
<td>- Ask students how they feel now they’ve made their goals.</td>
<td></td>
</tr>
<tr>
<td>- Ask students what they feel they need to have next in order to reach their goals.</td>
<td></td>
</tr>
</tbody>
</table>
Module 4: Strategic Planning

Objectives:

- To teach students how to develop a strategic plan/process goal for achieving short-term and long-term outcome goals.
- To link task analysis and goal setting to the process of strategic planning
- To teach students to use self-reflection processes to adjust or modify study plans *(after self-reflection phase module)*

<table>
<thead>
<tr>
<th>Module 4 Lesson:</th>
<th>Strategic Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>This lesson was developed by Timothy Cleary and given to the researcher upon request.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connect &amp; Engage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Ask students to think about something they do well.</td>
<td></td>
</tr>
<tr>
<td>□ Ask students to explain how they’ve become so good at that activity</td>
<td></td>
</tr>
<tr>
<td>□ Connect the idea that students have used strategies or made strategic plans to prepare for their events.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instruct</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Show students an example of a strategic plan for a test.</td>
<td></td>
</tr>
<tr>
<td>□ Identify the type of goals, strategies, and plan the student used</td>
<td></td>
</tr>
<tr>
<td>o Show that the student’s sample failed to engage in task analysis and didn’t have process goals</td>
<td></td>
</tr>
<tr>
<td>□ Explain it is important for them to identify what is difficult for them about studying in general: studying in an appropriate place, maintaining motivation, getting help when needed, maintaining motivation etc</td>
<td></td>
</tr>
<tr>
<td>□ Explain it’s also important to identify what will be on the next test, assess how well they know the information, and devise a plan to learn the information.</td>
<td></td>
</tr>
<tr>
<td>□ Explain that both of these plans are actually process goals</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Model filling out what’s difficult for me form and devising a plan to address those issues.</td>
<td></td>
</tr>
<tr>
<td>□ Model filling out study-guide pre-assessment form, conducting task analysis, and devising a study plan with process goals.</td>
<td></td>
</tr>
<tr>
<td>o Explain that various study tactics such as flashcards, mnemonics, &amp; concept maps help them learn information.</td>
<td></td>
</tr>
<tr>
<td>o Explain that it is important to structure environment, monitor behavior, and ask for assistance as needed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Practice</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Pass out Test Strategy Plan.</td>
<td></td>
</tr>
<tr>
<td>□ Ask students to fill out plan &amp; create a process for studying in general</td>
<td></td>
</tr>
<tr>
<td>□ Have students fill out study-guide pre-assessment</td>
<td></td>
</tr>
<tr>
<td>□ Students perform task analysis on study guide questions and write a study plan to learn the information on the study guide.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group Debrief</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Have students review the steps in generating a strategic plan</td>
<td></td>
</tr>
<tr>
<td>□ Have students explain the purpose of creating a plan.</td>
<td></td>
</tr>
</tbody>
</table>
**Module 5: Reflection**

**Objectives:**
- To teach students to attribute outcomes to use of strategic plan

| Connect & Engage | □ Ask students to explain how they decided which strategies to use to prepare for their history test. |
|                 | □ Ask them to explain how they evaluate the effectiveness of their studying techniques. |
|                 | □ Ask students to explain how their mistakes can help them learn. |

| Instruct | □ Explain to students that once they get their tests back it is important to reflect on their outcomes and connect their learning strategies to their outcomes. |
|          | □ Explain that they are going to go through five steps: |
|          | o Graph results |
|          | o Reflect on whether they met their outcome goals |
|          | o Reflect on how well they executed the learning strategies/process goals |
|          | o Reflect on whether the learning strategies were effective |
|          | o Reflect on whether they need to adjust future strategic plans |

| Model | □ Place a sample of the Test Outcomes Graph on the overhead. |
|       | □ Graph the score of a sample test. |
|       | □ Fill out outcome and process goal/learning strategies sections |
|       | □ Demonstrate how to determine effectiveness and how to make adjustments |
|       | □ Model attributions to internal and controllable things: strategy use, time, environmental structuring, maintaining motivation |

| Guided Practice/Independent Practice | □ Ask students to fill out the Test Outcomes Graph and Test Analysis Form. |
|                                     | □ Highlight the connection between outcome and strategy use |
|                                     | □ Have students attribute success/failure to use of effective strategies |

| Group Debrief | □ Ask students to explain how the use of the strategic plan impacted their grade on their test and their history class |
|              | □ Ask students to describe their feelings regarding their ability to learn history content |
|              | □ Ask students what have they learned about what it takes to prepare for history tests |
|              | □ Ask students what they learned about their attributions |
|              | □ Ask students how using the strategies (goal, plan, reflection) impacted their motivation as they studied & will impact their future studying |
## Test Outcome Graph

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Test/Quiz 1</th>
<th>Test/Quiz 2</th>
<th>Test/Quiz 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic</th>
<th>Test/Quiz 1</th>
<th>Test/Quiz 2</th>
<th>Test/Quiz 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual Grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days studied</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of minutes studied per session</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of minutes studied</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix G

Test Preparation Reflection Form
## Test Preparation Reflection Form

| Test Unit | 1. What was your goal for the Greece history test?  
2. Did you attain your goal?  
3. Where did you study?  
4. What time of the day did you study?  
5. With whom did you study?  
6. Check off the strategies you used to study below |  |
| --- | --- | --- |
| Study Strategies | **Rehearsal**  
- Read text book  
- Memorized information from study guide  
- Read over notes  
- Memorized flash cards  
- Other: **Organization**  
- Make timelines  
- Make outlines  
- Other: **Elaboration**  
- Explained concept maps yourself/partner  
- Made up own quiz questions  
- Wrote summaries  
- Other: |  |
| Types of Questions Missed |  
- Vocabulary questions ___  
- Matching___  
- Mapping ___  
- Multiple choice___  
- Listing facts__  
- Summarizing questions__  
- Sequencing questions ___  
- Comparing questions___  
- Other: |  |
| Future Adjustments | 1. What led to the grade you earned?  
2. What goal do you have for your next history test?  
3. What adjustments do you think you need to make to achieve your goals next time? |  |
APPENDIX H

Observation and Interview Transcripts
Anthony Observation #1

Interviewer: Anthony, tell me what you're going to do.

STUDENT 1: I am going to study by these words that are in yellow, highlighted words.

Interviewer: So you are going to do the highlighted words?

STUDENT 1: Yeah, about the highlighted words.

Interviewer: Go ahead and do what you're going to do, but think aloud. Now you've got some flashcards and the study guide, your history book, and your notebook. Now go ahead and tell me what you're doing.

STUDENT 1: (Writing words on index cards silently.) Now I'm writing down the highlighted words from chapter.

Interviewer: Are you going to write all the highlighted words or just some of them?

STUDENT 1: All of them.

Interviewer: Now are you writing the words and definitions or just the words?

STUDENT 1: Just the words.

Interviewer: What are you planning to do with the words?

STUDENT 1: Because these might be in the test. (Continues to make flashcards, putting several words on a card.)

Interviewer: Now is this a strategy you've used very often, or is this the first time you've used this strategy?

STUDENT 1: The first time. Mainly I just look at my study card and then I'll look at the whole chapter like a few times.

Interviewer: And you're trying this for the first time because you?

STUDENT 1: Because I just thought of it. I thought if I do this in science; let me do it in history.

Interviewer: Okay,

STUDENT 1: Can I use these on the test?
Interviewer: What I'm going to tell you to do is do as much of the test as you can without them and only use it for what you need? Does that make sense?

STUDENT 1: Yes? (Continues making cards, on post-it notes)

Interviewer: Do you know what the words mean that you're writing down?

STUDENT 1: Yeah.

Interviewer: As you're writing the words down are you thinking about anything? Are you focused on spelling? What's going on in your mind as you're writing?

STUDENT 1: I think that if I do this, the highlighted words, I'll get good on the test.

Interviewer: How many highlighted words are you going to do?

STUDENT 1: I am going to do the whole first chapter.

Interviewer: Do you mean section? (Nods) Show me what strategy you'll do after you finish that page okay?

STUDENT 1: nods

Interviewer: I think I should just do this page.

STUDENT 1: (Continues writing words, but not definitions)

Interviewer: What's the next strategy you're going to try?

STUDENT 1: Read the book. But I'll . . .

Interviewer: As you read the chunk what will you do? Go ahead and read aloud as you normally do, and tell me what you're thinking in your mind as you read. If you're not thinking about anything and you're just saying the words, you can do that too.

STUDENT 1: (Starts reading the section on geography--finishes the section on geography.)

Interviewer: What are you thinking about as you read that part?

STUDENT 1: I'm thinking I want to get this done. If I want to get the test, I have to study at least.

Interviewer: Is that what you're thinking about as you read?
STUDENT 1: Yes.

Interviewer: What are some other things you're thinking about as you read the information and the facts about the subcontinent or monsoons?

STUDENT 1: This is weird. Many things distract me, like things that are going by and like hunger.

Interviewer: So are you thinking about that as you're reading?

STUDENT 1: It distracts me so it's this stuff I try to get out of my head.

Interviewer: So were you thinking about the other things as you're reading.

STUDENT 1: Yeah it happens and I think focus, focus.

Interviewer: Is there another techniques you want to show me today?

STUDENT 1: I can't think of anything besides the computer.

Interviewer: Is there anything you have with those things there? (Study guide flashcards)

STUDENT 1: Sometimes, I just look there and there.

Interviewer: Can you show what you do with those? Tell me about those, how do you use those?

STUDENT 1: I would look at the question and then the answer.

Interviewer: Can you do a couple of examples for me and think out loud as you're doing it to show me what you're thinking as you're doing the flashcards?

STUDENT 1: Like say it but pretend like I'm thinking it?

Interviewer: Exactly.

STUDENT 1: Reads question. Reads answer.

Interviewer: So when you do the flashcards, do you just read them, or do you guess what's on the other side?

STUDENT 1: I just read them.

Interviewer: Is there anything else you'll do?
STUDENT 1: Sometimes my mom or grandma will quiz me. They ask the question, and I'll tell them the answer.

Interviewer: So that's it. Do you feel that's enough studying or do you want to show me some more?

STUDENT 1: That’s it.
**Student #1 Interview #1**

Interviewer: How have you done on the history tests in the past?

STUDENT 1: I didn't have any so.

Interviewer: In sixth grade?

STUDENT 1: Great, really great.

Interviewer: Why do you say that? Because I got mostly As and Bs.

Interviewer: How do you feel about the way you study for your history tests?

STUDENT 1: I feel fine with it because I'm comfortable with it. This is going to be like my sixth or fifth test.

Interviewer: Okay, how do you decide which strategies to use for your tests?

STUDENT 1: I use them.

Interviewer: How do you decide which one to use, like writing the words or using the flashcards or reading the book, how do you make that decision?

STUDENT 1: I'll think like should I use this one or should I use this one and I think of different ways it would help me.

Interviewer: When do you decide to use a flashcard versus the book?

STUDENT 1: Usually if the book says, if I'm not getting what the book says or if I can't find my book.

Interviewer: You use what?

STUDENT 1: I use my flashcards.

Interviewer: When would you not use the flashcards?

STUDENT 1: If I get the book or like there's another way.

Interviewer: How confident are you that you can get an A or B on your India test next week?
STUDENT 1: I think about 80-90% percent.

Interviewer: You're pretty sure. Good. How interested are you when you study for your history tests? Is that something you enjoy or is it hard for you to study for them?

STUDENT 1: I enjoy it because during the sixth grade I'll be learning how the humans started to the rise of Christianity.

Interviewer: And what do you think of that?

STUDENT 1: Great.

Interviewer: How do you decide how long you should study within a day?

STUDENT 1: I usually study like half an hour to an hour and a half.

Interviewer: How do you decide whether to stop at a half an hour or to go all the way?

STUDENT 1: When I feel ready.

Interviewer: When you're ready do you stay longer or do you stay shorter?

STUDENT 1: I usually stay shorter.

Interviewer: How do you decide where you're going to study?

STUDENT 1: It depends. Where it is quiet and I can get the most quiet and peace.

Interviewer: How do you decide when you're going to study? Do you have a time that you study?

STUDENT 1: I just think, I better start studying.

Interviewer: Do you have a regular time that you use or is it not a regular time?

STUDENT 1: It's not a regular time.

Interviewer: Which study strategies work best for your history tests?

STUDENT 1: I say the book.

Interviewer: Reading the book over and over?

STUDENT 1: Yes.
Interviewer: Why?

STUDENT 1: Because I can understand it.

Interviewer: You understand it better than what?

STUDENT 1: Flashcards

Interviewer: Are flashcards not helpful for you?

STUDENT 1: Yeah they are helpful. Yeah there's someone telling me the questions and giving me and I say the answer.

Interviewer: That doesn't help you?

STUDENT 1: Uh huh.

Interviewer: Okay. What do you do to keep yourself motivated to study when you would rather do other things?

STUDENT 1: I would eat something or do something fun and then get straight on to it.

Interviewer: So you let yourself relax a little bit first then you study. What strategies do you use when you don't understand or remember what you are studying for? How do you help yourself understand when you're not sure?

STUDENT 1: I ask somebody to help me understand.

Interviewer: Is there anything else you do?

STUDENT 1: I don't think so.

Interviewer: How do you keep track of what you should study for a test?

STUDENT 1: How do I keep myself?

Interviewer: How do you know what you need to study and how do you keep track of all that information?

STUDENT 1: I would usually; I would mostly try to stick it in my brain. Like let's take this in the brain.

Interviewer: So how do you know of all the information in the book, how do you know which parts to pay attention to?
STUDENT 1: I just say like in class, which part we like use most of the time. Which will we be using more? For an example, I think going to be using the third one like when the emperor started and like with all the achievements they made.

Interviewer: Anything else you use to help you keep track of the information.

STUDENT 1: I don't think so.

Interviewer: How do you know when you've studied enough?

STUDENT 1: I just like know it. I know everything. I don't need to do anything.

Interviewer: How do decide how well you've done on a test? What do you use to determine I did well or I didn't do good? What tells you yes I did well and no I didn't do well?

STUDENT 1: If I saw lots of errors like usually in the parts I knew. I think like wait a second, I must have got the wrong stuff.

Interviewer: You weren't thinking right? Is there anything else you use that helps you decide if you did well or not so well?

STUDENT 1: I don't think so.

Interviewer: What is the reason you got an A or B on a test? What makes you get an A or a B?

STUDENT 1: Studying hard, really hard and making sure I get most of them all right.

Interviewer: How do you feel about the grades that you earn?

STUDENT 1: I feel happy because if I good grades I get to pass to 7th.

Interviewer: What do you think you should do in order to do even better on the next test on the India test we're having?

STUDENT 1: What was the question?

Interviewer: What do you need to do to do better on the next test?

STUDENT 1: Like study more hard and actually if I get bad kind of relax first and then start studying.

Interviewer: Is there anything else about the way you study that you think I should know to help me understand how kids study and prepare for tests.
STUDENT 1: I don't think so.

Interviewer: If you come up with anything else you think you should have told me let me know because it really helps me understand students. Can I shake you hand to thank you? I appreciate your hard work.
Student 2, Observation #1

STUDENT 2: I usually start out looking at the study guide and I usually do a few questions. I don't do all the questions because that would be too much at a time. So I'll just do some parts, probably like the parts we haven't done for a while.

Interviewer: So you'll do the ones we haven't done in a while, okay so go ahead.

STUDENT 2: I'll start with geography. It (study guide) says describe the geography - I would look over here, in the book and scroll around it I see a picture, monsoons. It's describing the weather and that works for it. Then I look above it to see if there are any more facts about it. And it says monsoons are part of the India climate, so I got my answer right there. (She reads the answer, but doesn't write anything down.)

So number two says, explain where Indian people settled and why. So I'll turn the next page and see “Early Civilization” and I'll start reading right over there.

(Starts reading the passage.) So I'm guessing it started by the Indus River and got bigger over time. Continues reading. So people lived there because the supply of food and silt was good it was a fertile area.

(Starts reading again.) So they originally started by the Indus River and they started making other places like Mohenjo Daro and Harappa. So I think that's a pretty solid answer.

So number 3. Identify the following places on a map: reads the list of places. If I were to get a question like that I'll see if there's a map and do my best. I remember we had a map that we did I would take it out and practice taking it.

Interviewer: So you look at the map you did in class and look at a blank map and see if you can remember it?

STUDENT 2: Yes.

Interviewer: Okay.

STUDENT 2: Number four. Why is India considered a subcontinent? That was over here. (Reads the section on subcontinent.) So that's I just got my answer and I would write it down in brief notes. (Doesn't write it though.)

Goes to number 5. Describe conditions in monsoon. (Reads the section on monsoons.) So I guess that is what happened during the monsoons and explains what the wet seasons did and dry seasons did. It made the farmers happy so their crops would live.

Would you like me to start on religion?
Interviewer: You tell me would you normally do, one chunk at a time, or would you do more at a time?

STUDENT 2: I normally I do one and a half, and I go on and on.

Interviewer: Would you go through the whole thing at a time and then go through it again? How many times would you go through the study guide would you say?

STUDENT 2: Like three or four times.

Interviewer: All in one day or over a few days?

STUDENT 2: Like in two days. I would go through it and make sure. Actually for this I'm doing really good so far.

Interviewer: What makes you do well on this so far?

STUDENT 2: I guess I'm doing more and I'm trying harder to get focused and really read back in the text and get questions that would be on the test.

Interviewer: Do what you would normally do in one section.

STUDENT 2: Now we are on religion, similarities and differences between Buddhism, Hinduism, & Jainism. (Reads out of the text.)

So I don't go through the whole thing. I'll go through half the paragraph and learn a little bit about it. This section is asking about three different religions. I will skip to answer the different parts. I don't want to read the whole thing.

Interviewer: So you'll just skip around and read one section like on Buddhism?

STUDENT 2: Yeah.

Interviewer: And then would you skip to the next part of the question?

STUDENT 2: Yeah. (Reads section of the text about Buddhism.) When I read that it reminds me of emperor Asoka, because I remember Asoka was really religious. And then until he went into war and it was too much for him and it came to my head while I was reading that. I wanted to say that because a lot of things popped into my head as I was reading that, so that's good because I'm remembering.

Interviewer: Are there things or activities we did in class that help you remember as you're reading.

STUDENT 2: Yes. The wheel thing we did the karma, the outline notes that we do.
Interviewer: Why is that?

STUDENT 2: Because we're taking different parts of things and you're putting down the important facts, and I remember that and it will help me remember later on. I remember we did a whole bunch of things on Asoka, so that helped me remember.

(Reads a section on Jainism.) So I see this is different than all the other religions. Because Hinduism and Buddhism has more than one god. This one had 24 different gods. That's a main fact to know for the test because it's different. (That was wrong, there were 24 saints, not 24 gods. Hinduism and Buddhism are not both polytheistic. So she didn't understand some of what she read.)

(Reads next questions on the study guide.)--I remember for the Four Noble Truths and Eight-Fold Path that there are all those rules for the religion. I'm guessing if you break those rules it will really mess you up.

(Continues reading.) Reads a section on Hinduism. So that's basically for the afterlife you meet Brahmin in the after life and that's what happens in the afterlife and that describes what happens in the afterlife. Which I remember we did that in class for the activity, so we did that in class.

So right about now I would kind of like to do the next part that says, “What is Buddhism?”

(Continues reading.) So like part of the thing in their religion is giving up desires and trying to help one another and you'll get good in return.

(Continues reading.) So I'm guessing it really didn't say much about it. It said you'll reach Nirvana, but it didn't say much about it.

Interviewer: Yeah, like what is Nirvana.

STUDENT 2: So it didn't really give me much information. So I'll read this other part and maybe it will give me more information. (Continues reading.)

So it says like you have to be reborn into new lives. I guess when you die you're reborn into a new life. It doesn't give much information as much as Hinduism. Probably if I was going through this I'd see if anybody else thought about it and see if I'm not getting it and see if somebody else got it. I probably go up to a friend and see. I would usually stop right here.

Interviewer: Why would you stop here?

STUDENT 2: I could start another. I usually do it by the numbers I like to do six or seven.
Interviewer: So and that's about twenty minutes.
Student #2 Interview #1

Interviewer: How have you done on tests in this class in the past?

STUDENT 2: I've done good, but I feel like I haven't done my best.

Interviewer: How would you describe your success when studying for tests in history?

STUDENT 2: I think I've done pretty good, but I haven't . . . I feel like I could do better.

Interviewer: Do you feel like you very successful, sort of successful, or not very successful when you are studying?

STUDENT 2: Sort of successful.

Interviewer: Why do you say that?

STUDENT 2: Because I'm not really, really smart where I get As on every quiz, but I do pretty good.

Interviewer: What kind of goals do you make when studying for tests in history?

STUDENT 2: To . . . most likely to study a lot and to get a good grade on my test.

Interviewer: How do you decide which strategies to use when studying for your tests?

STUDENT 2: By how long it is. Like if it's a long section I'll study longer than a shorter section that we have.

Interviewer: What grade do you want to get on your next test?

STUDENT 2: Hopefully a B.

Interviewer: How confident are you that you can get a B?

STUDENT 2: About 75%.

Interviewer: How interested are you when studying for your history tests?

STUDENT 2: I'm interested from religion and achievements, but not so much geography and politics because I don't know . . .
Interviewer: It's not that interesting?

STUDENT 2: Yeah.

Interviewer: How do you decide how long you need to study when studying for a test?

STUDENT 2: Probably about twenty minutes to thirty.

Interviewer: How do you decide that amount of time?

STUDENT 2: If I feel like I need to do more work on something I'll stay longer on it. If I feel like I'm doing a good job I'll just stop.

Interviewer: How do you decide where and when you'll study for your test?

STUDENT 2: Probably . . . where I'll be at?

Interviewer: Um Huh.

STUDENT 2: Probably just in my room like the evening time because that's when I like to study.

Interviewer: How do you decide when you're going to study?

STUDENT 2: I guess I feel like I study when I have the most troubles in something.

Interviewer: Which study strategies work best for history tests?

STUDENT 2: Probably just looking back in the test and the study guide.

Interviewer: What do you do with the text and the study guide?

STUDENT 2: I like to go back and write stuff down and remember it and learn more so I can do good on my test.

Interviewer: How do you determine which studying techniques to use when studying for test in history?

STUDENT 2: Like what techniques. . . how do I know?

Interviewer: Yes

STUDENT 2: If I think that I'm not going to do very good and that I'm not good in this area then, I'll probably work more harder on it. If I do good on the area, I'll think I'll do good and I'll usually do.
Interviewer: What do you do to keep yourself motivated to study for tests in history class?

STUDENT 2: I think about my future and education, and I want to have a good one.

Interviewer: What strategies do you use when you're not understanding or remembering something for a test?

STUDENT 2: I'll look back in the text, or I'll ask a friend about it.

Interviewer: Is there anything else you use?

STUDENT 2: I guess I'll go back in my journal and stuff and see activities that we did.

Interviewer: How do you keep track of what you need to study for your tests?

STUDENT 2: By writing it down and if I know I studied that, I'll like go back to it later if I need more help on it.

Interviewer: How do you know when you've studied enough for a test?

STUDENT 2: When I'm really tired and I feel like I already know too much, and I want to take a break.

Interviewer: How do you decide how well you've done on a test?

STUDENT 2: By my grade and how much effort I put into it.

Interviewer: What's the reason you got the score you earned on your last test?

STUDENT 2: Because I haven't . . . . I don't think I worked as hard as I wanted to and I'm hoping I do better on my next test.

Interviewer: How do you feel about the score you earned?

STUDENT 2: I feel okay, but I think I could have done better.

Interviewer: What do you need to do to do better on your next history test?

STUDENT 2: Study harder.

Interviewer: Thank you
Student 3, Observation #1

STUDENT 3: I usually just say the name and guess what the answer is I usually look in the back and I say whatever the answer is.

Interviewer: Go ahead a do what you normally do.

STUDENT 3: I usually just do two a day.

Interviewer: Go ahead and do what you normally do.

STUDENT 3: Like I'll do two answers, for the 8-fold path

Interviewer: Do what's right for you.

STUDENT 3: The first one you have to know what the four noble truths are. And I'll just look at it (looks at flashcard) reads flash cards. The next day I'll do another two.

Interviewer: Do what you normally do. Why do you put it on that side?

STUDENT 3: Because I've already done it.

Interviewer: Okay

STUDENT 3: Reads flash cards---what's the 2\textsuperscript{nd} noble truth. Tries to say it. Reads it-life is full of suffering. . . Describe conditions. . . .Usually I will add new cards. The ones that are easy. I'll add hard cards. My mom said these are the hardest cards and that I should do these first. I am better at these.

Interviewer: So you'll have more time to review them? That's a great idea. So now what are you doing? What's that set you're picking up?

STUDENT 3: Yeah. These are the ??? So I need to put these here?

Interviewer: So what does that one say?

STUDENT 3:I (inaudible)--adds one new card. I pick whichever one is hardest. This is the easy pile. Flipping through cards.

Interviewer: Tell me what you're thinking.

STUDENT 3: I'm thinking--whichever one is the hardest.

Interviewer: What makes it hard?
STUDENT 3: The words and how it's put together. Like I don't really know the 8-Fold Path and what it means. So I usually take that one.

Interviewer: Are you going to take just one more card?

STUDENT 3: Most of these are easy?

Interviewer: What makes them easy.

STUDENT 3: How the words are put together and if I know them.

Interviewer: Are you saying you know all those things there?

STUDENT 3: Mostly.

Interviewer: So are you trying to find the ones you don't know?

STUDENT 3: Mostly. (flipping through his flashcards.) So I need to read this person and the one that is printed. It's the one that I say like... is written like guru is a teacher. I need to put a little more information. Like what a guru does and what they teach. So I usually... If there's something wrong if I put too little or too much information I change it.

Interviewer: Is that something you want to do now?

STUDENT 3: No. That's something I do later. That's usually how I do it.

Interviewer: Is there anything else?

STUDENT 3: No.

Interviewer: Now I'd like you to just study. Whatever you say to yourself, I'd like you to say aloud.

STUDENT 3: A guru is a teacher that teaches... I think it's Hinduism or something like the religion. Describe conditions during the monsoon. In the... a monsoon is when it's really wet and during the dry season it's really dry... and like you get so hot... monsoon have lots of rain. When it's dry season it's... the contributions of the Harappans. I think they made cotton... and bronze, copper, tools, clay pottery.--reads the flashcard.

Buddha is a prince named... reads card--born in Nepal. I think he married a person... reads card. Describe civilization of Monjenho Daro... reads card. reads question and answer... Reads card---not checking to see if answers make sense... Where did people settle? Near a church--(doesn't make sense--why didn't he comment on that?) --(kicking his feet all the time...--reads questions and then reads answers--
doesn't have a way of recalling them. Not processing information after he reads the answers.) That's usually how I do it.

Interviewer: Do you do one and then you stop?

STUDENT 3: Yeah. Usually I do it over and over and over until my mom tells me to stop.

Interviewer: So you mom tells you when to start and stop?

STUDENT 3: Yeah.

Interviewer: Is there anything else you want to show me?

STUDENT 3: No.
Interviewer: How have you done on tests in your history class before?

STUDENT 3: I think I have been doing . . . some . . . I don't know how. I've been doing one way and then another way.

Interviewer: What do you mean by one way and another way.

STUDENT 3: I try to do it one way, and then I try to do it another way, and I want to see and compare which way is better.

Interviewer: Okay. What kind of grades are you getting on your history tests?

STUDENT 3: I don't know?

Interviewer: You don't know . . . do you know if you're getting As or Bs or Cs or less than a C?

STUDENT 3: I think on the first one I've been doing . . . I didn't know what I was doing and I kept on going up and then I have been . . . then I know what I'm doing.

Interviewer: Do you feel good about the grades you're getting on your history tests or do you feel there are things you want to improve?

STUDENT 3: I think there's stuff I want to improve.

Interviewer: You want to improve because you're not . . .

STUDENT 3: I don't feel like I'm doing good.

Interviewer: You don't feel like you're doing good on your history tests? How would you describe your success when studying for your history tests?

STUDENT 3: For my self?

Interviewer: Do you feel good about it?

STUDENT 3: Yeah.

Interviewer: Okay. What makes you successful when you study?

STUDENT 3: When . . . I think when I try to do. When I'm working on some things. I get to. Then I get . . . um . . . I get use to like the name is. Like what like Asoka what his religion was. Then on the test . . . on the real one, I will know easily what he people did or something.
Interviewer: So you see your success based on what you're trying? So do you think you're very successful on your history tests, okay or sort of successful when you study, or not successful when you study?

STUDENT 3: Sort of successful.

Interviewer: Why do you say sort of successful?

STUDENT 3: Because sometimes I get nervous. Like I might mess up on something and then I don't know it. I don't know that I mess it up.

Interviewer: Until when?

STUDENT 3: Until I get it back.

Interviewer: So, you sort of feel successful. So when you do feel successful are there things you do you feel successful about.

STUDENT 3: Yeah.

Interviewer: What do you feel successful about?

STUDENT 3: I feel successful about hard working. . . people are like . . .

Interviewer: When you study you feel successful?

STUDENT 3: When I study I like try to get some stuff inside my brain.

Interviewer: And that helps you feel successful?

STUDENT 3: Yeah.

Interviewer: What kind of goals do you make when you study for a test? Like today you studied. What kind of goals did you have when you started? Or did you. What were you thinking about . . . like . . . this is my goal.

STUDENT 3: I think my goal is to get at least a C.

Interviewer: So you had a goal to get a C on your test.

STUDENT 3: Yeah.

Interviewer: Do you have a goal when you sit down to study, like a little goal for that day? Like right now did you have a goal about what you were going to study about?
STUDENT 3: Yeah... I was going to study about the eight-fold path and stuff.

Interviewer: So you goal was to know about the eight-fold path.

STUDENT 3: Yeah the whole thing.

Interviewer: So that's your big goal right now to know all those things?

STUDENT 3: Yeah.

Interviewer: How do you decide which strategies you're going to use when you study? Because you used flashcards today, how did you decide to use flashcards?

STUDENT 3: When you said that we should use flashcards to do our work.

Interviewer: Because we've been doing it for homework?

STUDENT 3: Yeah, we've been doing it for homework.

Interviewer: Are there other strategies you want to use?

STUDENT 3: Yeah.

Interviewer: What else?

STUDENT 3: Like make pictures and you could do it the way like we've been doing like the vocabulary... we've been doing...things. I don't know...

Interviewer: So are there... so

STUDENT 3: You could...you could... you could um... like... the vocabulary put the picture then the word, then anything and they you explain it. Then you make a picture.

Interviewer: Based on your studying so far in what you know about, how confident are you that you can get a C or better on your next test? How do you feel about that?

STUDENT 3: Excited.

Interviewer: Excited? Do you feel confident that you can do that or are you a little unsure?

STUDENT 3: A little unsure.

Interviewer: A little unsure. Why?
STUDENT 3: Sometimes . . . um . . . there could be times I could um . . . like just . . . get so nervous that I can't really think straight.

Interviewer: So it's because you get anxious on the test, but without worrying about the test, do you feel confident that you know the stuff or do you feel confident that you know (DOES he know what confident means???)

STUDENT 3: I feel confident.

Interviewer: How interested are you when you study for your tests? Is it something that you are interested in or is it something that is hard for you to focus and pay attention?

STUDENT 3: I think . . . is some stuff that I know.

Interviewer: So is it interesting? So you're pretty interested?

STUDENT 3: Yeah.

Interviewer: On a rating of 1 to 10, 1 being I'm not interested I hate it, and 10 being I can't wait to think about it. Where are you?

STUDENT 3: 10

Interviewer: 10. . . oh okay. How do you decide how long you are going to study for your quizzes and tests?

STUDENT 3: Until the test. I could do like . . . sometimes I do my homework, and then I usually look in the book and read some stuff so I can get some information.

Interviewer: How do you decide how many minutes you're going to study?

STUDENT 3: I don't know. I just know how long I'm going to study.

Interviewer: You just feel like?

STUDENT 3: I just feel like . . . until I get kind of bored and then I need to do my other homework.

Interviewer: So you kind of mix it up? How do you decide where and when you are going to study for your history tests?

STUDENT 3: Usually, when you tell me when.

Interviewer: So when I say to start studying you start?
STUDENT 3: Yeah.

Interviewer: So when did you start studying for this test?

STUDENT 3: I don't know. I don't really count days.

Interviewer: Was it this week or was it earlier?

STUDENT 3: I think it was earlier. I think.

Interviewer: How many days would you say you've studied already?

STUDENT 3: About... that's hard. I haven't actually been counting the days.

Interviewer: Is today the first day you've had your flashcards all done like that or did you already have them?

STUDENT 3: Um. I think this is my first day.

Interviewer: It's the first day... It's okay. you're not in trouble... I'm just asking...

STUDENT 3: Well actually I've been doing that since we started the study guide with the study guide

Interviewer: With the homework? Have you reviewed them after you've done them, or have you just put them to the side?

STUDENT 3: I've been reviewing them.

Interviewer: How do you decide when you study?

STUDENT 3: I forgot.

Interviewer: Do you know when you study?

STUDENT 3: No.

Interviewer: Do you have a pattern about... or do you study whenever you feel like it?

STUDENT 3: Whenever I feel like it.

Interviewer: Which study strategies do you think work best for your history tests?

STUDENT 3: It's the um... flashcards is easier...
Interviewer: Than what?

STUDENT 3: Than the vocabulary word . . . boxes.

Interviewer: The vocabulary boxes work for you too. Are there other strategies you've tried that don't work well for you?

STUDENT 3: No. All strategies work well for me. . .

Interviewer: All strategies work for you. That's good. How do you decide which study strategy to use? Whether it's vocabulary boxes or flashcards or anything else you've tried?

STUDENT 3: I don't know. . . . I just use any strategy I find in my brain.

Interviewer: Do you have a way of deciding, this one works good, but not this one?

STUDENT 3: Yeah.

Interviewer: How do you decide that?

STUDENT 3: I usually just . . . use the . . . actually I just use . . . one strategy and then another strategy and see which one is better. (Does he know what strategy means?)

Interviewer: And what tells you which one is better?

STUDENT 3: By how easy it is.

Interviewer: What makes something easy.

STUDENT 3: How long it takes to do one or two

Interviewer: Flashcards?

STUDENT 3: Yeah.

Interviewer: What do you do to keep yourself motivated to study when you'd rather do other things?

STUDENT 3: I don't really know.

Interviewer: You don't know . . . okay. What do you do, what strategies do you use when you don't understand or remembering what you learned in class?
STUDENT 3: I think this stuff in my notebook is some ways... I could like... the... um... I think it's those things where you write down... roman numerals.

Interviewer: The outline?

STUDENT 3: Yeah the outline.

Interviewer: Tell me about that. How does that help you?

STUDENT 3: It helps me by knowing what happened and what happened next.

Interviewer: How do you keep track of what you need to study?

STUDENT 3: I keep track by... I don't know how I keep track.

Interviewer: You don't know how you keep track...okay. How do you know when you've studied enough for a test?

STUDENT 3: I just do it... stop whenever I want to.

Interviewer: How do you decide how well you've done on a test?

STUDENT 3: I think it's when... some... I think it's when it gets... harder and I think... I'm weared out.

Interviewer: You're worn out?

STUDENT 3: Yeah. I'm worn out.

Interviewer: What's the reason you get the grades you get on your history test? What's the reason behind and A or the reason behind a B or a C.

STUDENT 3: I think it's... just how I try and how good I've been doing.

Interviewer: What do you mean by how good you've been doing?

STUDENT 3: Like the scores will tell me how good I've been doing and how I've been studying.

Interviewer: Okay. What do you need to do to do better on your next history test?

STUDENT 3: Maybe try another way, so that next year I will know what type of things I could do.

Interviewer: What do you mean by another way?
STUDENT 3: Another. . . another ways to try to do tests?

Interviewer: Besides what?

STUDENT 3: Besides the other strategies I’ve been doing.

Interviewer: Which strategies are those?

STUDENT 3: Like the flashcards and the . . . I forgot the other . . . ones.

Interviewer: Like the vocabulary boxes?

STUDENT 3: Yeah. . . I could have do the Roman numerals.

Interviewer: Oh the outlining. . .

STUDENT 3: Yeah the outlining. That would help me.

Interviewer: Is there anything else about how you study or studying for tests in general that you can think of that I haven't asked you that you think I should know?

STUDENT 3: No. . .

Interviewer: Do you generally study with your mom or do you generally study alone?

STUDENT 3: I generally study with my mom.

Interviewer: So does you mom tell you when to start and stop and all that. You don't tell yourself?

STUDENT 3: Yeah. I don't tell myself.

Interviewer: So do you ever study by yourself?

STUDENT 3: Sometimes I study by myself. Sometimes I don't.

Interviewer: So when you study by yourself is it something that you do by yourself and you tell yourself to start studying or does your mom tell you to start studying?

STUDENT 3: Sometimes my mom tell me to start studying and sometimes I go straight to it.

Interviewer: You just do it yourself?

STUDENT 3: Yeah.
Interviewer: Thank you so much Student 3. I appreciate all your hard work.
STUDENT 4: Starts reading out of the text.

4:13-4:15 (Starts to ask himself questions): What valley did Chandragupta take over and what was the name? The Ganges River Valley. When did he find the Mauryan Dynasty? 326 BC. What is the name of the capital? Paliputra. Okay, now I can read.

4:18-4:21 (Reads text and finds answers to questions in text.) No I don't think it was necessary to use the largest military because it's more killing and more bloodshed. Time for Emperor Asoka. Reads from text again.

4:22-4:23 (Reads and then summarizes) So Emperor Asoka became non-violent. He didn't like bloodshed and he was energetic personality. He ruled from 273-232 BC. He was the only ruler to follow Buddhists, become a Buddhist and follow Buddhism and probably followed the 8-fold path.

4:23-4:24 (Reads) Before I go on I want to see what virtues are. Looks in glossary. I need a dictionary. Gets a dictionary. Looks up the word virtue. Rereads the text with the word virtues.) So he did follow the 8-fold path.

4:28-4:29 (Reads) A good way to remember Asoka is that he's generous and just think of . . . inaudible. I need to find another biography. Yeah ... who invented . . . Bhagvad Gita primary source. (Reads aloud).

4:29-4:30—(Reads & summarizes) So Gupta mathematicians invented the numbers--remember it is was adopted 470 AD, not BC.

4:30—(Resumes reading) So a Kal is famous for the cloud messenger poem. . . . reads to himself. Then reads aloud. I don't really need that. But just in case.

Interviewer: Are you reading that because you found a date?

STUDENT 4: No, mostly because of what they did and how. . . . I just want to know what date just in case it asks. I also want to know about it. But also if it has someone who was important or something like that.

(Resumes reading.) So the Gupta understood (reads to himself)

Disc 2

0:00-1:54. If the test asks what musical instruments were included I would say lutes, drums, tambourines. When was zero minted? 8500??? (Reads to himself. Then reads aloud.) So basically they pose the Buddhist figures.
2:50 (Reads aloud again.) So this is 88000 verses. (Reads) . . . so this was 100 BC and the Rahamayana . . . looks at a section to read. (Reads aloud)

3:52- (Reads map... so reads the map to himself. . . skips around text. Gets up, goes to his backpack. Takes out his notebook.)

Interviewer: What are you doing over there?

STUDENT 4: I'm seeing if we are studying certain places on the map. I'm going to quiz myself on the biographies and then I'll. . . I’m going to read about people

Interviewer: Is this normally how much you study at one time or do you study shorter or longer that this or is this normal?

STUDENT 4: This is normal. I'm going to study a little bit longer. Reads again

5:46-(Reads a question out of the text and answers by looking at the map.) Ganges River and maybe the Indus River.

Read another question, flips to find answer. I don't get that?

Interviewer: What don't you get?

STUDENT 4: Reads the question again. I had to read the question again, flips to find answer. There's more pillar and the height is bigger.

Interviewer: What do you mean by pillars?

STUDENT 4: Pillars are described right here.

Interviewer: What do you mean by height?

STUDENT 4: The pink (on the map).

Interviewer: Okay.

STUDENT 4: (Makes up question.) Which ruler had a big military and why? Not Asoka he didn't like bloodshed. Changragupta because he was a successful and truthful ruler. He had a great army because of his weapons and the people he had. Let's see if that's somewhat right. Reads the book and checks his answer. Mmm kind of right.

STUDENT 4: Who attacked the overlords and what era? Asoka? No. Changragupta in 305B.C. no it was 317B.C. in 305 B.C. they tried to retake 317 Overlords over took. Repeats 2 more times.
How long did Asoka have power? 273-272 B.C. Oh, 273-232 B.C. Kind of . . . I need to remember 232 B.C.

Before you read this make a prediction. You already read this in class. Try to remember what you read in class and make a prediction. My prediction is think of some facts you know will be in there. Well Asoka he let Hindus practice their own religion and made many stupas. Reads again. There's probably a question on the history test. Who do historians think is the greatest king? Asoka . . . (Stops and thinks to himself). Asoka generous Changragupta. . .a fighter and a good king, but Asoka was not. That was good.

(Reads Asoka section again. ) He was very generous. So it's highlighted so it's probably going to be on a test. Stupas are like a mound like a baseball mound. So a stupa is like a baseball picture stands on a mound. Like Sponge Bob. It's a dome like where Sandy lives. That's kind of easy, and it makes it fun.

Interviewer: Do you always do that were you make connections between what you're learning?

STUDENT 4: Yeah. It makes it fun. I always do that.

Interviewer: Who taught you to do that?

STUDENT 4: I taught myself because when I was studying one day I saw Sponge Bob and other shows and made connections and realized that how people . . . something was related to those shows and that started helping me remember most of the things.

Interviewer: How did you do on your test after you did that?

STUDENT 4: I did it in the ending of fifth grade. It was the STAR test I was trying to remember stuff, but it didn't have a lot of those questions, so I applied to one of the first history tests that we had and I got a B+ or something and it made me do a lot better than I would I have done if I didn't compare.

Interviewer: Do you feel like you're ready to do the interview, or are you ready to do more studying?

STUDENT 4: I'm ready.
Student 4, Interview #1

Interviewer: So here we go this is C on February 24 and this is after he has studied for the India test. And so the first question I have for you today is how have you done on tests in this class in the past?

STUDENT 4: Meaning what?

Interviewer: Like what kind of grade?

STUDENT 4: I've got Bs. I've got A. I've got um probably only one probably one C. But for like writing I get better grades when I'm on the computer, but I get them in late. I guess since I take some grades down I get more Cs for writing so.

Interviewer: How about in history?

STUDENT 4: History, I get mostly As and Bs.

Interviewer: Okay. How would you describe your success when studying for tests in this class?

STUDENT 4: A lot better.

Interviewer: Than?

STUDENT 4: When I don't study. The only time I got a C on a history test was when I didn't study.

Interviewer: And you still got a C in there.

STUDENT 4: Yeah on the history test.

Interviewer: What makes it successful?

STUDENT 4: As I said on the other thing, connections and when I ask myself questions like this and I read a lot over and over and read different parts instead of reading the whole paragraph. Like reading parts before and parts that like other parts like chunks that are not supposed to come first. But, I read the last part, then I read the first part, and then I read the middle part. Then I read the last part again, and it makes me remember it all in one big chunk in my own words.

Interviewer: Okay. What kind of goals do you make when studying for tests in history?

STUDENT 4: Well, I make sure I... for goals, I make sure I that I get what I'm saying, and I get what I'm doing, studying about. Instead of like studying and not
getting stuff. Like I use dictionaries and stuff when I don't know what certain things mean or certain words and yeah.

Interviewer: How do you decide which strategies you're going to use when you study for your history tests?

STUDENT 4: I decide. I decide by telling myself... the lesson like how hard like how hard it is and I do like harder studying and yeah.

Interviewer: So Caleb you decide by what?

STUDENT 4: I said I decided by how hard it is, how hard the lesson is, and if it is hard I do more advanced things.

Interviewer: Like what kind of things are advanced?

STUDENT 4: Like I say things over and over and over and over and over and over.

Interviewer: So repeating makes it advanced?

STUDENT 4: Yeah.

Interviewer: Are there other strategies you use?

STUDENT 4: Yeah, I also write it a lot. . . write it a lot down and then I fold my paper up and then I ask myself questions and I look at what I wrote in here. And then I look in the book. And then I see what my answer was in here and I my questions.

Interviewer: How confident are you that you can get an A on your next test?

STUDENT 4: Very confident.

Interviewer: How interested are you when you study for your history tests? Is it something that you like and they you enjoy studying?

STUDENT 4: Yeah, I like studying because of ancient stuff and like it's fascinating about what we're doing now is based on what they did and how . . . yeah . . .

Interviewer: How do you decide how long you're going to study for your history test?

STUDENT 4: Well . . for how long the lessons are?

Interviewer: What do you mean by lessons? Like, the book lessons?

STUDENT 4: The lessons you give us.
Interviewer: Okay, so if our lessons are long you study. . .

STUDENT 4: I study a little bit longer. If it's short I still study a little bit longer, but if it's super short I study a like short just like a little bit, short.

Interviewer: How do you decide where you're going to study and when you study for your history tests?

STUDENT 4: Well I really don't decide. I just sit down and do it.

Interviewer: Is it something you come up with or is it something that somebody else tells you to do?

STUDENT 4: Something I come up with.

Interviewer: You come up with . . . Generally, do you study like the day of . . . right before . . . or do you take a few days? What's your general pattern?

STUDENT 4: I usually study two or one or about two days before. And then I on a second day I also ask questions to myself. Like.

Interviewer: Just like you did today?

STUDENT 4: Um huh. I ask questions about the other day. Instead of reading at all, I ask myself questions on the first day I studied and also with the book. And then I ask questions about what I remember and then after all the questions I answer and then I wrote down the answer and look at the book.

Interviewer: Okay. Which studying strategies do you think work best for this class for tests in history?

STUDENT 4: Um, well I think my best have been the ones I've done so far.

Interviewer: So the ones where you question and read and ask questions?

STUDENT 4: Yeah.

Interviewer: And how do you determine, how do you know that that's the best versus others? Have you tried others?

STUDENT 4: I've tried others.

Interviewer: What others have you tried?

C: I've tried just putting them on flashcards. Like in 5th grade for history stuff I just put them on flashcards. I tried writing them down on in the sentences. I tried lots. . .
Interviewer: So reading is the best way for you versus the other strategies?

STUDENT 4: Yeah.

Interviewer: How do you keep yourself motivated to study for tests when you'd rather do other things... especially for your history tests?

STUDENT 4: Well, I really don't need to because I think it's fascinating so...

Interviewer: So it's just interesting on its own. And what do you do? What strategies do you use when you're studying and you don't understand something?

STUDENT 4: Well it depends if I can find a dictionary.

Interviewer: So you use dictionaries? Are there other things you use besides dictionaries?

STUDENT 4: Yeah, well when I'm doing my other homework and stuff I like... remember something on the computer and I ask about. I'll go to the like the dictionary on there and do my homework and I'll look up that word and I'll finish my homework and I'll try to remember what that means, so on the test when it asks what it means I'll know.

Interviewer: And how do you keep track of what you should study for on a test. How do you know which things to pay attention to from day to day?

STUDENT 4: Mostly if it's highlighted and important names and what they invented. Yeah.

Interviewer: How do you know that the names and the dates and the highlighted things are important?

STUDENT 4: Because on the test it's usually always what's highlighted and who invented that or which king or did this and which order did they rule in and on the map and stuff. Where was this and yeah.

Interviewer: How do you know when you've studied enough for a test?

STUDENT 4: Well, when I'm tired of talking to myself.

Interviewer: And that's how you know. Are there any other ways you're aware?

STUDENT 4: Also when I'm... like get a mini headache...
Interviewer: Okay, so that's when you're tired or you get a little headache. Is there anything else that tells you well yeah I know this I have studied?

STUDENT 4: Um, when I'm like just reading it over and over and I keep turning the pages back and forth and yeah I know this stuff and yeah.

Interviewer: How do you know you're done?

STUDENT 4: I keep reading the same sentences, and I'm looking somewhere else.

Interviewer: Okay, you're not focused. Okay. So how do you decide how well you've done on a test? What tells you I did well?

STUDENT 4: Well, not just my grade because even if I got a bad grade I'll still think I did well because I tried my hardest and did my best work.

Interviewer: So if you tried?

C; Yeah. If I tried.

Interviewer: Is there anything else that tells you?

STUDENT 4: Yeah also by the way I write. Because if I don't want to do a test, I will write random things, so I'll write sloppy and write random stuff.

Interviewer: Yeah, you did that one time when we had that sub. What is the reason you get the test scores. What causes you to get the As, Bs and the Cs and stuff.

STUDENT 4: Because it's interesting and it's not just boring.

Interviewer: So what else makes you have a D versus a B?

STUDENT 4: Well it has I can understand this more and there's more time in it and it teaches a lesson all by its own (inaudible) so it teaches a lesson. Plus it's interesting and stuff and I can understand it.

Interviewer: How do you feel about your grades in history class?

STUDENT 4: Good.

Interviewer: And what do you want to do on this next test were having next week? What's your. . . What do you want to improve upon?

STUDENT 4: well. Mostly my mapping.

Interviewer: Do you have a plan on how you're going to study the mapping part?
STUDENT 4: I haven't studied it, so basically tomorrow I'm going to ask myself questions about it.

Interviewer: Okay so you'll ask yourself questions. Is there anything about how you study that I haven't asked you that you think it's important for me to know?

STUDENT 4: Sometimes at nighttime when I'm laying down, sometimes I talk to my brothers and sometimes I talk to myself when everybody is asleep if I can't go to sleep. I talk to myself about history and stuff and other stuff.

Interviewer: So you talk to your brothers about what?

STUDENT 4: Like what does this . . . like my bigger brother, not my little brother. I talk to my bigger brother about . . . since you have been in sixth grade what is this and he'll say . . . he'll say something and my other brother will change the topic and when they . . . and then I'll let them go to sleep and I'll start talking to myself about something else.

Interviewer: Do you learn how to study from your older brother?

STUDENT 4: Well, not really.

Interviewer: Have you learned to study from your mom or your dad?

STUDENT 4: Well, I've never really seen them study. . . Well, I've seen my dad study. But my mom is usually at work.

Interviewer: Is there anything else you want to tell me?

STUDENT 4: No.

Interviewer: Well thank you very much. This is the end of our first time.
**Student 5, Observation #1**

Starts reading the textbook--geography section
--not looking at the pictures
--not stopping to check for understanding
--not summarizing
--not asking self questions
--not using study guide to guide where reading--starts from the beginning of the chapter

0:00-4:12
Interviewer: Can I ask you a question? Can you tell me how you are deciding what you are reading? Are you reading it all in sequence or are you skipping around?

STUDENT 5: I am skipping around. I am trying to get the highlighted words.

Interviewer: Oh you're reading the highlighted words.

STUDENT 5: Yeah and a little bit after that.

Interviewer: So you're jumping around from highlighted word to highlighted word.

STUDENT 5: Yeah.

Interviewer: What's telling you that that's what you should be paying attention to?

STUDENT 5: I noticed that when we have a test, I mostly see the highlighted words, so I want to make sure I know what they are so I can answer them on the test.

Interviewer: So what are the things that you do to help you know that you know?

STUDENT 5: I mostly... I just read it and I can go back to it and read over it again. Sometimes I'll go stop and go over it.

Interviewer: I just wanted to make sure I understood what you are doing. Go ahead and resume.

Begins reading again:
continues to skip around as reads

5:23-16:08

Interviewer: Now STUDENT 5, let me ask, would you normally read that much at a time?

STUDENT 5: No
Interviewer: What would you normally do?

STUDENT 5: Normally I would just keep going on if I don't understand something I just keep going on and see if I understand it later.

Interviewer: What would you normally do next? Would you read the text as you have or would you do something else?

STUDENT 5: If I got it, well I would go to another page.

Interviewer: Is there anything else you would do beside read it, are there other strategies you are using?

STUDENT 5: Well. I kind of just do that. If I do different things I get mixed up.

Interviewer: You've got your notebook out. Is there something you were going to do with your notebook?

STUDENT 5: Just the stuff that we do in class, I sometimes go over.

Interviewer: The circle thing? Show me how you would use the circle thing.

STUDENT 5: I would like see what the definition of it is and how they explain it.

Interviewer: Give me an example

STUDENT 5: Brahmin-- this show that Brahmin is here but can't see him. I would look at the picture and see if I understand it.

Interviewer: Take a look at the picture and tell me what's happening in your mind as you look at the picture.

STUDENT 5: I see that if you can't see him. You would think of him as like water. It says how Brahmin is here but you can't see him, so I'd think he was like air.

Interviewer: Show me another section and what else you would think about.

STUDENT 5: Like karma, it shows karma give money. I look at money and think that it's karma.

Interviewer: So the picture makes you think of money?

STUDENT 5: The picture. . . I would memorize the picture and I would cover up the name and I would see if I remembered.
Interviewer: So give me an example of how you would memorize it.

STUDENT 5: I would cover up the name, see the picture and see if I could remember it.

Interviewer: Do that for the next picture and let me see how you do it.

STUDENT 5: I would cover it up and see the stages and see what samsara is I would see the teenager and see what it is.

Interviewer: So what does samsara mean?

STUDENT 5: Like reborn if you died.

Interviewer: Would you say that would be about what you would do look at the things in the notebook? Is there anything else you would use?

STUDENT 5: The note we take in class.

Interviewer: What would you do with them?

STUDENT 5: I would read over them and look at the book and see if . . . and review things.

Interviewer: Because the book and the notes are similar?

STUDENT 5: Yes, I would see if I have it right.

Interviewer: Is there anything else you want to show me that you do?

STUDENT 5: No, that's it.
**Student 5, Interview #1**

Interviewer: How have you done on your history tests in the past?

STUDENT 5: I did not do very good on the last one, but on the one before that one I did pretty good.

Interviewer: What would you say are the type of grades you normally get?

STUDENT 5: B-, As. I want to get an A this time.

Interviewer: How would you describe your success when you've studied in the past? Has the way you've studied been successful for you?

STUDENT 5: I think I'm doing different, how I study, because I haven't been doing very good.

Interviewer: So you're changing the way you study? How did you used to study before?

STUDENT 5: I used to just like just read the highlighted words and not read everything. You know how I was reading after. I would just read the definition of the highlighted word.

Interviewer: Oh. So now you know you need a little bit more than the word? Okay. Is there anything else that you would say is different?

STUDENT 5: I never really used flashcards, but now I'm using the flashcards we've been doing.

Interviewer: How have you been using them?

STUDENT 5: I would... my mom or someone would read the question and she would read the answer on the back and I would tell her it and she would make sure it's right or wrong.

Interviewer: How's that going?

STUDENT 5: Pretty good. I haven't been doing it lately though.

Interviewer: Why do you describe your studying as not been that successful before?

STUDENT 5: Before I felt like I didn't study enough, because I didn't get a good score.
Interviewer: It wasn't so good before because of the amount you studied or the way you studied?

STUDENT 5: I think it was the amount.

Interviewer: How much did you study before?

STUDENT 5: I would say probably three times a week.

Interviewer: Three times in a week and for how long each time?

STUDENT 5: I did other homework. Like I would do it real quick. . . study it real quick.

Interviewer: Like five minutes? Ten minutes?

STUDENT 5: Yeah.

Interviewer: What is the longest you did before today?

STUDENT 5: Probably ten minutes.

Interviewer: What kinds of goals do you generally make when you study for a history test?

STUDENT 5: Like um. When I study I try to close the book and see if I would get right.

Interviewer: Remember it?

STUDENT 5: Yeah. I would see if I made the goal.

Interviewer: Give me an example of a goal. How would you word a goal?

STUDENT 5: I would read it and I would see if can remember it.

Interviewer: So you would try to summarize it or repeat it word for word?

STUDENT 5: I would try to summarize a couple of them like these.

Interviewer: Were you doing that today as you were reading, or were you just reading today.

STUDENT 5: I was mostly reading. I like to do that the day before the test.

Interviewer: You like to read the whole thing?
STUDENT 5: Yeah.

Interviewer: When do you do the reading and summarize and the reading and summarize?

STUDENT 5: Like a couple of days before the test.

Interviewer: How do you decide which strategies to use when studying? How do you decide whether to read the whole thing, or read and summarize, or look at the notes or use flashcards and all that?

STUDENT 5: I mostly just think when the test is, and then I just think of different strategies I can do.

Interviewer: You just kind of make up a list?

STUDENT 5: Yeah I just kind of make up what to do, and like I said the day before the test I would just read over it. I think that's better for me.

Interviewer: Okay. Your goal is to get an A on the next test?

STUDENT 5: A or B+.

Interviewer: How confident are you about that at this point?

STUDENT 5: I'm feeling kind of in the middle. I'm not sure what I'll get. I'm trying to see.

Interviewer: Would you say you're studying more on this one than the last one?

STUDENT 5: Yes, because I didn't like my last score, I want to do better.

Interviewer: How interested are you when you study for a history test? Is it something that you're like this isn't so bad, I don't mind reading or is it I hate it this is miserable?

STUDENT 5: I don't mind it. It's pretty... once I start reading it I get into it.

Interviewer: What I noticed initially when you were reading... at the beginning when you were reading the geography stuff. I could tell you were like ah... because you were skipping around more. Then when you read about Buddha and Siddhartha you seemed interested because you read the whole thing and didn't skip anything and your voice you read faster a little bit. I noticed that. What are your thoughts on that?
STUDENT 5: Yeah, I think that I was more interested in that Buddha and all this stuff.

Interviewer: The religion stuff was interesting. . .

STUDENT 5: Yeah. But in the beginning I kind of thought I knew about it.

Interviewer: So you knew it so you were skipping more. . . Oh that's interesting. How do you decide how long you're going to study?

STUDENT 5: I think if I'm done with my other homework and I have time like for (inaudible) and all that so I'll study and then maybe before bed or while I'm in bed I'll study again.

Interviewer: So you squeeze in the studying in between the stuff you have to do the next day.

STUDENT 5: Or that day.

Interviewer: How do you decide where you're going to study? Do you have a specific place?

STUDENT 5: I usually study in the kitchen, or if it's too noisy I'll go in my room.

Interviewer: How do you decide the kitchen? Do you prefer the kitchen?

STUDENT 5: That's where I'll mostly do everything. It's mostly quiet in there. There's stuff in the front room.

Interviewer: Is it just you at home?

STUDENT 5: I have a little sister.

Interviewer: A little sister.

STUDENT 5: She can be really annoying.

Interviewer: So you go in there. . . How do you decide when you study? Generally speaking when do you decide to start to study. You knew you had the test last week.

STUDENT 5: Sometimes I will read out of the book even if I don't know about a test.

Interviewer: Okay so you're doing it a little bit at a time.

STUDENT 5: Yeah if I knew a week before. . . I'll keep on going.
Interviewer: So did you study this weekend?

STUDENT 5: Yeah a little bit.

Interviewer: So do you prefer to study right after school, in the morning, at lunch, before your regular homework?

STUDENT 5: I do it after my regular homework. I do for a separate class. Then I decide to study.

Interviewer: Which study strategies would you say work best for your history class?

STUDENT 5: Well the other ones weren't so good, so I think this one will probably make my score go good.

Interviewer: Reading the whole thing or most of it?

STUDENT 5: Reading most of it . . . yeah.

Interviewer: How do you determine which ones you're going to use . . . which strategies you're going to use?

STUDENT 5: I just look . . . I just do a test and then I see what the score is . . . and I'll think I should keep studying like that or I should go on to a different strategy.

Interviewer: So the outcome of a previous test determines what you're going to do the next time.

STUDENT 5: Yeah, I'd like to get better scores.

Interviewer: Has anyone guided you in terms of which strategies you should use . . . read or use the flashcards or is that your decision?

STUDENT 5: That's just what I'm doing. I'm deciding.

Interviewer: Do you talk it over with your friends at all and ask them what they do?

STUDENT 5: I mostly ask Aurelia because she's in my class, and I'll ask her and see what she does. Are there other kids you ask?

Interviewer: Are there any other kids you ask?

STUDENT 5: Bailey . . . yeah, she tells me a couple.
Interviewer: How do you keep yourself motivated to study for your history test when you're not feeling like it?

STUDENT 5: I just think about how I need to get a good grade, and I say okay I need to study.

Interviewer: You can make yourself focus a little bit. What do you do when you're not understanding or remembering what you're studying or reviewing?

STUDENT 5: Sometimes I ask my mom if she understands it and I'll ask her.

Interviewer: And then what happens?

STUDENT 5: She'll sometimes understand what goes and she'll go here (notebook) and look at what we did in class.

Interviewer: Are there any other strategies you would use?

STUDENT 5: I would just go on to something else and study and not get it and then the next day in class I'll see if we go over it.

Interviewer: Okay, so you'll see in class. How do you keep track of what you need to know for the test?

STUDENT 5: Well, um.

Interviewer: How do you know what you need to study for class?

STUDENT 5: I mostly study what we mostly do in class, and what we learn about in class.

Interviewer: Do you know... another way to know what's on a test or what will be on a test?

STUDENT 5: I just think about the last test and see what was on it. Like I know that highlighted words will be on there. I just mostly study those.

Interviewer: How do you know when you've studied enough for a test?

STUDENT 5: If I study more that like an hour or something... I think that's enough for me.

Interviewer: So it's about the time. Is there anything else that tells you... I don't need to study anymore?
STUDENT 5: If I get everything . . . If I get what I'm reading I'll just say okay I'll study tomorrow.

Interviewer: So if you've read a section and you know it enough you can let it go.

STUDENT 5: Or I'll read a lot of sections and see if I get them.

Interviewer: How do you decide how well you've done on a test?

STUDENT 5: Do you mean like . . .

Interviewer: So when you get a test back, what tells you I did well or I didn't do so well?

STUDENT 5: For a couple of the tests I think I did pretty good for me.

Interviewer: So what told you I did good?

STUDENT 5: Well the studying told me I did good.

Interviewer: So the studying. . .

STUDENT 5: Yeah.

Interviewer: Is there anything else that tells you, you did good?

STUDENT 5: Not really. I mostly think about studying, and how I do with studying.

Interviewer: Does that mean how well you focus when you study or . . .

STUDENT 5: How well . . . it tells me that studying really helps me because I used to not study a lot. I just told myself that studying would help a lot for a test.

Interviewer: What's the reason you got the last score you got on your last history test?

STUDENT 5: I think it was not studying enough, and not using the right strategies for me.

Interviewer: How did you feel about the score you got last time?

STUDENT 5: I felt really bad. . . . like my dad was going to get mad about the score and he would think that I wasn't studying.

Interviewer: Was it true that you weren't studying?

STUDENT 5: I wasn't studying enough.
Interviewer: You tried, but not hard enough?

STUDENT 5: Yeah.

Interviewer: What do you think you need to do to do better next time? You have a little more time before the test tomorrow what do you think you need to do?

STUDENT 5: Probably study a little bit more tonight when I get home. In the morning maybe I'll go in the book a little bit more.

Interviewer: Is there anything else you want me to know about the way you study, so I can understand you?

STUDENT 5: I think I said everything.
STUDENT 1, Observation #2

STUDENT 1: I'm going to first do flashcards, then do study guides, then read chapters in the book.

Starts making flashcards.

Interviewer: As you do that tell me what you're thinking about, what you're writing and why you're writing it.

STUDENT 1: I almost wrote a bad word the as__ word. I almost wrote that. I don't believe I almost wrote that. That happens to me lots of times. I get an accident. I will give a paper to my teacher and she'll say, uh what is this and I think book, but it says brook, because I want to get done so fast.

Interviewer: Can you tell me what you're doing right now.

STUDENT 1: I'm making flashcards of Hunag He. I'm doing the highlighted words.

Interviewer: What did you put on your plan. What kind of stuff are you doing? Take a look at your study guide.

STUDENT 1: It tells some of the rivers here. It says Huang He and Shang Jian on number 15, 9, and 12.

Interviewer: So you're going to make flashcards of highlighted words are there anything else you think you should make flashcards of?

STUDENT 1: I think that's it because these are the main important ones.

Interviewer: What does this tell you? (points to the study guide)

STUDENT 1: Write the definitions.

Interviewer: What is the purpose of this paper, the study guide?

STUDENT 1: The questions are related to that which is going to help. I have to write. Continues writing several words on flashcards. Is the distance going to be on this test?
Interviewer: Has it be on other tests? That's a good indicator of whether it will be on this test. What types of things would you have to know about the Huang He based on what you've had to know about rivers on other tests?

STUDENT 1: You mean if I was doing other tests? Like example say if it was Egypt. It would depends on if it tells about a river. If it's a country it would show... An example if it was China... Egypt is right here and China is right here... it's many, many miles.

Interviewer: Go ahead and do what you were going to do.

STUDENT 1: Continues making flashcards--reading things out of the book.

Interviewer: What do you have there?

STUDENT 1: The two rivers--Chang Jiang and Huang He.

Interviewer: Explain to me how you're doing your flashcards.

STUDENT 1: I will do the highlighted, I will first... I put Huang He known as the Yellow River and 4,342 miles.

Interviewer: Do you have them on the same side? Do you have more than one word on a card?

STUDENT 1: Yeah. I usually can have more than one word on a card. I can get two to four words on a card. Rarely four, but usually two to three. continues making cards.

Okay I just finished my first flashcards. I think I should be done by 3:40. When I see that it reminds me of the aristocrats movie. It's kind of crazy cats. So aristocrats where just officials,

Interviewer: Are you still writing cards of the highlighted words. Can you tell me what you're writing on the cards.

STUDENT 1: Write now I'm writing aristocrats--warlords and royal officials of the king. Pictographs Chinese writing.

continues reading and writing. I don't get why they're not showing the Shang. I think the Shang should be highlighted

Interviewer: Do you think you should add it if it's important?

STUDENT 1: Well, it's not highlighted.
Interviewer: What else tells you it's important beside the highlighting.

STUDENT 1: They ruled 1750BC-945 BC. That's 700 years.

Interviewer: Is there something else that tells you it's important besides highlighted words?

STUDENT 1: The emperors.

Interviewer: Is there something your teacher gave you that tells you what's important and what to pay attention to when you're studying?

STUDENT 1: Not that I know of.

Interviewer: Really?

STUDENT 1: I'm looking right here and I'm looking at all the emperors. Right here Wu. See the Shang controlled for that many years and Wu and Zhou and Wu only ruled for 800 years.

Interviewer: One person or his family.

STUDENT 1: His family. The Qin only was him. Because people hated him.

Interviewer: So you're naming all these families is there something in there that you that you might do flashcards.

STUDENT 1: Yeah. I'll do that when I get home. I'm going to do Wu Wang. Because he defeated Qin.

Interviewer: Look here--points to the study guide. If it's in the book and it's in the study guide what do you think that means?

STUDENT 1: I'm copying. I should not be writing this. If it's there, I don't need it twice.

Interviewer: If it's on the study guide, what does that mean?

STUDENT 1: I don't know.

Interviewer: What is a study guide?

STUDENT 1: It helps you with a test, so you can study.

Interviewer: So guess what. What do you think you should do?
STUDENT 1: Stop doing this? (making flashcards)

Interviewer: No, it's okay that you do that.

STUDENT 1: Continues making flashcards. I might actually be able to do five of these. I have two more lines. I'll be able to fit.

Interviewer: Are you adding things that aren't highlighted?

STUDENT 1: No. Bureaucracy sounds like crazy.

Interviewer: Yeah, bureaucracies are a little crazy.

STUDENT 1: Continues making flashcards. I think I'm done because there's only one more word. Which is Dao. It is a think that it's the gods telling you what the gods want (wrong).

Interviewer: Now that you've got your flashcards, what are you going to do with them? Show me how you use them.

STUDENT 1: I sometimes test myself. I'm like I put down and I try to remember what that it.

Interviewer: Can you give me a few examples?

STUDENT 1: Turns card over, states, "Huang He river was know as the Yellow River it connected to the Yellow Sea. It was 2,900 miles long. Checks card, I was right-- Chang Jiang River connected to East China Sea and was 3, 400 miles long and I was right again! And I keep doing these until I get one wrong and then I would do it again and see if I got it right.

Interviewer: How would you use your study guide in relation to that?

STUDENT 1: I would just read it for an hour.

Interviewer: Can you give me an example of how you'd use it?

STUDENT 1: I would read it like, Shang D

Interviewer: What would you do?

STUDENT 1: I would get rid of them?

Interviewer: Is there anything else?

STUDENT 1: Like throw them away. Just not use them.
Interviewer: Anything else?

STUDENT 1: No.
STUDENT 1, Interview #2

Interviewer: How do you think you did on the last history test, the India test?

STUDENT 1: Good because I only nine wrong which got me a B.

Interviewer: A B- minus. How did you do when you were with Ms. Johnson and Ms. J.? Did you have to ask for very much help or did you know a lot of them?

STUDENT 1: I knew a lot of them.

Interviewer: Did you have to use your other resources very much or just a few times?

STUDENT 1: Just a few times because I basically remembered most of it.

Interviewer: How would you describe your study strategies from the last test? Were they as good as you want them to be or do you feel like you can do better.

STUDENT 1: I think I can do better on this China test. I have goals of at least five or less on this test.

Interviewer: How do you describe your studying success?

STUDENT 1: I get my goals achieved that would be great.

Interviewer: Did you achieve you goal last time?

STUDENT 1: Yeah because my goal last time was ten or less

Interviewer: And you got less than 10.

STUDENT 1: Yeah, but I wish I got more less, like five wrong.

Interviewer: What kind of goals did make when studying for this test?

STUDENT 1: My goals are to at least get five or less wrong that will make my mom proud, because when I get bad grades she is like what is this grade and she starts a whole hour yelling at me. And I'm like come on it's just a D. Like when I (inaudible) two times I got Ds and I'm like oh great, now my mom is going to yell at me and she is like why do you have a D? I'll be in my room.

Interviewer: So the kind of goals you make are to not miss very many and it's like a number wrong. Are there any other types of goals you make?
STUDENT 1: That's it.

Interviewer: How do you decide which strategies to use when you study?

STUDENT 1: It depends on the test. If it's too hard I'll use hard strategies and if it's too easy, I'll use easy strategies.

Interviewer: What's a hard strategy and what's an easy strategy?

STUDENT 1: A hard strategy is I really think I need to make flashcards.

Interviewer: Flashcards are a hard strategy?

STUDENT 1: Yeah and easy strategy is just basically... Actually this is easy with just remembering them. Like a hard strategy is reading in the book for two hours, which I will do.

Interviewer: What make it hard?

STUDENT 1: I have to remember all that, but if I fear something. Like when you sleep you usually lose memory. I am like mom, what did I have for dinner last night. And she is like pasta and I'm like oh thank you.

Interviewer: Are there other ways you can figure out when you're going to use one strategy versus another?

STUDENT 1: I don't know I just like thinking and I choose which ones I want.

Interviewer: How confident are you that you can miss five or less on the next test?

STUDENT 1: I feeling good, really good.

Interviewer: Why?

STUDENT 1: Because I know most of this already. There are three levels of society, merchants which sell good, but they are looked down on in China. Farmers who were like at the top government, because they sold food to people. Then there were aristocrats, highly officials that were under the king.

Interviewer: How interested are you when you are studying for you China stuff?

STUDENT 1: Pretty good. I like your history class so much I think that at the end of the year I might want to do a whole outline on the whole book.

Interviewer: How do you decide how long you're going to study? Like today you said, "I'm going to study until 3:40." How did you decide how long.
STUDENT 1: It depends on . . . when I am ready . . . when I think I am ready for it . . . I am ready.

Interviewer: You are ready to start or stop studying?

STUDENT 1: It depends like when I think I am ready to stop studying. I do that but when I feel that I need to start studying again, I just doing until I feel like I don't need to study.

Interviewer: How do you decide when and where you'll study?

STUDENT 1: It depends on where the most quiet place I can get to.

Interviewer: And what about when?

STUDENT 1: Usually in the afternoon, not at a late time like 9:00.

Interviewer: So what time is the best time for you?

STUDENT 1: Usually between 3:00-4:00, 5:00 I would usually study.

Interviewer: Which study strategies work best for your history test?

STUDENT 1: I would say study guide, flashcards, and reading the book.

Interviewer: You've increased the number since last time. You know that. You know what you said last time?

STUDENT 1: What?

Interviewer: The book.

STUDENT 1: Oh yeah I did.

Interviewer: Wow, what about that? That's cool.

STUDENT 1: Oh yeah, I've increased it by two.

Interviewer: How do you determine which studying techniques to use when studying for your test?

STUDENT 1: I think about which one is easier, flashcards. I think my last test I used my strategies and I think I know these ones worked and these ones didn't.

Interviewer: What didn't work last time?
STUDENT 1: Last time I think it was none of them.

Interviewer: You didn't do flashcards last time did you?

STUDENT 1: No, but when I need a new strategy for the next test, I think this did good, this didn't do good.

Interviewer: How do you keep yourself motivated to study for tests?

STUDENT 1: I did it in elementary school, my teachers let me have a snack. For the CAT test or STAR test. They let me have crackers.

Interviewer: So snack help you feel motivated?

STUDENT 1: Yeah and may be some water and bathroom breaks and just relaxing.

Interviewer: What strategies do you use when you're not remembering or understanding?

STUDENT 1: I use my . . . these. I look at my flashcards and study guide.

Interviewer: So you keep looking at them?

STUDENT 1: Only like questions I don't remember good.

Interviewer: How do you know which ones you can't remember?

STUDENT 1: I usually try to think a few minutes and then I look at the resources and see if I have one about it.

Interviewer: How do you keep track of what you need to study?

STUDENT 1: Keep track of study?

Interviewer: Keep track meaning, how do you know what are the things you know and what you don't know? How do you keep track of what you know and what you don't know?

STUDENT 1: I usually put them. I have this huge cabinet file. I have history like whoomp. Like in my mind and I'm like China--whoomp and I look in the file and then.

Interviewer: Like a file in your brain or a file on paper?
STUDENT 1: A file in your brain. Like for example. Sea, Yellow Sea. Is connected to the Huang He River.

Interviewer: Good. How do you know when you've studied enough for a test?

STUDENT 1: I just like. . . when I feel ready I just think I know this. How many more questions?

Interviewer: Three. How do you decide how well you've done on a test?

STUDENT 1: Can you repeat the question?

Interviewer: How do you decide how well you've done on a test?

STUDENT 1: Say if I'm looking at my facts. Like I do before a test. I look at my facts and see if it's right then I check it. . . check it twice and then I bring to the thing.

Interviewer: When you get your tests back how do you decide how well you've done on the test?

STUDENT 1: Depends on the grade.

Interviewer: So your grade tells you?

STUDENT 1: Yeah.

Interviewer: What's the reason you got the score you got on your last test? Why did you miss nine?

STUDENT 1: I didn't have many resources.

Interviewer: You didn't have enough resources when you were studying?

STUDENT 1: Yeah.

Interviewer: How did you feel about that score.

STUDENT 1: I was like ugh. . . I should try better next time.

Interviewer: What do you think you need to do better on this test than the last test?

STUDENT 1: Get more resources and keep my energy ready

Interviewer: Anything else?

STUDENT 1: That's it.
Interviewer: Okay, thank you.
STUDENT 2, Observation #2

Interviewer: So tell me what your what your thoughts are today. What your plan?

STUDENT 2: Today I'm thinking about going through this (Test reflection preparation sheet) and see the ones I know and I don't know.

Interviewer: So tell me which ones in particular.

STUDENT 2: 15, 16, and 17.

Interviewer: Are you going to focus on all of them or you going to focus on a couple of them? You've got about fifteen minutes.

STUDENT 2: Just a couple of them because it takes a while.

Interviewer: Which ones in particular?

STUDENT 2: Let's see 15 & 16. (Geography)

Interviewer: This one is to explain how China's development led to it's development.

STUDENT 2: The only thing I can think of is the trading system. But that's the only thing that comes to my head.

Interviewer: What do you think would be the best way to study that? Read about it or use other things.

STUDENT 2: You could read about it or talk to someone who knows and have them explain it to you.

Interviewer: Are there some other things you can do?

STUDENT 2: (Long pause). . . You know how you have the GRAPES chart; you can look at that stuff.

Interviewer: Go ahead and do what you're going to do now that I know what you're thinking about.

STUDENT 2: (Goes to the book. Cell phone rings.) I remember. Is it okay if I stop? (Reads and adds something from another question.)

Is it okay if I stop right here. I found something about social system. I didn't know about it before. It's something about the aristocrats. I didn't know merchants were lower than the peasants. I thought they were more in the middle.
Interviewer: Do you remember why?

STUDENT 2: No, I kind of remember that the farmers were really poor like hobos.

Interviewer: Well, not exactly. But they didn't have any money.

STUDENT 2: Do you think they worked on the farm too?

Interviewer: Why are farmers more important?

STUDENT 2: Because they make the food and they get money for selling the food, kind of like trading.

Interviewer: Do you see why they're important?

STUDENT 2: Yeah because we'd all be starving. There's one question. That's number 24.

Interviewer: Do you want to change from 14 & 16?

STUDENT 2: Yeah. Here's number 25. It shows what life is like for following groups of people in Chinese society. I already know farmers had hard work and had to harvest food for their land. The merchants . . . they are like poor people and don't have much.

Interviewer: What does a merchant do?

STUDENT 2: Let's see (looks in the book) I'm guessing that the aristocrats are higher than them . . . because it's saying that . . . (reads aloud). Is it like for the social class of merchants?

Interviewer: They are a group of people who have certain jobs and that put them in the merchant class.

STUDENT 2: Oh, okay.

Interviewer: Do you think they are poor or do you think they have money, but aren't respected?

STUDENT 2: I think they have money . . . I don't think they have money, but they're trying to do something with their lives. (Doesn’t appear to really understand what a merchant is.)

(Goes back to reading.) I remember about the aristocrats. They made a lot of money but nobody liked them because of how they made their money.
Interviewer: Do you remember how they made money?

STUDENT 2: Something about land and land owning. (Reads in book for more information.) They made farms to grow crops. (Writes additional notes on study guide.)

Interviewer: Now that you've got all that squared away. What would you do to make sure you remember it?

STUDENT 2: Like usually I'll go out later that night or later that day and I'll quiz myself on it.

Interviewer: Will you show me how you'd quiz yourself?

STUDENT 2: I'd take a random piece of paper and I'd write farmer and dash sign then merchants, and aristocrats and the last one is man, which I haven't gotten yet. Then I'd ask myself what did the farmers do and how they were important. Then I would write down well . . . They harvested food and they were important because of that. Then for the merchants I would ask what they did. I know off the top of my head they had a role but they weren't as important. They didn't really have much, so they couldn't really do much. They had shopkeepers, trade, and bankers.

Interviewer: Can you remember that or is that something you need to write down?

STUDENT 2: I need to write. Now I'm going to go to the aristocrats and they sold land and made a lot of money. So right now I am going to work on what men did. I'm not really sure what they did. I don't remember reading about it. I'm going to . . . found the section about men.

Writes--men grew crops for their family and that's it. So then I would be done. (Doesn't go to the test reflection sheet to indicate which items she's learned and hasn't learned.)
STUDENT 2, Interview #2

Interviewer: How did you do on the last history test?
STUDENT 2: I did okay, but I didn't do my best.

Interviewer: Why would you say that?
STUDENT 2: Because I felt that I rushed through it.

Interviewer: You rushed through the actual test?
STUDENT 2: Yes.

Interviewer: How did your studying impact you last time?
STUDENT 2: It wasn't really good, but it was okay.

Interviewer: Why do you say that it was okay?
STUDENT 2: Because there could have been, I could have used more techniques to do it and I didn't do the techniques that would help me learn better.

Interviewer: So you didn't do the ones you should have done?
STUDENT 2: No.

Interviewer: What kind of goals have you made for studying for the China test?
STUDENT 2: I made goals that I could reach to and ones that I'm going further into do instead of my bad goals. I'm going to get good goals.

Interviewer: What are the types of goals? What are some examples of the goals?
STUDENT 2: To study harder and to get my grade up.

Interviewer: Are there any other types of goals you've learned to make?
STUDENT 2: Studying goals like what to remember and how to study doing that.

Interviewer: How do you decide what type of strategies to use when studying?
STUDENT 2: By how long the chapter is and how much information I need for it.

Interviewer: Can you give me an example?
STUDENT 2: If it's . . . if one section is really long, I'll split it up into chunks and work on those. I don't work on the whole thing. I separate it into chunks.

Interviewer: How confident are you that you can get an A or a B on your next test?

STUDENT 2: Pretty confident.

Interviewer: How interested are you as you study for your test?

STUDENT 2: I'm interested in certain subjects, but I like it.

Interviewer: Overall?

STUDENT 2: Yeah.

Interviewer: How do you decide how long you need to study?

STUDENT 2: How much I need to work on it. Like usually I'll study 15 or 20 minutes.

Interviewer: At a time or in general?

STUDENT 2: At a time.

Interviewer: How about in all?

STUDENT 2: An hour. . . no like a couple of hours.

Interviewer: How do you decide when and where you'll study?

STUDENT 2: I'll study around 5:00 at night. I'll study in my room because it's more quiet and I can focus.

Interviewer: Why at 5:00?

STUDENT 2: Because I like to study right when I get home. I like to study when it's kind of . . . I do all my homework right after wards so now when I do that I don't have to rush.

Interviewer: Which studying strategies work well for tests?

STUDENT 2: Looking back at the textbook and using the study guide.

Interviewer: How do you use your study guide? What are some strategies?
STUDENT 2: I go over the questions and look them up in the book and sometimes write them on flashcards.

Interviewer: How do you do your flashcards?

STUDENT 2: I write down the question and then I have somebody tell it to me and then the questions I mean the answers will be on the back.

Interviewer: How do you determine which studying techniques to use when studying for tests in this class, whether to use flashcards or other things?

STUDENT 2: If I feel that the chapter is hard or easier for me.

Interviewer: You so what?

STUDENT 2: If it's harder, then I'll study more. If I feel like I know most of it already then I'll just I'll study every once and while, but I won't study as much as I do.

Interviewer: What are other studying techniques you've used besides flashcards?

STUDENT 2: I like to look back at my outlines and I like to go through there and go through my study guide questions and stuff.

Interviewer: How do you keep yourself motivated to study for tests in this class?

STUDENT 2: Because I like to think how my grade will go up and I can get up to the next grade and stuff.

Interviewer: What strategies do you use when you're not understanding or remembering what you need to learn for this test.

STUDENT 2: I'll ask somebody or look back in the textbook.

Interviewer: How do you keep track of what you need to study for this test?

STUDENT 2: When I already know something I'll put it in flashcards like I said and the stuff I didn't know. Then I'll make them and then I'll know them.

Interviewer: So you use the flashcards. Is that new or is that something you've used before?

STUDENT 2: I've used it before, but not as much. Now I'm trying to use it more.

Interviewer: How do you know when you've studied enough for a test?

STUDENT 2: When I feel tired.
Interviewer: Is there anything else that tells you that you're done.

STUDENT 2: My brain feels like I know it and I'm ready . . . to settle down.

Interviewer: How do you decide how well you've done on a test?

STUDENT 2: By the effort I've put into it.

Interviewer: Anything else?

STUDENT 2: By how much I well I think I studied.

Interviewer: What's the reason you got the score you earned on your last history test?

STUDENT 2: Because I went by . . . I rushed through it all and I didn't really focus on the questions and try . . . I rushed through it to get it over with.

Interviewer: How did you feel about the grade you earned last time?

STUDENT 2: Not very good.

Interviewer: What do you think you need to do to do better this time?

STUDENT 2: Slow down and study more.

Interviewer: Okay, thank you.
STUDENT 3, Observation #2

Interviewer: Go ahead and go as you would normally go. Just tell me what you're doing as you do it.

STUDENT 3: You mean what I usually do?

Interviewer: Yes.

STUDENT 3: I've been searching for the definitions on the internet for the stuff I don't know and the stuff that's not in the book.

Interviewer: Tell me about the papers you have out.

STUDENT 3: These are the papers I usually have.

Interviewer: What are they?

STUDENT 3: This is the study guide and this is thing that helps me with the questions I know and the questions I don't know.

Interviewer: Can you tell me what your plan is for your studying time today?

STUDENT 3: Just going to study, get some more information.

Interviewer: Do you need more information or do you already have information on your study guide?

STUDENT 3: I have some information on my study guide.

Interviewer: Okay, can you tell me your specific plan, what are your steps?

STUDENT 3: My steps are to just kind of . . . get some information if there's more than one, like if there's more other dynasties besides Shang. . .

Interviewer: Well this study guide tells you what is on the test, so if this is what's going to be on the test, do you need to get more stuff or do you . . .

STUDENT 3: No.

Interviewer: Because you can focus on just what's on the test for this? Tell me about your papers here and tell me how you're going to use them.

STUDENT 3: I'm going to use yellow paper to figure out each day what types of questions are really hard for me and which ones are really easy.
Interviewer: Okay, once you figure out what's hard, then what will you do?

STUDENT 3: Each day I will study the ones that are hard and come back to the easy ones.

Interviewer: So today are you going to do the ones that are hard?

STUDENT 3: Yeah.

Interviewer: Go ahead and show me which ones are hard for you.

STUDENT 3: I usually just do this and close my eyes and answer each and every question.

Interviewer: Okay, now that I understand what you normally do, go ahead and do it. Think out loud.

STUDENT 3: Reads the vocabulary words--closes eyes and answers. Shang--Mandate from heaven, they usually. This is actually a little hard.

Interviewer: So if it's hard, then what are you going to do?

STUDENT 3: I'm going to circle that it's hard.

Interviewer: Okay, do you have your pencil?

STUDENT 3: (Circles #1 in the don't know section.)

Interviewer: How about number 2?

STUDENT 3: The Silk Road . . . through China and goes through India, Egypt Japan, not sure about Japan and Mesopotamia and most of Asia.

Interviewer: Is that right? Does that mean you know it?

STUDENT 3: Yeah.

Interviewer: So what would you circle?

STUDENT 3: Number 3--Legalism--what everyone has to follow and if you don't follow it you'll have a consequence . . . I don't know. It's a little bit hard and a little bit easy.

Interviewer: So which one would you circle?

STUDENT 3: The hard one, because maybe later I'll get it right.
Interviewer: How about Confucius?

STUDENT 3: He is a man who's not violent, and wants everybody to be nice to each other. He started Li, which is the basics of being nice and trustworthy.

Interviewer: What do you think about that one?

STUDENT 3: It was easy. Number 4--Qin he is the opposite of Confucius he is mean to people and he wants things to be in his way. I think he always wants war.

Interviewer: What do you think of that one? That one is hard.

STUDENT 3: Filial piety, that one is hard. Censors, that one is hard.

Interviewer: I'm going to stop you here Brent. Remember when we talked about chunking in class?

STUDENT 3: Yeah, we have to do parts. We’re not supposed to do everything. We're supposed to stop after a paragraph. Don't do the whole thing. Just do a little at a time.

Interviewer: The same is true when you're studying. See here you've got five hard things circled. Do you feel like you should do the whole list or should focus on these and work on a chunk at a time?

STUDENT 3: A little bit.

Interviewer: Should you continue on or should you just focus?

STUDENT 3: I'm just going to do the definitions.

Interviewer: Do you need to go through all the definitions right now or should you focus on a few.

STUDENT 3: a few.

Interviewer: So what's your plan? What's step 2. Step 1 was to find out what you know and what you don't know. What's step 2?

STUDENT 3: Step 2 is to study the hard ones.

Interviewer: Tell me what studying the hard ones would look like.

STUDENT 3: I usually write it and I look through the textbook.
Interviewer: Show me what you'd normally do.

STUDENT 3: The first one is the Shang dynasty. (Writes the word in the notebook and looks it up in the textbook. Flipping through chapter pages randomly. He is not using the index or table of contents. Read text aloud about Shang.) That's actually interesting.

Interviewer: Does that explain who they were?

STUDENT 3: No, just what they found. (Continues reading.) That's something . . . it says when they ruled. (Does not look at his study guide, which already has the answer written on it.) Write some more notes about the Shang Dynasty.

Interviewer: Is that enough or do you need to write more?

STUDENT 3: That's enough. I don't want too much.

Interviewer: What's next?

STUDENT 3: Legalism. The main idea . . . reads aloud . . . harsh laws and strict punishment, so I was a little bit right.

Interviewer: Do you remember the guy?

STUDENT 3: Hanfezei. Should I write that one?

Interviewer: What do you think?

STUDENT 3: Hanfezei made it up, yeah.

Interviewer: Okay, now what?

STUDENT 3: I'll go on. I'll go through that. When I get here, it gets kind of tricky. I don't really close my eyes.

Interviewer: You just read it?

STUDENT 3: Yeah, and I usually write it on a white board because I have a white board and I can't . . . I can't usually write all of it.

Interviewer: Now that you've written these ones that were hard for you, are they still hard?

STUDENT 3: No.
Interviewer: Can you remember what they are?

STUDENT 3: Yeah.

Interviewer: How do you know?

STUDENT 3: Because I will do my homework. I do my history first. I do my homework and then I study. Then I go back to it.

Interviewer: So you're breaking up your study time?

STUDENT 3: Yeah. So I do it for 30 minutes that I put it together, it will be an hour.

Interviewer: Is that new or is that the way you've always done it?

STUDENT 3: It's not usually the way. Last time I just used the flashcards.

Interviewer: And it didn't work very well.

STUDENT 3: Yeah.

Interviewer: So this is the procedure you're using . . . Now you look at list and circling. The ones that are hard, you're going back and rereading and taking notes and then you plan when you get home is to do what?

STUDENT 3: To do the same thing over daily.
STUDENT 3, Interview #2

Interviewer: How did you do on your last history test?

STUDENT 3: I wasn't going to get a good grade?

Interviewer: Why do you say that?

STUDENT 3: Because on the last one, I only got one day of studying.

Interviewer: How would you describe your studying success on the last history test?

STUDENT 3: I would say it was number 1. It wasn't very good.

Interviewer: It wasn't successful? Why is that? Besides time was there another reason?

STUDENT 3: Yeah. Last time. I never even knew what you were meaning like India. I didn't really know.

Interviewer: Like what to study?

STUDENT 3: Yeah, what to study. What you're meaning about.

Interviewer: About what?

STUDENT 3: Like about Buddha. I didn't really know... a lot about him and it was actually kind of hard on the test.

Interviewer: Okay. Why would your say your studying wasn't successful besides you didn't understand Buddha. Was there another reason why your studying wasn't successful?

STUDENT 3: Yeah. Because when I usually study, I study in a way I know something. Like I think the cards didn't really help.

Interviewer: The flashcards didn't help.

STUDENT 3: They didn't help at all.

Interviewer: So you don't want to use the flashcards anymore?

STUDENT 3: Yeah.

Interviewer: What kind of goals did you make for studying when you studied this time around?
STUDENT 3: I think it's better.

Interviewer: What kind of goals are you making?

STUDENT 3: I'm making good goals.

Interviewer: Like what, can you give me an example?

STUDENT 3: Like, I'm studying more and getting it and I'm actually making sense.

Interviewer: So your goal is to make sense?

STUDENT 3: Yeah.

Interviewer: Do you have goals each time you sit down to study?

STUDENT 3: Yeah.

Interviewer: Can you tell me about what was your goal today when you sat down to study?

STUDENT 3: I was going to study daily. Just study daily.

Interviewer: Okay you have time goal?

STUDENT 3: Yeah time.

Interviewer: Do you have a process goal?

STUDENT 3: I don't really remember.

Interviewer: How do you decide which strategies you will use? Last time you decided to use flashcards. This time you decided to use the checklist and reading in the book. How did you decide to go from that to this?

STUDENT 3: Also I am using um outline.

Interviewer: How did you decide to go to the outline and study guide from flashcards?

STUDENT 3: I am doing actually more things. I am checking off and keeping track.

Interviewer: How did you decide to use the checklist and all that instead of flashcards?
STUDENT 3: When you showed it up. I thought it was really interesting. I wanted to have an experience to see if it was going to work or not.

Interviewer: You wanted to try it out?

STUDENT 3: Yeah.

Interviewer: What grade do you hope to get on your next test?

STUDENT 3: At least a C or higher. Because last time I got an F.

Interviewer: How confident are you that you can get a C or higher?

STUDENT 3: Kind of in the middle because I'm not that sure that I can get the right grade.

Interviewer: How interested are you as you study for your China test?

STUDENT 3: Really interested.

Interviewer: Why?

STUDENT 3: Because I never knew some of the stuff that they did.

Interviewer: How do you feel as you are going through your checklist and circling things off as you think I know this and I don't know this? How does that make you feel?

STUDENT 3: I feel confident.

Interviewer: Why?

STUDENT 3: I am going to make it.

Interviewer: How do you decide how long you need to study?

STUDENT 3: I usually set a timer and after then I do my homework and then I come back to it.

Interviewer: So you were saying like a half an hour.

STUDENT 3: Yeah a half an hour.

Interviewer: How did you decide a half an hour?
STUDENT 3: Half an hour is the best for me and then when I come back to another half hour that's when I might know some of it. And after that half hour I will be confident that that's the right answer and I might know it.

Interviewer: How do you decide where you're going to study?

STUDENT 3: I just study on the table.

Interviewer: How do you make that decision?

STUDENT 3: The table is actually, doesn't distract. I am not distracted.

Interviewer: How do you decide when you're going to study? Before you said you study before and after you do your homework. Why did you make that decision?

STUDENT 3: Because if I study at night I won't get much sleep and if I study in the morning, I might miss walking.

Interviewer: Which study strategies do you think are working well for you?

STUDENT 3: I think this one.

Interviewer: Tell me what you mean by this one.

STUDENT 3: Doing the study guide over while we're studying the book.

Interviewer: Doing the study guide throughout the unit helps? What else is helping you?

STUDENT 3: The outlines.

Interviewer: What about what we did today in class?

STUDENT 3: The concept map is actually better.

Interviewer: Did you take the concept map from your group?

STUDENT 3: Take it home?

Interviewer: Uh hm.

STUDENT 3: No, because we did not finish.

Interviewer: Oh you didn't finish. What do you do to keep yourself motivated to study for tests?
STUDENT 3: I keeping (sic) all my stuff that like um in my brain that is saying this is too hard and you're not going to make it and keeping it in and I'm taking the stuff that I'm confident out.

Interviewer: So you're keeping the bad stuff inside, you don't let it come out. You're putting it away. What strategies are you using when you're not remembering or you're not understanding?

STUDENT 3: I look in the book. I also check on the internet if it's not and doesn't have that much information that I need.

Interviewer: How are you keeping track of what you need to study?

STUDENT 3: What?

Interviewer: How do you keep track of all the stuff you need to study?

STUDENT 3: When I'm circling. (The items on the study guide and test preparation reflection sheet)

Interviewer: How do you know when you've studied enough for a test?

STUDENT 3: When I like. When I'm ready to put the . . .like . . .um. I forgot the question.

Interviewer: How do you know when you've studied long enough for a test?

STUDENT 3: Oh when I know that I am . . . know all of it.

Interviewer: Okay. What is the reason you got the score you earned on your last test?

STUDENT 3: I know the score because I know it was a really low grade.

Interviewer: Why did you get a low grade?

STUDENT 3: Because I didn't study a lot.

Interviewer: How did you feel about that test?

STUDENT 3: I felt really disappointed in myself.

Interviewer: What do you think you need to do to do better on this test tomorrow?

STUDENT 3: I need to study more.

Interviewer: Anything else?
STUDENT 3: No.

Interviewer: Okay I'll stop you there.
STUDENT 4, Observation #2

Interviewer: tell me what you're going to do today.

STUDENT 4: I'm going to preview this with my flashcards and I can't find my flash cards. I'm going to use the concept maps.

Interviewer: Are you going to use the ones we made in class today?

STUDENT 4: Yeah.

Interviewer: So tell me what you're going to focus on today. Are you going to do everything or a chunk?

STUDENT 4: I'm going to do chunks first. I'm going to do that (points to the concept map).

Interviewer: How are you going to use this? (test reflection-preparation form)

STUDENT 4: I'm going to circle the ones I do remember and the ones I don't remember.

Interviewer: Do you remember what the numbers correspond to?

STUDENT 4: These--points to the study guide.

Interviewer: Go for it and just think out loud. You did so well.

STUDENT 4: Has the study guide out, the textbook out, and concept map. Reads the study guide question--reads the part of the concept map--and goes back to the textbook. (Starts reading beyond the question on the study guide.) I don't remember what censors are, so I think I need to read that part.

Interviewer: why do you have these two under Warring States?

STUDENT 4: Because during the Warring States they made up three ideas and those were two of them and then the other idea was the Qin dynasty because he believed in that. Qin unified China and had people build the Great Wall, but not the Great Wall we see today. During the Han Dynasty Han Wudi was leader and he sent Zhang Qian he sent him as a _____looks in the textbook. That's why I always keep the book near me in case I forget stuff that's not on the study guide.

Interviewer: How did you remember all this stuff?
STUDENT 4: Some of it was this (the concept map) and some of it was the name had something to do with the idea. Like Lao Tzu is naturey and it has the word zoo in it.

Interviewer: So you made up a mnemonic. You're good with the mnemonic.

STUDENT 4: And the name Confucius also sounds like the five relationships and stuff and filial piety. It sounds like you have to respect your parents and stuff because it sound like it is harsh.

Interviewer: You know what helps me remember? F in Confucius, F in filial, F in family, and F in five relationships.

STUDENT 4: Yeah. And Jang Chian was a general and explored the west and the Silk Road was the most valuable trade route and silk was the most valuable trading product. The most valuable things were the silk, tea, and spices. The Silk Road went through the Roman Empire and the end of the Silk Road . . . doesn't actually say (looking in the book as reads the concept map).

China was a very isolated place.

Interviewer: Why did you have that on the top of the map?

STUDENT 4: It was isolated throughout the dynasties. Especially the Qin dynasty, they even built a wall.

Interviewer: Some of them I remember. I did remember Shang, Qin, and Confucius. I didn't remember censors.

Interviewer: Remember this is the side you don't know.

STUDENT 4: I remembered Great Wall, and Han Wudi. The period of Warring States. It was the ending of the Zhou Dynasty and long battles and yeah. Lao Tzu I remembered that.

STUDENT 4: So, now I'm going to study how China's geography affects its development.

Interviewer: You already know that. You just described that.

STUDENT 4: I'm going to check for some more because I don't think that's the only way it affected it.

Interviewer: How do you feel when you go through the study guide now and you see how many you know?
STUDENT 4: I feel a lot better. I can think of censors as police because they are making sure of the government, they're like cops and like security. Because you need your handprint and they are like your eyes like a sense.

Shang Ian--I can think of it as a government.

Interviewer: What are you thinking about, describe it?

STUDENT 4: I think of him as a general. Like emperor Qin.

Interviewer: It's not Qin, it's Qian.

CB :Oh I can think of it as Qian from Mulan. It sounds like the guy from Mulan. I can remember Han Fanzei is Legalism because his name sounds strict.

Interviewer: Yeah, Hanfezei is not a fun guy.

CB : And Lao Tzu already sounds like Daoism. Confucius I see his picture. He looks like a guy who would respect his family. The five relationships. I really don't know the five relationships.

Interviewer: We did notes on that. It wasn't in the book.

STUDENT 4: Well, if it's not on here, it's probably not on the test. Now I'm going to start on how they rule.

Shang ruled from 1750 BC- 1045 BC. The major leader was Wu Wang and he rebelled against the Shang. He also started the Zhou dynasty. The social structure: ruler, nobles, and farmer. The major beliefs were the oracles bones to predict the future. Ancestor worship they worshiped them because they appreciated, not appreciated but trying to please their ancestor and not displease them.

Qin dynasty--divided the kingdom into 36 districts and just to see if I'm right (looks in the text) each with it's own representative who reported dejectedly to him.

Interviewer: Caleb is this how you usually study?

STUDENT 4: Yeah. I'm going to say why the built the Great Wall. To keep the Xian out and protect them from attacks. He built clay soldiers to scare people and he didn't use them in battle. They were found in Qin's tomb they had over 6000 soldiers and horses made of clay. They were there to scare other dynasties.

The Shang kings. I'm not doing it in exact order because the test isn't in exact order. The first rulers were part of the Xia dynasty. They had build the first Chinese cities. They had aristocrats who were nobles and their wealth came from the land they owned. The pictographs were the first Chinese writing.
Interviewer: What's telling you to focus on that part?

STUDENT 4: It's highlighted and it's an achievement. It made them not as isolated as before. Since I know we're going to have a map part. Not just on the rivers

Interviewer: So what's the best way to study for the mapping part?

STUDENT 4: Using this--points to the map from class. As I'm doing that I'm going to check this here--points to questions on the study guide.

Interviewer: Are there some questions that you can circle (test-reflection form) because you already know them?

STUDENT 4: Um let's see. 18, Daoism, Confucianism, and Legalism. I know their achievements. I know 20. Never mind I know all of it. I know 22 I know the Silk Road. I know who's responsible for starting it Qin and Shang Qian. I know the ranks of the social structure. Emperor, nobles, farmers, the last would be people without land like slaves . . . they didn't really have slaves, what were they called. . . . merchants.

Interviewer: Do you remember what a merchant is?

STUDENT 4: A person who travels and sells stuff. The Mandate of Heaven. . . I know it was the Zhou dynasty but a specific person did it. The Zhou king (looks in the text reads aloud the section about Mandate of Heaven). Life for farmers was hard working, but skilled. Merchants not hard, but had to be skilled at persuading. The men were treated the way . . . depends on which group they were in.

Interviewer: Regardless of which group you were in, was it better to be a man or a woman?

STUDENT 4: A man because the women didn't really have any rights. They were more housewives than wives. I think we're going to need some of that, usually. That's one thing that I forgot.

Interviewer: Overall Caleb what would you compare this versus India studying?

STUDENT 4: Way better, because I remember lots more.

Interviewer: Why?

CB: One because this concept map. It's kind of different than the other one.

Interviewer: We didn't do ones for India.
STUDENT 4: In India we didn't do them and I didn't remember. I also didn't study off of the study guide as much as I did. I really didn't and this is a real advantage. It shows what I need to work on and we're did it a lot faster.
STUDENT 4, Interview #2

Interviewer: How did you do on the last history test, the India test?

STUDENT 4: I got a C.

Interviewer: How did you feel about that?

STUDENT 4: I didn't feel so good because I didn't study that well.

Interviewer: Why do you say you didn't study that well?

STUDENT 4: I didn't really study off my study guide.

Interviewer: Uh huh.

STUDENT 4: And I mostly studied off the book and didn't use concept maps.

Interviewer: Why didn't you study using the study guide?

STUDENT 4: At first, I forgot to use the study guide and I studied of the book because it kind of had the same words and I thought most of the book was also going to be on the test and then because I was looking at the map too.

Interviewer: So it sounds like that's an area you still need to do for this test, the maps.

STUDENT 4: Not really, because I know everything.

Interviewer: What kind of goals did you make before studying for this test today? What was your goal?

STUDENT 4: I wanted to study for fifteen minutes.

Interviewer: You studied for thirty, you went double.

STUDENT 4: Because by the end tomorrow, since yesterday I only studied five minutes and my goal was an hour and the other day before that I studied ten minutes, so I guess I just made my goal.

Interviewer: Well that's forty-five minutes.

STUDENT 4: I'm about at my goal.

Interviewer: Almost, fifteen more minutes
STUDENT 4: So I could study fifteen more minutes at my house.

Interviewer: Were there any other goals you had for this test besides the hour?

STUDENT 4: Yeah, I wanted to know all of my vocab.

Interviewer: And?

STUDENT 4: I didn't know all of them, but I knew most of them, which made me proud of myself. I wanted to know about the dynasties, which I succeeded in and the Period of Warring States and the Great Wall and I knew about each idea, Legalism, Confucianism, and Daoism.

Interviewer: The philosophies?

STUDENT 4: Yeah the philosophies. That made me happy.

Interviewer: How did you decide which strategies to use when you were studying today?

STUDENT 4: Well, I decided to try some new strategies from there and I . . .

Interviewer: What do you mean, "from there?"

STUDENT 4: From your lesson and I also used strategies that I thought of.

Interviewer: Such as.

STUDENT 4: Just random.

Interviewer: Those mnemonics that you're using to help with remembering.

STUDENT 4: Yeah, I'm using kind of random that I'm just making up for different chunks. Sometimes I didn't do chunks I did a whole part trying to remember it. Then I separate into chunks if I didn't remember it, then I did it over and separate it into chunks.

Interviewer: What grade do you want to get on this test?

STUDENT 4: An A

Interviewer: How confident are you that you can get an A?

STUDENT 4: I am very confident.

Interviewer: Why?
STUDENT 4: Because I studied good and I met my goal.

Interviewer: Which goals?

STUDENT 4: Well I’m going to meet my hour goal and I met my dynasties and philosophies and now I know all my vocab.

Interviewer: How interested are you when you're studying for this?

STUDENT 4: I am very interested because it is very exciting.

Interviewer: Why?

STUDENT 4: Because there is a lot of ruling and not ruling and kings and emperors.

Interviewer: How did you decide how long you were going to study? How did you decide and hour and fifteen minutes at a time?

STUDENT 4: I said that because since this is a long chapter I wanted to take short time so I would remember it more instead of taking a long time and trying to remember a whole lot over a long period of time, because I will forget if I'm studying something else. If I do it different days I'll remember, but if I just try to study a lot in one day... like if I try to study 20 minutes in one day I'll forget it, well not 20 minutes. Forty minutes in one day I'll forget it.

Interviewer: So it's better to do what?

STUDENT 4: At least thirty minutes like I did.

Interviewer: I think last time I did thirty and I didn't remember a lot because I usually studied like that and then I am not studying like that because I realized what happened.

Interviewer: It wasn't effective. How do you decide where you're going to study?

STUDENT 4: By how quiet it is and how many distractions there are.

Interviewer: So if you were sitting at home, where would you go?

STUDENT 4: Not in my room, there are too many things.

Interviewer: So where would be a better place?

STUDENT 4: I'd usually study outside because there are not a lot of distractions. I study away from trees or sometimes I study on trees, so I just sit there and nobody
sees me. Sometimes my brother looks for me and I just stay up there and keep writing and he doesn't see me.

Interviewer: How do you decide when you'll study?

STUDENT 4: It depends what time of day it is. If it's nigh time I really don't study. I am going to forget it most of the time.

Interviewer: So when is the best time to study?

STUDENT 4: In between nighttime and afternoon, the evening.

Interviewer: Which study strategies do you think work best for you?

STUDENT 4: The concept maps and reviewing vocab and mnemonics and my study strategy where I make random thoughts to see if I can remember it.

Interviewer: Is that when you're checking yourself when you're doing that?

STUDENT 4: Yeah I read random parts to see if I remember it.

Interviewer: How did you determine which ones to use?

STUDENT 4: Well by what's on the study guide.

Interviewer: Well, tell me about that.

STUDENT 4: So there's a lot on the study guide. On this one there wasn't that much. This one more had most of the questions that were about the dynasties and things and the achievements and stuff. So I looked in the book for rights, and Daoism and they had more on Daoism, so yeah.

Interviewer: How do you keep yourself motivated to study when you'd rather play?

STUDENT 4: I really don't need to because it's very interesting.

Interviewer: So when you get home do you sit down and study on your own or is it something you have to be told to do?

STUDENT 4: I study on my own because it's fun.

Interviewer: What do you do when you're not understanding, or you're not remembering what you need to learn?

STUDENT 4: I usually go on my study guide or on the lesson that you've done and I look on the computer on the lessons and I review it and I ask my dad about stuff.
Interviewer: How do you keep track of what you need to study?

STUDENT 4: I usually know what I already studied. Like I already studied the map part, that's why I didn't use it today. So on the day before the test I study the vocab and stuff and the dynasties and before that I study the maps and the people.

Interviewer: How do you know the process you use to remember what you know and what you don't know?

STUDENT 4: Well, not really I just kind of . . . I just kind of remember it actually.

Interviewer: So you just know.

STUDENT 4: No, I don't just know. I actually have to study. I study and then I get it in my brain and put it in my mind and put it in my brain and the other things will be packed on top of it, so that's what I think about.

Interviewer: How about that yellow paper (test strategy reflection sheet)?

STUDENT 4: That yellow paper also helps because it keeps track of what I remember and what I don't remember and if I don't remember it, I keep working at it until I remember it.

Interviewer: How do you know when you've studied enough?

STUDENT 4: When I finish studying what I need to study and by the time I put in for myself. Also when I start forgetting things I know I should stop studying.

Interviewer: Why?

STUDENT 4: Because I'm going to start forgetting a lot.

Interviewer: And it's too much?

STUDENT 4: Yeah. Usually when I start forgetting something I stop and just study that part one more time and remember it.

Interviewer: How do you decide how well you've done on a test?

STUDENT 4: By the work I do.

Interviewer: Tell me. . .

STUDENT 4: And the grade I get.
Interviewer: What do you mean by the work you do?

STUDENT 4: So if there's a question that requires a sentence and I do more than a sentence, I know I did well. And if I get that right I know I did really well. And also, but if I don't get it wrong I know I studied well because I had the thing but I just didn't write enough of the right information.

Interviewer: Can you tell me why you think you got a C on the last test?

STUDENT 4: I didn't study the study guide. I studied the book and mostly the yellow headings.

Interviewer: Why wasn't that good enough?

STUDENT 4: I didn't use concept maps. The concept maps really help me out. The book really just has a bunch of words and I started forgetting stuff a lot over and over.

Interviewer: How do you feel about the score you earned last time, the C.

STUDENT 4: Not so good.

Interviewer: No. What do you think you need to do to get an A or B on this test tomorrow?

STUDENT 4: Remember, not remember work hard and do the best I can.

Interviewer: Anything else? Is there anything else about your studying that is important that you think I should know that's changed this time around?

STUDENT 4: I am studying for more minutes and I'm using the comparing thing and I'm also starting to think of the name and think how it related to Lao Tzu which relates to Daoism. I think Zoo and Daoism see if it makes sense I really makes sense.

Interviewer: Yeah before you said Taoism reminds you of zoo and Daoism is nature. So you're coming up with all kinds of things, some if it I've taught you and some of it.

STUDENT 4: I've thought of myself.

Interviewer: Do you share that with people?

STUDENT 4: Yeah I share with my brother and some of my friends.

Interviewer: Do you share with friends in class, like your team today?

STUDENT 4: Well, we really weren't that much able to today.
Interviewer: You didn't have time? Any other comments for today?

STUDENT 4: No.

Interviewer: We'll leave it at that.
STUDENT 5, Observation #2

Interviewer: Tell me what you're going to do today. What's your plan?

STUDENT 5: I'm going to study my study guide. I'm going to study my definitions and some of the questions and then I was going to write down if I got them on this (test-preparation reflection sheet) and I was going to do some stuff out of the book.

Interviewer: So you're going to study guide questions and see which ones you know and which ones you don't know. What are you going to do for the next ten minutes? What's your plan?

STUDENT 5: I was going to do the definitions.

Interviewer: Okay you're going to focus on the definitions. Which definitions do you need to focus on?

STUDENT 5: I am going to go over all of them.

Interviewer: Are there some that you're going to spend a little more time on than others?

STUDENT 5: Yeah a little bit.

Interviewer: How are you going to show which ones you need to spend a little more time on?

STUDENT 5: I can look on here (test preparation reflection sheet) and then check off the ones that I got.

Interviewer: Go ahead and do it then.

STUDENT 5: Starts reading the words and reciting definitions if she knows them. Circles knows Shang dynasty--(As she reads the definition, she's circling that she know the words--even though they are not the correct definitions--some of the information on her study guide is incorrect or incomplete).

She completes identifying whether she knows the vocabulary words or not.

Interviewer: So these are the ones you know and these are the ones you don't know. How are you going to go about, what are you going to do to go about learning these ones?

STUDENT 5: I was going to look them up in the book or read off my study guide.
Interviewer: How are you going to study off the study guide? What's your strategy going to be?

STUDENT 5: I was going to look at the ones I don't know and read over it and cover it up.

Interviewer: Did you say you're going to put a check next to the ones you don't know?

STUDENT 5: Yeah. (Checks off the ones she doesn't know on the study guide. Goes into the text book and reads up on the topics she has identified as not knowing, filial piety).

Interviewer: So what was that part reading for?

STUDENT 5: I saw that part had some words that I didn't know, so I read that part so I would understand it.

Interviewer: So you understood it?

STUDENT 5: Yeah. Continues reading about Confucius.

Interviewer: So now that you've read that part, what are you going to do to help yourself remember it?

STUDENT 5: After I read this part I didn't know, I'm going to go back over here study guide & (test-preparation reflection sheet) and study it.

Interviewer: Show me what you're going to do.

STUDENT 5: I was going to see if I had the right answer here (on the study guide).

Interviewer: Good Stephanie,

STUDENT 5: Writes some additional notes on the study guide. Continues reading about Daoism.

Interviewer: Do you think you should add to what you have there?

STUDENT 5: Rereads out of the book. . . says, "lived at the same times as Confucius?"

Interviewer: Not the most important idea.

STUDENT 5: Became popular about 500 BC to 300 BC

Interviewer: What became popular.
STUDENT 5: Ideas credited to him.

Interviewer: What ideas?

STUDENT 5: It just says ideas credited to him.

Interviewer: Look above to the highlighted word. See what it says.

STUDENT 5: (Rereads the section about Daoism again.)

Interviewer: Who made up the ideas about Daoism?

STUDENT 5: Lao Tzu

Interviewer: What are the ideas?

STUDENT 5: Another Chinese philosophy that promotes a peaceful society?

Interviewer: Should you say the name of the philosophy or should you say the philosophy?

STUDENT 5: I should put the name. (Adds more details to the study guide. Looks to the next word. Scanning through the chapter.)

Interviewer: So do you know how to find the places real fast?

STUDENT 5: Yeah the back of the book. The glossary.

Interviewer: Or the index.

STUDENT 5: (Flips to the index to find the page number. Reads about censors.)

Interviewer: So now what is a censor?

STUDENT 5: I have that.

Interviewer: What can you do to help yourself remember that?

STUDENT 5: Probably go over it and see if I get it right then go back in the book and go over it too.

Interviewer: So what's the last one you have? Think about your brain works? Remember what I've taught you about chunking? How many things can you focus on at a time?
STUDENT 5: Maybe three to five.

Interviewer: Three to five usually. How many have you looked up.

STUDENT 5: Four.

Interviewer: You've got a decision to make. Do you want to focus on the four you have or do you want to add more.

STUDENT 5: Probably add one more. Goes to the next word, Han Wudi. Reads up on the word and then adds to study guide.

Interviewer: So what's the big important part of Han Wudi.

STUDENT 5: He wanted talented people to fill government jobs.

Interviewer: Read that first sentence there. What else is really important about Han Wudi.

STUDENT 5: (Reads the section) I think the fact that Han Wudi means martial emperor of Han?

Interviewer: Nope.

STUDENT 5: The Han Dynasty reached its highest power under Han Wudi?

Interviewer: So what's important about that? Why is that important?

STUDENT 5: Because he finally reached his peak on the leadership.

Interviewer: When it says it reaches his peak, what does that mean?

STUDENT 5: Reaches the top.

Interviewer: The top of what?

STUDENT 5: Of his leadership.

Interviewer: That's when the country became the strongest most powerful. It was when he was in power. Does that make sense?

STUDENT 5: Yes.

Interviewer: So when you're studying about people in history you want to know what did they do and why is it important. So you learned he made up the . . .
STUDENT 5: Looks at notes again.

Interviewer: The tests. The tests made the government strong. He was the one who decided that should happen. So if he decided that should happen, he gets credit.

Interviewer: Now, you've got five answers, what should you do now?

STUDENT 5: I should probably reread it over.

Interviewer: Okay.

STUDENT 5: Reads study guide word--tries to answer question without looking at the paper.

Interviewer: Tell me what you're doing now that you've read over all of them.

STUDENT 5: I think I need to go over them some more.

Interviewer: Okay, do what you need to do.

STUDENT 5: (Reads the word to self, says the definition out loud.) I need to go over this censors more too. (Repeats the definition. Reviews the five words didn't know once again by saying the word and reads the definition aloud.)

Interviewer: So do you understand what it means when it says Han Dynasty?

STUDENT 5: It reached it's peak.

Interviewer: What does it mean when you see the Dynasty. When you see the word dynasty, what does it mean?

STUDENT 5: I think I need to study that. The Shang family is in power and controlled the Huang He.

Interviewer: Right.

STUDENT 5: Can I write that down?

Interviewer: Of course.

STUDENT 5: (Adds more information about dynasties to study guide.)

Interviewer: Now what do you think you should do? Go through those again. What do you think would be a good thing to do now? You've reviewed it like twice.
STUDENT 5: Maybe go to the other ones.

Interviewer: Do you feel like you know them well?

STUDENT 5: Yeah. Pretty well.

Interviewer: Do you feel comfortable circling them now?

STUDENT 5: Not completely comfortable. I might need to study them more.

Interviewer: Now, do you feel you know it?

STUDENT 5: Not really.

Interviewer: Then I would cross it off. How about 7?

STUDENT 5: Yeah.

Interviewer: So then, I would cross that off. How about 10?

STUDENT 5: Yeah.

Interviewer: How about 14?

STUDENT 5: I'll need to study that one more.

Interviewer: So do you see how that works?

STUDENT 5: Yeah.

Interviewer: How do you feel?

STUDENT 5: Pretty good.

Interviewer: So now what do you think you should do?

STUDENT 5: Probably study the ones that aren't crossed off.

Interviewer: So you don't have to worry about those, but you need to pay attention to 6, 9, 11, 14. So do you see how you add a couple, but you don't add new ones until you learn those. You're mind can't pay attention to too much at once. It's called overload. It's too much and your mind won't remember anything.

STUDENT 5: So the next day you will circle off the ones you know.
Interviewer: Then you do it again. Yes, I know this no, I don't know this. Just because sometimes you'll remember it at one point and another time you will forget. It's a good way to keep track. What do you think?

STUDENT 5: It's helpful.

Interviewer: How does it make you feel?

STUDENT 5: It makes me feel better. It makes me think I'm going to do way better on this test.

Interviewer: Why?

STUDENT 5: Because last time, I didn't do this and I didn't know. I was thinking about different strategies to do and I thought the study guide would be a good idea.

Interviewer: Last time you went through the book and read about whatever highlighted word you saw. Now it's very focused. Not only is it focused and now you know these are the ones I know and these are the ones I don't know.

STUDENT 5: Yeah it helps me pretty good.
Interviewer: Anthony, what are you planning on working on today? What's your goal?

STUDENT 1: What's my goal? Are you . . . are we finishing the study guide?

Interviewer: We're working on studying. So tell me what's your plan for studying today?

STUDENT 1: To work on a new strategy or get some studying done.

Interviewer: A new strategy.

STUDENT 1: Am I going to leave at 11:40?

Interviewer: Yeah, okay. What's your plan to study today? Which of your study guide questions do you want to work on today?

STUDENT 1: I think 13.

Interviewer: Which ones do you want to focus on today?

STUDENT 1: (Pause . . . looking through study guide.) I think 6 though 8.

Interviewer: Are those ones you know already or ones you don't know already?

STUDENT 1: Well . . . ones . . . I . . . I mean 16.

Interviewer: Okay 16 and what else?

STUDENT 1: And 24

Interviewer: Okay, 16 and 24. Anything else?

STUDENT 1: For now.

Interviewer: Okay. So go ahead and study it and think aloud as you go. How did you decide on 16 and 24?

STUDENT 1: Because I'm going to try to make a rhythm like we did with olive car keys (oligarchy).

Interviewer: Okay. So you want to make a mnemonic?
STUDENT 1: Yeah, like what is like Zhou?

Interviewer: Remember when you make a mnemonic you want to think about what the word is and what it means, so you want to make a connection to what it means.

STUDENT 1: So Zoroastrianism. I want to do it. Zoro--as --tria- Like a rat.

Interviewer: So think rat and Persian religion, how can you make that a connection?

STUDENT 1: Darn, religion and rat.

Interviewer: What could you do?

STUDENT 1: I see a rat with a religion.

Interviewer: A religious rat?

STUDENT 1: Oh yeah, rat and stream.

Interviewer: Okay and how is that related to this?

STUDENT 1: (Yawns) It can be like a god of water like Neptune,

Interviewer: Why? Because of religion?

STUDENT 1: Yeah. Trianism. . .

Interviewer: Do you need to worry about the second half of the word or can you just focus on the first half of the word?

STUDENT 1: It goes rat then stream.

Interviewer: Okay, so now do you know it?

STUDENT 1: Yeah.

Interviewer: So if I asked you, what is the Persian religion called, what would you say?

STUDENT 1: Zoroastrianism.

Interviewer: Zoroastrianism. So what does that mean?

AC: The Persian religion.

Interviewer: So do you feel comfortable with that now?
STUDENT 1: Yeah.

Interviewer: Do you need to draw it or write it, or can you just remember it?

STUDENT 1: I'm going to draw it. When am I going to go to lunch?

Interviewer: You're going to have a special lunch.

STUDENT 1: Ooh. Zo and that part here (writing notes on his study guide, drawing pictures of a rat and a stream. Mutters as he draws, rat and stream with a tail.)

Interviewer: Okay the next one is 24. Which is that one?

STUDENT 1: It says list the events that caused led the Persian Empire to fall.

Interviewer: Do you remember that from the timeline we did?

STUDENT 1: Yeah, put down here. I don't know if it's true but, Persians attack, then Greeks attack, the Greeks scare off Persians, and then the Greeks are safe.

Interviewer: Yeah, and the additional information describes how the Persians created a lot of taxes for their people and the people were upset.

STUDENT 1: Oh yeah.

Interviewer: And then the royal people. Remember what they did? The husbands had many wives and many children. Remember what the kids were doing to each other?

STUDENT 1: Oh. So in the royal family the kids were killing each other and the wives were complaining to the king. Why do the children keep killing us? Could you just . . .

Interviewer: And because they were fighting Alexander the Great came in and they were vulnerable. Do you remember this from the timeline we did?

STUDENT 1: I did not read the last chapter.

Interviewer: Okay, it sounds like you need to do that. What can you do to help yourself? What are you going to do to help yourself remember all that?

STUDENT 1: Maybe make. . I can't think. . .

Interviewer: Do you remember what you can do to help yourself remember? What are the strategies we talked about? Make flashcards, mapping, mnemonics, read the
book, make concept maps, web activity. What can you do to help yourself remember?

STUDENT 1: Make a flashcard. I don't know how to put them in the right order.

Interviewer: Is that all you want to do today?

STUDENT 1: Maybe, because it's. . .

Interviewer: Don't worry about the time. I'll write you a pass. I just. . .

STUDENT 1: It's just my first day of the class.

Interviewer: What do you have fifth period?

STUDENT 1: Computers It's my new wheel. They're going to give all the directions.

Interviewer: Do you want to come on Monday before school?

STUDENT 1: My mom basically is really busy and my sister doesn't want to get up.

Interviewer: Okay. Let's just do your interview now okay?
Student 1, Interview #3

Interviewer: How did you do on the last history test?

STUDENT 1: Um, well I did sort of good.

Interviewer: Why do you say that?

STUDENT 1: Because I only got, I didn’t get my goal, I only got a B. I wanted to get an A but I got a B.

Interviewer: And how was your studying process? Was it successful?

STUDENT 1: It was okay, but I wish I could do better.

Interviewer: What kind of goals are you making for your Greece test?

STUDENT 1: To do better and not get a B, like an A.

Interviewer: Okay, any other goals you have for the Greece test?

STUDENT 1: Trying to study hard.

Interviewer: Okay, and what do you mean by study hard?

STUDENT 1: Like knowing my study guide questions and using my, using my strategies.

Interviewer: Okay, and how do you decide which strategies to use when you study?

STUDENT 1: Wait, what?

Interviewer: How do you decide which strategies to use when you study?

STUDENT 1: Oh, ah, like sometimes I use like study guides, study guide to make flash cards, and maybe read the book.

Interviewer: How confident are you that you can get an A on your next test?

STUDENT 1: Uh, what?

Interviewer: How confident are you that you can get an A on your next test?

STUDENT 1: A on my next test, um, A on my next test. Um A on my next test?

Interviewer: Are you confident or not confident?
STUDENT 1: I’m kind of confident.

Interviewer: How interested are you when you study for your test?

STUDENT 1: Uh, kind of.

Interviewer: Why, what do you mean?

STUDENT 1: And I yeah,

Interviewer: You’re pretty interested?

STUDENT 1: Yeah.

Interviewer: How do you decide how long to study for your test?

STUDENT 1: It depends on when I’m ready, when I’m ready then I close the study guides and strategies and just do stuff.

Interviewer: How did you decide 30 minutes and 30 minutes and 15 minutes?

STUDENT 1: Uh, well since my goal is get over 60 minutes so I should follow the goal and get over 60 minutes.

Interviewer: Okay, how did you decide where to study and when?

STUDENT 1: Well, because those are the most comfortable places and feel and my time.

Interviewer: Okay. Which study strategies work best for your history test?

STUDENT 1: Mostly flash cards and reading the book.

Interviewer: Okay, anything else? And how do you decide the book and flash cards?

STUDENT 1: How do I what?

Interviewer: How do you decide between the book and flash cards?

STUDENT 1: Um, well, cause those worked for me many times before.

Interviewer: Okay. How do you keep yourself motivated to study for your test?

STUDENT 1: How I keep motivated? How do I keep usually like take breaks if it’s really long, bathroom breaks, snack breaks so if it’s long.
Interviewer: Okay. What do you do when you’re not understanding or remembering what you need to study?

STUDENT 1: I try to ask for help or see if I can figure it out on my own.

Interviewer: How do you keep track of what you need to study?

STUDENT 1: Usually I try to put it in my binder so I’m organized so I don’t lose anything like some people.

Interviewer: Are there other strategies you use to study to know what’s on the test, what you need to study on the test?

STUDENT 1: Uh, the study guide which gives me like lots of information.

Interviewer: How do you know when you’ve studied long enough?

STUDENT 1: Well uh, wait what?

Repeat the question.

STUDENT 1: Study long enough? Uh, when I like feel like it, when I can just like do it right now.

Interviewer: Yes. How do you decide if you’ve done well on a test?

STUDENT 1: Okay, If I’ve done well, if I’ve like well, if I like accomplished my goal but then if I didn’t then I failed my goal.

Interviewer: What’s the reason you got a B on your last test?

STUDENT 1: I must have not studied hard or maybe I didn’t focus.

Interviewer: How did you feel about getting a B?

STUDENT 1: I was like, I did good but maybe a little better next time.

Interviewer: What do you think you need to do to do better on your next test?

STUDENT 1: Uh. Hmm. To do better on my Greece test?

Interviewer: What do I have to do better on my Greece test?

STUDENT 1: My Greece test, so far my Greece test, you mean for my next Greece test, um maybe like get like, I’ve studied enough for that.
Interviewer: You’ve studied enough?

STUDENT 1: I’ve studied enough.

Interviewer: Anything else you want to do for your Greece test to get an A?

STUDENT 1: No.

Interviewer: How do you feel like you’ve changed the way you study now since early in the year?

STUDENT 1: Like I used to always get a C basically but then I raised it up to a B and now I might be getting an A.

Interviewer: And what has helped you to help that happen?

STUDENT 1: A picture of having an A.

Interviewer: What’s helped you to do better?

STUDENT 1: Asking for help, studying harder.

Interviewer: Anything else?

STUDENT 1: No.

Interviewer: Okay, thank you, Student 1.
Student 2 & Student 5, Observation #3

Interviewer: Before you begin, tell me what you're going to do. Go ahead and explain what your plans are.

STUDENT 2: Right now? Is it like on?

Interviewer: Yeah.

STUDENT 5: Well, I'm going to go over the study guide. (Students go and get some materials they forgot from their backpacks.)

Interviewer: Explain what you're going to do today. Tell what you've really learned about studying. This is your final observation. So really the intentions is for you to show what you've learned about how to study and what the procedure looks like for studying. Okay? So go ahead and explain what your thoughts are.

STUDENT 2: So, first we're going to go through the reflection for test preparation sheet and we're going to go through the second session for stuff we didn't know yesterday, and the stuff that we don't know today we're going to work on.

Interviewer: Okay. Go ahead and explain how you're going to go about doing that. What's your first step?

STUDENT 2: We're going to go through the study guide and look at the question and if you automatically know the answer to it.

Interviewer: Are you going to read the answer or how do you decide whether you know it or not?

STUDENT 5: I go over it.

STUDENT 2: I go through and if I can't think of what satrapies are, then I'll say I don't know it.

Interviewer: Okay.

STUDENT 5: I usually go over the whole thing and see if I remember it.

Interviewer: So when you say, "See if I remember it," what does that mean? How do you determine whether you remember it?

STUDENT 5: If I can say it.

Interviewer: So now that you're doing this together, are you going to do something different or are you going to do it by yourselves still?
STUDENT 2: We always do the thing first, and when it comes to questions we'll like talk.

Interviewer: Okay, go ahead and do it and I'll just take some notes here.

Students are going item, by item on the study guide and are marking which items they know and don't know on the reflection sheet. STUDENT 2 finishes pretty quickly. STUDENT 5 takes quite a long time to get through the list.

Interviewer: So tell me what you're doing STUDENT 2. It looks like you've gone through. Tell me what you did.

STUDENT 2: Now, I'm just going to wait until STUDENT 5 is done and then we can talk about the ones we know together, I mean the ones we don't know together. And the stuff we do know, we'll probably go over it a little bit.

STUDENT 2: Okay, which ones don't you know?

STUDENT 5: 11, 12, 14, 21, 22, 23, 24, 25

STUDENT 2: Okay, so the ones I don't know is 21, 22, 24. 25. We should probably go over those first because those are the ones we both don't know.

STUDENT 2: I know why the Delian League was formed and who was part of it.

STUDENT 5: I think they fought common enemies,

STUDENT 2: Well, they had an alliance between Athens and other city-states. So like basically, I think that they are in my notes, let me look back. (Looks in history journal)

STUDENT 5: (This student also looks in history notebook)

STUDENT 2: I know why. (Doesn't find it in notebook, Student speaking from memory) Because Sparta not, because didn't Athens and Sparta they wanted to get the war over with the Persians? So, I guess the Delian that they made an alliance between the both of them between the Delians and the Athens so they could both get something they want. But not like fully. What do you think about that STUDENT 5?

STUDENT 5: I only have, they were to fight against common enemies (Reads off her study guide)

STUDENT 2: Oh, you have something different? Against common enemies. I said they had an alliance. (Reads off her study guide). So if we put it together it would be they made and alliance with other city-states to fight against common enemies.
STUDENT 5: What's an alliance?

STUDENT 2: An alliance, so like let's say we're on a show like the Survivor, and you are trying to me and you are going to have an alliance so we can knock everyone else out like get everyone else off except for us. We're having an alliance to have an agreement on something to do certain things.

STUDENT 5: Oh, okay.

STUDENT 2: And then, let's see (Looks at study guide)

STUDENT 5: For 22, I don't have anything.

STUDENT 2: Understand the message behind Pericles' funeral oration.

Interviewer: We won't do that until tomorrow.

STUDENT 2: Oh, okay.

STUDENT 5: Then 23.

STUDENT 2: You have 23. So um, you know how America we don't.

STUDENT 2: Okay, so number 24. Tell the events that led to the fall of the Persian Empire. Okay so you know how the taxes were more and they started getting more greedy? And then the rich people were trying to fight with each other to see who would get to rule. Did you get that down?

STUDENT 5: I didn't get all that information.

STUDENT 2: You should probably do that.

STUDENT 5: What was that?

STUDENT 2: You could say the military went bad and the tax and they started being greedy for money and then rich people started fight for rule. And that kind of when I say fight for rule, it brings back number 23 when it says compare and contrast America and Greek democracy, because when they fight over rule instead of Greek doing that they had everything with Athens like with Pericles gave everyone the right in government. And over who's doing what and stuff and unlike in America we just have to choose who we think would be good and do what we think would be right. So I said that one and 25.

Interviewer: So use the language STUDENT 2. Use the vocabulary that describes what you just said.
STUDENT 2: The vocabulary.

Interviewer: Look at the words in the question.

STUDENT 2: What are the events that caused the Persian Empire to fall.

Interviewer: No, the other one.

STUDENT 2: Compare and contrast America's democracy and Greek democracy.

Interviewer: What are the vocabulary words that go with the types of democracy?

STUDENT 5: Like these vocabulary? (Points to the study guide)

Interviewer: No, in the question there are vocabulary words.

STUDENT 2: Yeah, direct democracy and representative democracy.

STUDENT 5: America's democracy and Greek's democracy?

Interviewer: What are they called and what do they mean?

STUDENT 2: Well, they all have something to do with the government.

Interviewer: But what do they mean?

STUDENT 2: Well, like they're saying like. . .because like when we talked last time like kind of like voting. . . because in Greek everyone even the lower class people got to have their opinion in the government.

Interviewer: So what do you call that if everyone gets a vote and everyone gets a say? Look in the question.

STUDENT 2: Um, direct democracy. And then in America we have a representative democracy, so like they're saying that a representative is someone who we vote for, we think represent our country. But like in Greek, they have a direct democracy, they give their opinions on everything and how we want it. Unlike us, we just vote. What other questions do you not know?

STUDENT 5: I don't know number 25.

STUDENT 2: I don't think we've done that in class, yet right?

Interviewer: Yes, tomorrow.
STUDENT 5: And then 23. (Looks at test reflection sheet) Oh, I got 23.

Interviewer: What is that one?

STUDENT 5: Explain why. . .

STUDENT 2: Explain why Peisiastrius gave land to landless farmers. Because they wanted to like. . .

STUDENT 5: They wanted to have them live. . .

STUDENT 2: No, like they want to have them respect him because like to respect him and be happy that he's ruler because if they're not happy, then he could be, wouldn't be ruler anymore because no one would like him. And he would be giving like respect to other people and the opinions they have about things. So that's why I said it was so people would respect him and that people would be happy that he's ruler. That he gave land to landless farmers. In a way it's also helping the Greeks too because if they give land to the landless farmers, then they could grow more crops and if they grow more crops then they could give more food to everyone and get paid more money.

STUDENT 5: Did we go over 11 and 12?

STUDENT 2: Describe how the Minoans made their living. They were fishers, traders, and they would be farming and herding animals and then number 12. So you want to go over the stuff you didn't know and see if you know it now? Since we talked about it just a little bit.

STUDENT 5: Nods.

Interviewer: How are you going to go about that? What do you think is a good strategy to see if you actually know it?

STUDENT 2: I think since we talked about it a little bit and I was telling her because I some of the stuff I didn't know we're going to learn it later. But I knew mostly everything from here. I was trying to explain it to her. Now, I think we should go over it to see if she was understanding it.

Interviewer: Are you going to go over it by asking her to tell you or are you going to go over it again?

STUDENT 2: I'm going to ask her to tell me what her opinion is.

STUDENT 5: I didn't get to write it down.
STUDENT 2: Oh, you should write it down. Oh, is that for number 11? Is that the one you had problems with?

STUDENT 5: I don't know if that's right.

STUDENT 2: You should probably write down they were fishermen, traders, farmers, and herders small animals like goats and sheep, and they built ships too.

STUDENT 5: (Writes down what STUDENT 2 suggested). What did they do?

STUDENT 2: Fishing, herding small animals like goats and sheep. Did you get that?

Interviewer: What do you have down there STUDENT 5?

STUDENT 5: I had the Minoans were not Greek, their civilization was the first to arrive.

Interviewer: Did you mark that as one you didn't know?

STUDENT 5: Yeah.

Interviewer: Okay. So Stephanie. What do you think this the best way for you to confirm that you know all these?

STUDENT 5: Kind of like, read over it and see if I know it.

Interviewer: Since you have a partner here, how could you partner help you?

STUDENT 5: She could ask me.

Interviewer: So, she could ask you, like quiz you?

STUDENT 5: Yeah, or just say like . . .

Interviewer: Does your mom ever do this for you at home?

STUDENT 5: Yeah. . .she does sometimes or I just study it myself.

Interviewer: So you know what, it seems to me that studying for yourself . . . how has it worked so far?

STUDENT 5: Not so good.

Interviewer: So what should you do?

STUDENT 5: Work with a partner.
Interviewer: Okay, so go ahead and do what you said you were going to do with STUDENT 2.

STUDENT 2: So let's go over the first ones you didn't know.

STUDENT 5: Not those, how about 20.

Interviewer: So you're going to ask her and she's going to tell you without looking? Why don't you want to look first.

STUDENT 2: Because it tells you the answer.

Interviewer: When you look without trying to remember on your own, you're not creating a memory of it, you're just reading it and that's what you've been doing all along STUDENT 5. That's why you're not remembering for a test. See what you can remember without looking first, then only look at the little bits you don't remember. If you can't remember, what do you do? What are all the things I've taught you to help yourself remember?

STUDENT 5: Um.

STUDENT 2: Like mnemonics.

STUDENT 5: The paperclip thing, webbing, outlines, mapping.

Interviewer: So if you can't remember, that's what you do to help yourself remember.

STUDENT 2: Remember yesterday with Pericles and we drew a house and what we did, we made mnemonics and thought pair of keys and like I said pair of “cleats”.

Interviewer: And how is that related to what he did?

STUDENT 2: Pericles helped the lower class people get in government and when you're in government you got paid. And then the so that's how they got paid. Was it the Delian league gave money for them to get paid and he helped culture blossom, with the philosophy, art, and architecture.

STUDENT 5: And writing.

Interviewer: What helped you remember all that?

STUDENT 2: My web and talking over it with STUDENT 5.

Interviewer: So you understand it, what can you do to help STUDENT 5 understand it?
STUDENT 2: Talk to her about it and teach her the things that I did.

Interviewer: Here's the thing, if you're doing all the talking, then you're doing all the learning. If you're doing all the listening it's passive, you may be learning or you may not be. It just depends. So you can't just sit and listen, you also have to be speaking or drawing or writing to show what you know.

STUDENT 5: Okay.

Interviewer: Just sitting listening, passive. Reading it over and over, and reciting it without doing something, passive. If you're passive you're not going to learn; you're not going to remember it's just the way your brain works. Do you see how that happens? So you have to be active somehow, either through talking, writing, or drawing.

STUDENT 5: Can I write down?

Interviewer: But just sitting looking is not going to make any sense. So you quiz her and you don't look unless you absolutely have to.

STUDENT 5: Okay.

STUDENT 2: Okay, let's see. So 23 is one of them. Compare and contrast America's democracy- representative and Greece's democracy- direct.

STUDENT 5: In American you can vote for somebody that's good. In Greece you would have to vote.

STUDENT 2: They would have their own opinion and they were in the government, so you could do what you want basically.

Interviewer: Okay, say it in your own words.

STUDENT 5: In America you can vote for the one you think is good. In Greece you would have to do like . . . vote.

STUDENT 2: No in Greek, they were in the government, they didn't have to vote for anyone

Interviewer: That's why it says direct.

STUDENT 2: And we have representative. People who represent and vote for us.
STUDENT 5: So America you got to vote for the one you think is good, for Greek . . . I keep forgetting. Oh yeah, they were in the government so they didn't have to vote.

Interviewer: Vote for what?

STUDENT 5: They didn't have to vote.

Interviewer: For who or for what?

STUDENT 2: For what they wanted in their society.

Interviewer: Okay. . . would you say you know it or you don't know it. ?

STUDENT 5: I know the America part.

Interviewer: Can you cross it off?

STUDENT 5: No

Interviewer: Okay, continue.

STUDENT 2: What are the satrapies?

STUDENT 5: It was like the Persian warrior.

STUDENT 5: It was Persian states.

STUDENT 2: Philosophers

STUDENT 5: Thinkers.

STUDENT 2: Ephor.

STUDENT 5: Oh god. People who enforce the law and

STUDENT 2: Collected taxes

Interviewer: Remember those tax collectors are ephors.

STUDENT 2: Oligarchy, olive car keys. Think of Sparta. Think people in power . . . how many people.

STUDENT 5: Looks at the paper.

STUDENT 2: Think a few people in power.
STUDENT 5: A government in which a small . . .

STUDENT 2: A few people in power like in Sparta. (Looks for confirmation from interviewer).

Interviewer: Instead of a democracy where everybody had power, they were a few people had power.

STUDENT 2: You have to know this one, Marathon.

STUDENT 5: Uh. . . I only think of it as alacon the Marathon. I remember, when I use my imagination I remember the guy running and saying we won, we won and then drops dead.

Interviewer: Who won and who was fighting?

STUDENT 2: Remember when Sparta and Athenians were in the hills?

Interviewer: Who were they fighting?

STUDENT 2: The Persians.

STUDENT 5: The Persians.

Interviewer: Now think about how you're doing right now. Did you circle that you know these, or did you circle that you don't know these?

STUDENT 5: (She marks that she doesn't know this information on her reflection sheet)

Interviewer: So do you see how you have to decide whether you know something or not Stephanie?

STUDENT 5: Yeah, you got to think about in your own.

Interviewer: Okay, continue.

STUDENT 2: Pericles.

STUDENT 5: I know pair of keys. He was the one that like helped the poor people kind of.

STUDENT 2: He helped poor people, but what was he doing?

STUDENT 5: Uh. . . he
STUDENT 2: Politician, Athenian. He was the one who let lower class people in government.

Interviewer: Say it in your own words, say it until you know it.

STUDENT 5: He was a politician.

Interviewer: For who?

STUDENT 5: Um. . . the Athenians.

STUDENT 2: The next one. . . the Dorian.

STUDENT 5: (Looks at study guide) Like another city-state.

Interviewer: That did what?

STUDENT 5: Had iron tools.

Interviewer: So can you say you know that?

STUDENT 5: No.

Interviewer: Why?

STUDENT 5: Because I had to look.

Interviewer: So do you think maybe this could be why you're not doing as well on the tests because?

STUDENT 5: I think I know it but. . .

Interviewer: You mark it as you know when you sort of know it, but not completely. How do you think that's going to change things for you?

STUDENT 5: I think I'll probably do better.

Interviewer: Why?

STUDENT 5: Before I thought I knew things, but I really didn't and got me all messed up.

Interviewer: And you probably thought, well I don't need to study that much because I already know it. But the truth is . . . you see?
STUDENT 2: The Spartans

STUDENT 5: Okay. They were the ones that.

(Ran out of tape. Ended observation right after ran out of tape.)
Student 2, Interview #3

Interviewer: How did you do on your last history test?

STUDENT 2: Um, not very good.

Interviewer: Why would you say that?

STUDENT 2: Um, because I feel I didn’t study hard enough and I didn’t get a good grade.

Interviewer: Why did you say you didn’t study hard enough, what did you do last time?

STUDENT 2: I would study briefly, like I wouldn’t really pay attention to stuff that I did and didn’t know so I kind of like went through it fast and I didn’t really take the time what I know and what I don’t know.

Interviewer: Can you describe the process you used to study last time?

STUDENT 2: Um, I would read the book a lot and I would just kind of look through my outlines, and like use my study guide a little bit.

Interviewer: OK, and what kind of goals have you made for studying for this upcoming test?

STUDENT 2: Um, like what goals I want? I want to get a better grade.

Interviewer: What grade specifically?

STUDENT 2: Probably like a B.

Interviewer: You want to get a B?

STUDENT 2: At least a B.

Interviewer: And how do you decide what strategies you are going to use when studying for this test?

STUDENT 2: By how well I know it and I don’t know it.

Interviewer: So tell me more.

STUDENT 2: Like, if I feel that, like, if I don’t know it really well so far in the chapter, I feel like I’m going to study more and if I feel like a know a pretty good amount of it that I know like how...
Interviewer: So, when you say you have to study more, what types of things would you do to study it, what strategies would you use?

STUDENT 2: Like for now?

Interviewer: Yes.

STUDENT 2: I like to go through my study guide and I have a study buddy, and um, we have a reflection sheet that we go through and see what problems we do know and we don’t know.

Interviewer: If there was one you didn’t know, what would you do to get yourself to know it?

STUDENT 2: I would go over it with my buddy and we’d try to talk it out and like so we keep on going over it. So we know we can get it off the top of our head.

Interviewer: And are there some other things you can do to know it off the top of your head besides talk about it?

STUDENT 2: Um, yeah, I like to use like to use mnemonics like to do stuff and I like to think of visually in my head and help me kind of remember things.

Interviewer: Are there other things you do beside those things that you learned in class?

STUDENT 2: Hmmm, like to how like to organize like when you’re studying, like it helps a lot by knowing how and what times to do it, to know how, when you do it and stuff helped me get really organized.

Interviewer: Have a plan?

STUDENT 2: Yeah.

Interviewer: OK, how confident are you that you can get a B on your next test?

STUDENT 2: Um, I’m pretty confident.

Interviewer: Why?

STUDENT 2: Because I feel like I know a lot of it, and that I can really do a good job on this test by knowing the information that I do.

Interviewer: OK, and how interested are you as you study for this test?
STUDENT 2: I’m interested.

Interviewer: How do you decide how long you’re going to study for this test?

STUDENT 2: Um, I’d say how well like how much information that I know and I don’t know. Like if I feel like I know a lot of information that I’ll kind of preview through it all and if I don’t know a lot of information I’ll spend a long time.

Interviewer: OK, and how much time do you still think you need at this point?

STUDENT 2: Hmm, maybe like a little time longer, so I know that I’m actually prepared for it.

Interviewer: Like how much, you’ve got like six days before the test.

STUDENT 2: Probably like three.

Interviewer: Three more days or three more studies?

STUDENT 2: Probably three or four more studies.

Interviewer: And how many minutes per study?

STUDENT 2: Like 15 or 20.

Interviewer: OK, how do you decide where and when you’re going to study?

STUDENT 2: Um, when I usually like to study like during the evening time and what was the other question?

Interviewer: When and where.

STUDENT 2: And I like to study in my room where it’s quiet and I’m away from everyone else.

Interviewer: Which study strategies work the best for this class?

STUDENT 2: To not use the textbook as much because I feel like you’re clobbering yourself with a lot of information that you don’t need to know and you just need to use your study guide because that’s the main information you need.

Interviewer: And so what do you do when you get the answers on the study guide; is there anything you do with those answers to help you to keep them in your mind?

STUDENT 2: I try to go through them so I can remember them for the test, instead of knowing the wrong thing and knowing the right information.
Interviewer: Are there strategies you use to do that?

STUDENT 2: Um; well kind of just like I like to go over it and stuff, I would just like do what I usually do use mnemonics and image things like in my head and stuff like that.

Interviewer: How do you keep yourself motivated to study for your test?

STUDENT 2: Cause I want to get a good grade and if I get a good grades, like if I get good grades I can get into college and stuff so like I kind of want to get a good education.

Interviewer: OK, what strategies do you use when you’re not understanding or you’re not remembering?

STUDENT 2: I will try to go over them, I like going over them with people, like they help more, like you can help get more out of it instead of doing it yourself because if you don’t know anything, you can get someone else to help you.

Interviewer: So, discuss it? Instead of learning it by yourself? How do you keep track of what you need to study for your test?

STUDENT 2: I like to just check it off my reflection sheet and that helps

Interviewer: How do you know that you’ve studied enough for a test?

STUDENT 2: When I know I like but won’t be like totally study, study, study, I’ll go over it a little but I won’t be like study, study, study.

Interviewer: OK, and how do you decide how well you’ve done on a test?

STUDENT 2: Hmm, by my grade and how I’ve studied if I feel like and how I do on the test because sometimes I rush through the test and I can’t focus on it just to get it done.

Interviewer: So, if you’ve got through a test and you studied just a little bit but you got a bad grade; how does that make you feel?

STUDENT 2: Um, pretty sucky.

Interviewer: What if you study a lot and you get a bad grade?

STUDENT 2: Umm . . .

Interviewer: Is that better or worse?
STUDENT 2: Worse.

Interviewer: Do you have say in your mind why trying I’m going to get a bad grade anyway?

STUDENT 2: It’s worse. No, I’m not really thinking that way because it brings you down even more about how you would study and stuff.

Interviewer: So, what’s the main reason you got the grade you got last time?

STUDENT 2: Um, I rushed through the test and I didn’t study a lot.

Interviewer: Why did you rush through the test?

STUDENT 2: Because I just wanted to get it over with and just get it done and like I didn’t want to hassle like and go through it all.

Interviewer: Why?

STUDENT 2: I don’t know, I just didn’t want to do it anymore.

Interviewer: When you have a test in front of you how does that make you feel?

STUDENT 2: I get really nervous.

Interviewer: So because you’re nervous what happens?

STUDENT 2: I start rushing through things.

Interviewer: Because?

STUDENT 2: Because I don’t want to be nervous any more, like I want to get the tension off of me.

Interviewer: So even if you don’t do very well, it’s better to not have it in front of you?

STUDENT 2: No, I think that I just like need to know it’s going to be OK because I think, it’s hard, I know that I worked harder than I did last time.

Interviewer: Do you think you are going to be as nervous?

STUDENT 2: No.

Interviewer: So, do you think you’ll rush through it? Because you’re more prepared?
STUDENT 2: Yes.

Interviewer: Interesting, that’s interesting. So, in general, overall what’s your plan so you’ll do better next time?

STUDENT 2: Um, just to do my hardest, studying hard at a time and, um, try to work as hard as I can.

Interviewer: OK, any final comments about how you’ve changed from the first time we did this to the last time?

STUDENT 2: Um, I feel a lot better, I feel like I learned, I feel like I did a lot better.

Interviewer: OK, thank you.
Student 3, Observation #3

Interviewer: Go ahead and show me what you're going to do.

STUDENT 3: So, every day I get, I usually go on my study guide and I ask the questions using the reflection sheet by doing stuff in my head and picturing in my head whatever I can think is the answer.

Interviewer: Okay.

STUDENT 3: And then what I do is I open, I still close my eyes and answer the questions and picture in my head the answer.

Interviewer: Okay, so you're visualizing.

STUDENT 3: Yeah. And if it's right I keep circling.

Interviewer: If it's wrong?

STUDENT 3: If it's wrong then I will just . . . then I will still circle it but on the other side.

Interviewer: Okay. So what's your plan? Why don't you show me your plan today for studying. What do you want to focus on?

STUDENT 3: I'm going to focus on the cards that you gave me.

Interviewer: The vocabulary cards?

STUDENT 3: Yes, I still don't know some of them. I still need to do a little more studying before the test.

Interviewer: Okay. So go ahead and do what you're going to do and I won't interrupt you any more.

STUDENT 3: Okay . . . reads a questions. Describe how early Greeks made their living. (Closes his eyes.) I see a guy fishing and catching tons of fish. I see people. I see two people in boat selling things and getting other things. One part is selling stuff to survive like animal skins and the other guy is selling crops and other stuff. And that's about all. I only got fishing and trading.

Interviewer: So would you say that is something you know, or is that something you sill need to study?

STUDENT 3: I should still study. I need more information.
Interviewer: What's the additional information you need?

STUDENT 3: Farming is actually really important.

Interviewer: So, what are you going to do to help yourself remember that part?

STUDENT 3: Maybe . . . make a picture and then thinking of farming and what they farmed.

Interviewer: Go ahead and do what you're going to do to help yourself.

STUDENT 3: Okay. I could make some carrots and then a . . . some and then some tomatoes and visualize. (closes his eyes) I see him planting carrots and then harvesting carrots and then selling carrots and the people offer . . . making . . . growing tomatoes and then after like five days. When it's done, they harvest it and then they sell. What they do is after all is done they use it for something and then they make bread and then they sell it, so that they could get money off of it.

Interviewer: Okay, now what?

STUDENT 3: Then

Interviewer: Are you going to say yes you know number 11 or do you still need to study it?

STUDENT 3: I would still say no. Then I would. Then I would put a star on number 11 to say I didn't know it and then go to the next one.

Interviewer: Okay, now what?

STUDENT 3: And then after a few days of studying this, I usually when you go to your room after school, I will look at some concept maps and things to summarize.

Interviewer: Can you tell me about that one?

STUDENT 3: (Looks at a concept map and reads it.) I think the common thing is education and they got it from. Wait they are from Greece and they are rivals. The difference between them is that Athens common theme is education and they have philosophers and they have democracy and they got it from Pericles and they got words from Phoenicians. And Sparta they only focus on the military and they had oligarchy who has holds power and it doesn't have to be two it can be three or four. And they got the alphabet from the Phoenicians.

Interviewer: Okay. Now that you said all that, how does that relate to your study guide?
STUDENT 3: It relates to the study guide because . . . because . . . it has more information than what is inside there (the study guide).

Interviewer: Let's look at the study guide and the reflection sheet what are you going to do on your study guide and reflection sheet after talking about that concept map.

STUDENT 3: It only gives you a few stuff so you know it. If you use all this at once and then it's just like scribbling.

Interviewer: Why?

STUDENT 3: Because when you're scribbling you don't fill up the whole paper and you get some white spots, but and it's just like if you did this all at once (Studying the concept map) you'll just forget it.

Interviewer: So what's the better way?

STUDENT 3: You get a few things on it and . . . it's just like filling up the whole paper up with no whiteness.

Interviewer: So what do you want to focus on now?

STUDENT 3: Usually the definitions first.

Interviewer: Okay.

STUDENT 3: Satrapies are states in Persia (Closes eyes as he recalls the definition) and then the next one is the philosophers are people think and only think about life. The ephors are people who did taxes for Persians after being treated (inaudible) and were like cops are the people who watch out for people who do bad stuff. An oligarchy is two people or more people who have power and they are usually are a small group. A marathon is when somebody runs and runs until and while he was running he said we beat the Persians. It was one of the most important things in Greek history. Pericles was a man who helped the government by letting the poor people money to earn that money from helping him. He let culture blossom by giving money to do to math, architecture, and writing.

Interviewer: Brent I am so proud of you. You are amazing. Good job. Keep going. I am sorry to interrupt you. My heart was so happy, I had to say something.

STUDENT 3: Then the Dorian League is two people fighting. It's just like in football when they have win

Interviewer: That's the Delian League.
STUDENT 3: Yeah the Delian League. That's when it is just like football when they have ram into each other and the people and then I don't think I have... The Spartans are the people who care about fighting and getting stronger and getting military. The polis is the Greek city-state. The agora is an open market. It is like Safeway. It is a place where you can buy stuff like food.

Interviewer: Now that you've gone through your definitions, what would you do... on your reflection sheet?

STUDENT 3: On my reflections sheet, I should circle all these.

Interviewer: Do you know all them?

STUDENT 3: Yes, except this one.

Interviewer: That word actually is Delian, so you can replace that word with Dorian. Okay... did you know all those. So what do you think are you good or do you want to do more?

STUDENT 3: Well, later on I'll do more.

Interviewer: For today are you done?

STUDENT 3: Yeah today, I'm done, and the next day I'll go on.

Interviewer: So these, do you know? (Pointing to the reflection sheet) You know all of these except for that one?

STUDENT 3: Yeah.

Interviewer: So what should you do?

STUDENT 3: (circles the ones he knows)

Interviewer: Did you make flashcards for these ones? (He made flashcards for the first 10 questions)

STUDENT 3: No.

Interviewer: So what are you planning to do?

STUDENT 3: (No response)

Interviewer: Did you show your mom you knew these?

STUDENT 3: Yes.
Interviewer: What did she say?

STUDENT 3: I never showed her.

Interviewer: Okay. I'm going to stop the video now.
Student 3, Interview #3

Interviewer: How did you do on your China test, the last test?

STUDENT 3: I did better on knowing what to do and if I didn’t know, um, I could just, I could just look into my study guide and just check and then when I get home, I picture, I mean, and then I go over it.

Interviewer: And why do describe your success that way, that you’re doing better?

STUDENT 3: Because when I usually, cause whenever I, um, get help, I just ask for it, and um, and then Mrs. Lyons helps me every time I’m stuck on something and, um that’s usually how I get the, um, how I get the, um, how I get, help.

Interviewer: Okay, and how about your success when you’re by yourself, without me or your mom, how do you feel about that, when you’re studying by yourself?

STUDENT 3: If I don’t know anything I could just go; I could just use the cards.

Interviewer: The flash cards?

STUDENT 3: Yeah, the flash cards.

Interviewer: Okay. And so what kind of goals do you make when you’re studying for this test, the Greece test?

STUDENT 3: My goals are to do a little bit at a time like Mrs. Lyons told me, and then every time I stop like on the search thing, then the next day I keep on going.

Interviewer: So when you say do a little bit at a time. . you mean study just a few things at a time?


Interviewer: How do you decide which strategy to use, like you said flash cards?

STUDENT 3: Because it’s, um, it goes faster if I use the right type and that I know.

Interviewer: So it goes faster if you use certain strategies?

STUDENT 3: And then when I go, when I do something that I don’t know, it gets harder.

Interviewer: Okay, how confident that you can get a B on your next test?
STUDENT 3: I don’t know that yet, I don’t know if I’m confident, that I would get an A or a B or a C.

Interviewer: No. You don’t know yet?

STUDENT 3: I’m still working.

Interviewer: OK, so at this point, you’re not confident?

STUDENT 3: I’m not sure if I’m confident.

Interviewer: Okay, how interested are you when you’re studying for your Greece test?

STUDENT 3: Um, when each test, after I finish a chapter and then I go right back to “don’t even know what we’re talking about” and then as Mrs. Lyons pushes me through, I get more and more strategies of how to do stuff.

Interviewer: So does that make you interested or not interested?

STUDENT 3: It gets me more interested and more confident that I’m going to get the right answers.

Interviewer: Why does it make you more interested?

STUDENT 3: Because, um, then the next year when I don’t have you, I can use that information and I can teach the other teachers in history how to do different things.

Interviewer: Okay, how do you decide how long to study for your test when you study each day?

STUDENT 3: Um, I decide, um when I have the, when I have the, when I usually have, um, I forgot what. . . .

Interviewer: How do you decide how long to study?

STUDENT 3: Oh, because an hour and one minute is not enough so in the middle of an hour and like 5 or 1 minute, then I know right when 30 minutes because its better I get the right amount of information I need.

Interviewer: So between 30 minutes and one hour?

STUDENT 3: No, in between one hour and one minute.

Interviewer: One hour and one minute?
STUDENT 3: Yeah, because then I know right then that it’s not enough, like for one minute, it’s not going to help me at all, like zero percent.

Interviewer: So any time between one hour and one minute?

STUDENT 3: No.

Interviewer: So more than one minute and less than one hour?

STUDENT 3: Yeah.

Interviewer: How do you decide where to study?

STUDENT 3: Where I can think and where I could concentrate and where there’s no noise cause there’s lots of noise in my house.

Interviewer: So where do you study then?

STUDENT 3: I usually study on my in the living room.

Interviewer: And how do you decide when you will study?

STUDENT 3: I know when to study so I could um just so . . .

Interviewer: Like what days and what time of the day?

STUDENT 3: Oh, yeah, well I think I should study every day so I get the right information.

Interviewer: And then what time of the day do you study?

STUDENT 3: What time, let me think, right when I get home, I study for 30 minutes and then I go back to my homework and then if I still have enough time and I don’t have anything to do, then I can read a little bit and then study and then read.

Interviewer: Okay, which studying strategies work well for tests in this class?

STUDENT 3: Webs, um, outlines, and an awesome map, because we should know where it is.

Interviewer: What did you do last night? What were you using yesterday?

STUDENT 3: I was using the cards.

Interviewer: What cards? Were they playing cards or other cards?
STUDENT 3: Cards with other stuff.

Interviewer: What stuff?

STUDENT 3: Cards with stuff that I needed to know on the Greek.

Interviewer: OKAY, and how did you decide which strategies to use?

STUDENT 3: I know what strategy to use so I could; I know what strategy is best for me um, because it gives me more, cause one could give me a little bit of information and one could give me more information and one could just give me a little bit and a little more information.

Interviewer: OKAY. So what do you do to keep yourself motivated to study for your test and not quit?

STUDENT 3: What does motivation mean?

Interviewer: Like want to study and not quit.

STUDENT 3: When I get the point of, um, when I get the point of, um, usually when I am bored, I usually just study, cause I don’t know why, but I’m just bored, that’s what usually makes me not want to stop.

Interviewer: OKAY, because you’re not bored when you study?

STUDENT 3: Yeah.

Interviewer: What do you do when you don’t understand or you can’t remember what you’re supposed to learn?

STUDENT 3: Then I just look in the book.

Interviewer: How do you keep track of what you need to study for your test?

STUDENT 3: I keep track of what I want to study so I could get my so I could get a better grade.

Interviewer: I know but how do you keep track of it; how do you know what to study and what not to study?

STUDENT 3: Repeat

Interviewer: I know but how do you keep track of it; how do you know what to study and what not to study?
STUDENT 3: I should do the ones that I don’t know and then if I don’t know then . . .

Interviewer: How do you keep track of that?

STUDENT 3: I keep track of that on the yellow piece

Interviewer: On the reflection sheet?

STUDENT 3: Yeah, on the reflection sheet

Interviewer: How do you know when you’ve studied long enough for a test?

STUDENT 3: When I get at least the stuff that I don’t know done.

Interviewer: When you got the stuff you don’t know done. How do you decide how well you’ve done for a test?

STUDENT 3: I know, I know, I know, when I was good on a test after I after I don’t feel kind of, um, stressed out.

Interviewer: When you’re not stressed?

STUDENT 3: Yeah, when I’m not stressed out.

Interviewer: What’s the reason you got a C on your last test?

STUDENT 3: Um, I don’t know.

Interviewer: You don’t know; do you have any idea why you got a C and not an F?

STUDENT 3: Oh, because I worked better and worked through and, and pushed it better.

Interviewer: And why do you think you didn’t get an A?

STUDENT 3: Because maybe I didn’t practice enough.

Interviewer: You didn’t practice enough? How did you feel about getting a C?

STUDENT 3: I felt like I felt like I was going to get a C because then I knew that I didn’t really say enough; I, um, because then I knew that I didn’t

Interviewer: Did that make you feel happy or sad or okay?

STUDENT 3: Okay.
Interviewer: What do you think you need to do to do better on this next test?

STUDENT 3: By doing something by doing more things than the last test.

Interviewer: More things, what are more things?

STUDENT 3: More studying than the last test.

Interviewer: Okay, this is our third time I’ve observed you. Is there anything else you can say about how you’ve changed as a result of this?

STUDENT 3: No.

Interviewer: No? Okay, thank you Student 3.

STUDENT 3: Bye.
Student 4, Observation #3

Interviewer: Okay.

STUDENT 4: I know what Marathon is. It's a race and a short distance from Athens.

Interviewer: Okay, so you know both.

STUDENT 4: Yeah.

Interviewer: So what do you think?

STUDENT 4: Yeah, I know that one. So Pericles. I know about him, but the definition is different. He was a general who led the Delian league, but I know him as a slave freer. So would I know it if I know him as that?

Interviewer: You need to know at a minimum what is on the study guide.

STUDENT 4: Well, I know that he gave jobs to slaves. He helped them dominate. If it says what league, Delian comes to mind because all the other leagues probably won't make much sense. So, I've got that one. Spartan, yes know it. Polis, know it. agora, know it. What are the other ones. Not all of them are on this one. There's only ten.

Interviewer: Look right here.

STUDENT 4: Ooh I know this, 12. Explain how early Greeks made their living. I sort of know it.

Interviewer: So, if you don't know it, circle it on this side and cross it off after you know it.

STUDENT 4: 17, yes I know that. Yes, I know that 19, 21, done. The rest of these I circle these. Big circle on that. Cross out the ones. Can I cross them out if I already know them?

Interviewer: Yes. How about the map, do you know the map?

STUDENT 4: No. I know 1-7, 8, 9. 10. I just might no know this one. And then 17, what about 13, and 14. Oh. Okay. Let's get started.

Interviewer: What's your plan, what are you focusing on?

STUDENT 4: First, I'll focus on the words (concept map).

Interviewer: What is that related to?
STUDENT 4: This is related to Athens, Sparta, and Persia and some of the questions on here. Compare and contrast Athens and Sparta. I compared them to oligarchy, but there really more than that. I also can see list the events that caused the Persian empire to fall. That's also related. And let's see, know why the Delian league was formed and who was part of it. If I wanted to, I put Athens by itself, because it's kind of an alliance. Then they started finding.

Interviewer: Go ahead and do what you're going to do and it will be like it was before.

STUDENT 4: Okay. (Reading concept map) Colonies wanted to I'm connecting Persia to farming, Athens to farming, Sparta to farming.

Interviewer: How are you labeling all those?

STUDENT 4: I'm going to put Persia to there, needed farming to feed their people. Now I'm putting from Sparta to farming also. Using trade. They worried about eating healthy and used other food for trade. Athens had fertile land for farming (Writing notes on concept map. Adding more labels and connections).

And then Marathon I connected Athens twice to it. It goes to Athens and goes to Sparta. They beat Sparta. Right?

Interviewer: Who were they fighting against?

STUDENT 4: Persia, and then Athens, beat Sparta.

Interviewer: Just for the battle of Marathon, who was fighting against whom?

STUDENT 4: Athens versus Persia. (Writing more notes on concept map)

Okay so for Persia to satrap, I'm going to put an arrow straight to that. Satrap was the name for the ruler. That's not on the list.

Interviewer: That's okay, you can still use that word.

STUDENT 4: A satrap couldn't go to anything else. Zoroastrian I connected it to Persia because that was their religion. I remember this is their religion. It religion because it ends with an ianism and there is an A right here I think of first I think of the A at the end of Persia and then I think of Zorro and then I think of ostrich. That connects those. I know Persia and Zoro--ostrich. That's how I know to spell it too.

Interviewer: Interesting.
STUDENT 4: Now, I also connected Sparta to alliance with Persia and after then they started fighting and went into alliance with those. They were kind of traitors. They went back and forth so.

Interviewer: Good. Do you remember in which war that happened?

STUDENT 4: Peloponnesian war.

Interviewer: Do you think you should leave it empty or label it?

STUDENT 4: I should label it because I might think it's from another war. Instead of putting Persia connected to the lines, it made it look like Athens was with it. I connected it to Sparta's line.

Interviewer: Good, good.

STUDENT 4: Writing notes in concept map.

Interviewer: It's kind of complicated, huh.

STUDENT 4: Not really, because I made it up.

Interviewer: Are you starting to think about things as a concept map as you're learning it? Are you putting things in your own head that way or is it only when we do it on paper?

STUDENT 4: Yeah. I put in my head my own way. Also, while we're doing it I can put it in my head. First we have to finish the lesson and then I put it in my head because that lesson only those words. And the study guide words. I wait until each section to figure out all of them out and then I separate them and stuff. And then like more important things and the non-important things. Like I know the wars or a period of something or a time. Usually if it has a year next to it, it is important, but not all of the time, but that's not always the case.

Interviewer: How do you know the difference?

STUDENT 4: When something big happens. Not like the falls. Pretty much everything has a fall. It's not as important, like when it's a person ruling and another person from another state came and ruled with a peace treaty. If that were to happen that would be really like awkward. That won't usually happen and you over rule them, so I also connect Athens to colonies. I think Sparta sent people to (Looks at notes) what's it called? I think they sent them not a beach. Yeah a beach. It was close by their main territory. That's a colony. I know Sparta definitely goes to colonies. It doesn't really say about Athens making colonies.

Interviewer: Now why did people start making colonies?
STUDENT 4: Because people were at first. . . Athens was kind of beating them. If they were to lose they would need a colony to spread their religion.

Interviewer: Do you remember the original reason why they had them?

STUDENT 4: To spread their religion.

Interviewer: It was because of this. . .

STUDENT 4: They needed farming?

Interviewer: They ran out of land.

STUDENT 4: It's kind of what I said, the land is getting overrun.

Interviewer: They didn't get overrun. They just had too many people and couldn't support them.

STUDENT 4: Oh. You need a colony to back you up. I also connected Athens to what was it. . . allies and put Dorian, I mean Delian league so. . . yeah. . . (Looking at map)

Interviewer: So you added a box?

STUDENT 4: I'm about to add one. Delian league. Then I'm going to connect it to Athens because they fought against Sparta.

Interviewer: Was Athens or Sparta part of the Delian League?

STUDENT 4: Sparta, no Athens. They were part of it? I thought they just were allies with it.

Interviewer: They headed it.

STUDENT 4: Oh. . . I think Sparta helped the Delian league. Sparta no had another ally. What's their name?

Interviewer: The Peloponnesian League.

STUDENT 4: Yeah. (Adding notes to concept map) And now. Since I got all that. I'm going to do. (Goes to reflection sheet and sheet and study guide to see which study guide questions he can answer) First, I'm going to cross some of these out. Especially, first I didn't know Persia's religion, now I can cross it out. And I also . . .okay, the black shore of the Black Sea. I can cross 13 out. And I know why the Delian League was formed and who was part of it. I can cross that out. Fighting,
fighting with... they had a common enemy, oh Persia. I can definitely cross that out now. I still have to do that.

Now I'm going to do the map.

Interviewer: What's your process for that? What strategy will you use to study the map?

STUDENT 4: Well, first, I'm going to need my book for part of it.

Interviewer: It's already labeled? But you like the book?

STUDENT 4: Yeah, I need to know who's in all of those places because I wasn't here for everything. Mainland Greece is... (Looking at map in book and reading the narrative about the geography of Greece)

Interviewer: So what are you reading about there?

STUDENT 4: I'm reading about where they are because it says if you fly over Greece today to the west you will see the Ionian Sea to the west is the Mediterranean Sea. But on here (The study guide) it's not on here.

Interviewer: So what does that mean?

STUDENT 4: It's not that important. The Mediterranean Sea because Peloponnesian looks like a hand because... Olympus sounds like a big place. I know what Thebes is. And Athens I know is near Sparta, not too far away. The Sea of Crete is south of Aegean Sea is near Athens. Like a moose face. And Thebes is not in Mt. Olympus, but near Mt. Olympus and then Knossos is not too far from Crete.

Interviewer: Knossos is actually a city on Crete.

STUDENT 4: Oh, it looks like an alien laying down with three eyes.

Interviewer: Yeah, somebody said it looked like a slug. So, what is the slug?

STUDENT 4: Crete. The Mediterranean Sea is away from everything pretty much. It's on the other side of all this. Now, I have all this.

Interviewer: Do you feel like you know it? Could you label it on a map?

STUDENT 4: Yeah because on the map, it can't show a small little space because Mt. Olympus is a big enough space and Peloponnesia looks like a hand and Sparta is in Peloponnesia and Athens is not far from Sparta. And Thebes is almost in Mt. Olympus and the Sea of Crete is near Crete and that's at the very, very bottom and there's a horn pointing on it. There's nothing on it.
Interviewer: So what do you think, do you know it? Do you know your map? Are you ready to cross it of your thing?

STUDENT 4: Yeah, I think I can cross it out. I have it all in my head, all the images and stuff.

Interviewer: At this point do you want to study more or are you satisfied with what you've accomplished in this 25 or 20 minutes?

STUDENT 4: I feel satisfied.

Interviewer: Okay
Student 4, Interview #3

Interviewer: How did you do on the last history test? Do you remember?

STUDENT 4: Um, I think I got a C or a B.

Interviewer: You got a B+

STUDENT 4: I couldn’t really remember because that was a long time ago.

Interviewer: So how would you describe your success for studying for that test?

STUDENT 4: Well, I had a lot of the concept map was great, what one was like, like big and had a lot of easy things related to and yeah.

Interviewer: So how would you describe your approach to studying?

STUDENT 4: Good.

Interviewer: Why would you describe it as good?

STUDENT 4: Because it helps you keep the stuff in your mind instead of just learning it in class and forgetting it all.

Interviewer: What did you do to make that happen?

STUDENT 4: Um, by reading over the study guide and trying to answer the questions without looking.

Interviewer: Okay. What kind of goals did you make for studying for your Greece test, what kind of goals did you have?

STUDENT 4: I should know all the vocabulary guide by the third session, and I want to get the map finished with, and I wanted to also learn a little bit more about them about winnowing and stuff since I wasn’t here for that.

Interviewer: Okay, what are your overall goals for this test?

STUDENT 4: To get an A.

Interviewer: To get an A? How did you decide which strategies to use today when you were studying?
STUDENT 4: Since the lesson wasn’t really hard, it was kind of big, but barely and everything was easy to relate to because the stuff was very cool and fascinating and there are a lot of fascinating things so . . .

Interviewer: When you say “stuff”, what do you mean?

STUDENT 4: The words were really fascinating and what happened was really fascinating.

Interviewer: So, how did you decide which strategy to use to remember all that?

STUDENT 4: The concept map had a lot of action in it so I got to write a lot.

Interviewer: Okay, how confident are you that you can get an A on your test on Monday?

STUDENT 4: Very confident because I studied my flat out best. I studied my flash cards yesterday.

Interviewer: You made flash cards too?

STUDENT 4: On line.

Interviewer: Oh, you did the on line flash cards, oh cool!

STUDENT 4: And, I, today I studied the other questions that didn’t involve 1-10 so that helped me a lot too.

Interviewer: 1-10 is the vocabulary.

STUDENT 4: Yeah, so I didn’t study that, I studied the questions.

Interviewer: Okay, how interested are you when you study for your test?

STUDENT 4: Very interested, because it’s fun like.

Interviewer: OKay how do you decide how long you need to study for your test?

STUDENT 4: Well, sometimes I just keep studying because it’s interesting and I wanted to keep in my head for a long time so I studied not just for the test, but to keep it in my mind.

Interviewer: So when you say you want to keep it in your mind, what do you mean by that?
STUDENT 4: Like when I get older, I want to still remember this stuff without having to go into a book or go on the Internet and that stuff.

Interviewer: Why?

STUDENT 4: Because I want to know that I can remember stuff and not just learn stuff and forget it that would be like learning all the vocabulary and the grammar and just forgetting it all.

Interviewer: Why is that important to remember it forever and ever?

STUDENT 4: Because when you stumble you never know what you’re going to be in life. Because you can be like a historical person, not a historical as in like . . .

Interviewer: Back in time? Historian?

STUDENT 4: Yeah, historian, or you can be an architect and if you find something you can relate it to something in Greece or something in China like if you find anything, like clay soldiers, you find those somewhere else you can why they were over there.

Interviewer: Hmmm, how do you decide when and where you will study for your test, Caleb?

STUDENT 4: Well, I think library and school are the best places, because at home and school don’t feel the same when you study; like at home, you really just don’t want to do a lot, but at school you want to work and have fun and stuff.

Interviewer: So, how do you, what do you do if you don’t have enough time at school, or do you spend extra time, so how do you deal with that?

STUDENT 4: Well, if I can’t study at school, I study outside.

Interviewer: Oh, you go outside of your house? Where?

STUDENT 4: Well, I just climb a tree with all of my stuff or I go to the park.

Interviewer: Hmmm, you study at the park?

STUDENT 4: Yes, because there is just a lot of land and stuff so.

Interviewer: The open, the open space? How do you decide when to study, like today is four days before the test and it sounds like you studied a little bit before that, how did you decide when to start?
STUDENT 4: When I can’t remember the most things, because I can’t remember, because then I have a concept then, I would have lost a lot because I’m studying now about different things.

Interviewer: What do you mean by “then”?

STUDENT 4: Like if I had started before I had the yellow sheet or a few days before, I probably would have thought different than what I’m thinking now.

Interviewer: Okay, so you wait until you know what’s on the test, it sounds like?

STUDENT 4: Not when I know what’s on the test, because I might know it, but I don’t know if it’s going to be on the test. I know that most of the stuff might not.

Interviewer: Okay, which study strategies work well for your testing history?

STUDENT 4: Well, now the map and the concept map and flash cards on line when you read it and answer the question.

Interviewer: Questions?

STUDENT 4: Yes, questions, and also when you actually write them, that’s better because when you write them it gets stuck in your brain.

Interviewer: How do you determine which study techniques to use when studying? How do you decide to use a map or whether to use a flash card one time or whether you do writing?

STUDENT 4: The concept map this time since it was more fun. I used the concept map also if it’s fun and its short, I also use the concept map, but if it is just short and interesting and not as fun as like this one, this one is the funnest by far and I would usually do flash cards, I cover them up and read them.

Interviewer: Okay, how do you keep yourself motivated to study for your test?

STUDENT 4: Well, I like a lot of history stuff but not like the history channel, because they mention a lot a lot of old stuff, they don’t really talk about like Greece, they talk about Greece, but they talk about the buildings more than what happened and it’s more interesting about what happened then about the buildings.

Interviewer: So, how do you keep yourself motivated?

STUDENT 4: Well, I just think what would I rather do, watch history channel at home or be interested in this history?
Interviewer: Okay, what strategies do you use when you’re not understanding or remembering?

STUDENT 4: If I can’t remember, I definitely use, um, not the book or anything, not the mapping or the flash cards. I read my notes, because that’s the most thing they are, you can remember because they are your notes. And I use mnemonics because you relate to stuff and that makes you remember it.

Interviewer: How do you keep track of what you need to study? How do you know, I know this and I don’t know this?

STUDENT 4: Well, now that we have a yellow sheet, I’m going to probably keep numbering it, my . . . when we stop getting them, I’m going to number it myself on a white sheet of paper.

Interviewer: Keep track that way?

STUDENT 4: Yeah.

Interviewer: How do you know when you’ve studied enough for a test?

STUDENT 4: Well, when I feel like I can’t study any more really, I usually can’t remember all of it, I think I studied a little bit too much the last test, I don’t remember, how many minutes did we study?

Interviewer: Um, an hour or more?

STUDENT 4: 30 minutes or 25 minutes.

Interviewer: How do you decide how well you’ve done on a test; how do you decide, “Oh I did well” or “I didn’t do so well.”

STUDENT 4: Not the grade, but half way the grade and half way if I did my best.

Interviewer: So if you get a bad grade but you studied your best. . .

STUDENT 4: And I did my best on the test and I really focused, I still think I did great.

Interviewer: Even if you got a C?

STUDENT 4: Because I shouldn’t get an F if I studied good.

Interviewer: What is the reason you got a B+ on your last test?
STUDENT 4: Well, I think I studied a little bit too long I forgot some things that I knew and then after too long and up to 30 minutes and then I noticed that I started forgetting.

Interviewer: So, you know that you really need to break it up.

STUDENT 4: Yeah.

Interviewer: How did you feel about getting a B+?

STUDENT 4: I still felt good, it’s better than the last one, which was a C+.

Interviewer: What do you think you need to get that A on the next test coming up on Monday?

STUDENT 4: Exactly what I’m doing now, study with the study partner and I have a timer and pay attention to the studying more than what’s around me.

Interviewer: OK, now this is the third time we’ve done this, Caleb, do you have any comments about how you’ve changed from the first time, which was the India test, to this time?

STUDENT 4: Well I’m studying concept maps and usually . . . mapping and stuff and mnemonics but I wouldn’t really use the web activity or the flash cards or read, I would read my notes sometimes.

Interviewer: The first time we did this, do you know what you used?

STUDENT 4: The book.

Interviewer: And you didn’t even have the study guide! So why is that, why do you think you changed?

STUDENT 4: Well, at first I wasn’t really super good at studying, but I was still learning, so then I didn’t know it was mnemonics. I just thought it was ways of connecting. And then after the flash cards, I wanted to try it on the website, remembered more writing it but also I can remember more on the website if it’s funny, like put a slide show of the flash cards which made it funny, like sounds and stuff.

Interviewer: You made your own PowerPoint flash cards? Good job! So, how do you feel about yourself?

STUDENT 4: Way better, I’m not only reading the book or focusing on one thing. I’m focusing on multiple things. I’m using almost all the strategies and I’m using other strategies.
Interviewer: Good job, so how do you feel about yourself now than before?

STUDENT 4: I’m not only reading out of the book, but focusing on multiple things; I’m using all the topics.

Interviewer: All the strategies?

STUDENT 4: Yes.

Interviewer: Okay, any other comments?

STUDENT 4: Well, I also like using the strategies, and I put the vocabulary words in a poem.

Interviewer: You make the words into a poem?

STUDENT 4: These words are kind of hard, but other ones.

Interviewer: Other ones you could? Anything else?

STUDENT 4: No.

Interviewer: Thank you, Student 4.
Student 5, Interview #3

Interviewer: How did you do on your last history test?

Student 5: Bad.

Interviewer: Why do you say that?

Student 5: I, because I just learned that like, I thought I learned that last time, things that I really didn’t.

Interviewer: Okay, why do you describe the fact that you didn’t know it, why do you say that?

Student 5: Cause, like I couldn’t get it, I couldn’t, I didn’t know it, like off the top of my tongue.

Interviewer: Okay, so what does that mean when you know it at the top of your tongue?

Student 5: You say it really quickly and you know it and if you don’t, then you don’t know it.

Interviewer: So what were you doing before?

Student 5: I was struggling to get the right answer, and then I just realized that I didn’t know it.

Interviewer: Okay. What kind of goals did you make when studying for this test?

Student 5: Um, well since I know that I what I learned now, I’m probably going to get a good score.

Interviewer: So what is your goal?

Student 5: To get a good score.

Interviewer: What would be an example of a good score?

Student 5: Like an A or a B.

Interviewer: What do you describe what strategies you use when studying.

Student 5: I just, um, think that I should go off the study guide sometimes, because that everything’s mostly on there where I just go through the notes; that makes me think that I’m going to get a good score.
Interviewer: Okay, you’re going to go through the study guide or you’re going to go through your notes. What else?

Student 5: Didn’t really help at all, so, I sometimes go through the book, but not all the time.

Interviewer: Is there anything else you can do to help yourself remember the stuff that’s on the study guide?

Student 5: Um, the mnemonics.

Interviewer: Mnemonics, okay, and what else?

Student 5: And, the, I forget what it’s called.

Interviewer: Describe it.

Student 5: What you just talked mnemonics.

Interviewer: Anything else you look at to help you remember?

Student 5: Um, things like that one I don’t know.

Interviewer: Study guide? The reflection sheet?

Student 5: Yes, and I just look over at the ones I don’t know.

Interviewer: Okay. How confident are you that you can get a good score on this next test Monday?

Student 5: Pretty confident; I’m not so confident right now.

Interviewer: Why?

Student 5: Because I feel like there’s a lot of stuff I don’t know, since we just went over a lot of it. I feel like I need to study a lot more.

Interviewer: Okay. How interested are you in studying for this test?

Student 5: Um, pretty interested; I really want to study so I can get a good score.

Interviewer: How do you decide how long you’re going to study?

Student 5: Um, it depends on how much I know and don’t know, I go longer if I don’t know stuff and I go shorter if I do know.
Interviewer: How long are you going to study; so the test is Monday, today is Tuesday, how much time do you think you’ll spend?

Student 5: Probably half an hour a day.

Interviewer: A half hour a day from now until then?

Student 5: Yes.

Interviewer: How do you decide where and when you will study?

Student 5: Um, I just find a quiet place and then I go there.

Interviewer: Okay. How about when during the day?

Student 5: After my homework, if I have a lot; if not, I’ll just do it before homework.

Interviewer: Okay. And which study strategies work best for this class?

Student 5: The study guide.

Interviewer: And doing what with the study guide?

Student 5: Um, covering if I know it and if I don’t I’ll just keep on going over to see if I know it.

Interviewer: Anything else?

Student 5: Um (inaudible)

Interviewer: Okay. Um, how do you keep yourself motivated to study for the test?

Student 5: I just think about my last scores. And just that I really need to need to study to get a better score and that keeps me going.

Interviewer: Okay. And what strategies do you use when you’re not studying or remembering what you need for the test?

Student 5: I just ask for help and just like (inaudible).

Interviewer: Just ask for help?

Student 5: Yes.

Interviewer: And how do you keep track of what you need to study?
Student 5: Um, well I’ll just do parts of studying and then really get that part (inaudible).

Interviewer: Is there anything else you can use to use to help yourself remember what to study?

Student 5: The reflection sheet.

Interviewer: Okay. How do you know when you’ve studied enough?

Student 5: If I know a lot of the questions.

Interviewer: What tells you that you know it?

Student 5: If I can get it off the top of my tongue.

Interviewer: Okay, and how do you decide how well you’ve done on a test?

Student 5: Like you mean the score or?

Interviewer: What tells you, “Oh, I did well” or “I didn’t do well”?

Student 5: If I did do well, I should use that study strategy I did or if I don’t I need help on the (inaudible)

Interviewer: Okay. Why do you think you got the grade you got on your last test?

Student 5: The study thing wasn’t good; I just didn’t study long enough.

Interviewer: Okay, what do you mean “The study thing wasn’t good”?

Student 5: The study strategies I used.

Interviewer: What were the study strategies you used?

Student 5: I just kind of read over the study guide.

Interviewer: Instead of, what should you have done?

Student 5: I should have, like you said before, like I should have, um, like made sure I knew that I wasn’t doing it right and then just, like, keep going over and over until I know it.

Interviewer: Okay. And how did you feel about the score on your last test?
Student 5: I felt really bad.

Interviewer: What do you think you need to do to improve on this next test?

Student 5: Study longer and I need to do more (inaudible) on how I study.

Interviewer: Okay, any other comments you have about how you feel like you’ve changed since from the beginning until now?

Student 5: Kind of feel like I’m getting the same score over and over and I need to like get my score up.

Interviewer: What have you learned about test taking that you think might help that?

Student 5: I learned that um, um, um, it’s like you don’t know stuff you should make sure what’s on the test and then you can study that.

Interviewer: Okay, any other comments?

Student 5: No.

Interviewer: Okay, thank you Student 5.
STUDENT 5. Interview #2

Interviewer: How did you do on the last history test?

STUDENT 5: Really bad.

Interviewer: How would you describe how successful your studying was for that test?

STUDENT 5: I realized how bad it was. I had bad strategies to study to get that score.

Interviewer: The score that made you think that?

STUDENT 5: Yeah.

Interviewer: Was there anything else that makes you think that your studying was not so successful?

STUDENT 5: Maybe I didn’t study enough.

Interviewer: The time?

STUDENT 5: Yeah.

Interviewer: What kind of goals have you made for studying for this China test?

STUDENT 5: I made way better goals and choices for how to study.

Interviewer: What kind of goals do you have? Remember last week when we did goals?

STUDENT 5: Trying to get a better score, like and A- or a B.

Interviewer: Are there other goals you had along the way to get you there?

STUDENT 5: I think it was kind of study longer. I always get distracted and trying to find somewhere to study where it is really quiet.

Interviewer: How did you decide which strategies to use today when you were studying?

STUDENT 5: I never went off the study guide, I looked at it and it gave me a good idea of what to study.

Interviewer: How did you decide that? What made you realize that that was the way you should go?
STUDENT 5: I was working on the study guide more for this test and it gave me the idea to study off it.

Interviewer: How confident are you that you can get an A or a B on the test like you want?

STUDENT 5: Pretty confident.

Interviewer: How interested are you as you are studying for this test?

STUDENT 5: I am actually really interested. I am not usually interested in studying for that long because I didn't know how to study and what to study.

Interviewer: So you feel more interested because . . .

STUDENT 5: Because I know exactly what to study.

Interviewer: So you know what. So knowing the topics makes you more interested?

STUDENT 5: Yeah.

Interviewer: And why is that?

STUDENT 5: Um. Last time I didn't really know what the topics were and I didn't get interested. So know that I know the topics of things, it gets me more interested.

Interviewer: How do you decide how long to study? Like now you studied for about 15 minutes. How did you decide 15, maybe 20 minutes. How did you decide how long you should go?

STUDENT 5: I think I see if I really know things well enough and maybe I will take a break from studying and if I am doing bad while testing myself I will keep on going until I know it.

Interviewer: So you are taking a break now and you will stop because you feel like you know that chunk?

STUDENT 5: Yeah.

Interviewer: How do you decide when and where you will study?

STUDENT 5: Last time I studied, I studied in the kitchen.

Interviewer: How did that work?
STUDENT 5: It didn't work so well, my sister was running around.

Interviewer: So what do you think you're going to do this time?

STUDENT 5: Probably go in my room and shut the door.

Interviewer: Will you have music on or have it quiet?

STUDENT 5: I usually have music on and if it's distracting I'll shut it off.

Interviewer: What kind of music are you playing?

STUDENT 5: Songs I like or just music that is slow.

Interviewer: Which strategies are you feeling work best for tests in this class now?

STUDENT 5: Since I know what is on the test, I will just study those, like the vocabulary.

Interviewer: So you'll just focus on what's on the study guide?

STUDENT 5: Yeah and the definitions.

Interviewer: How about other techniques like over here you had the flashcards, notes, etc.

STUDENT 5: I would mostly do the flashcards and read the notes. Like I said on there.

Interviewer: Have you made flashcards or is that something you're going to do later?

STUDENT 5: I was going to do it later.

Interviewer: How do you decide which ones to do flashcards for? Are you going to do them for all of them or some?

STUDENT 5: I was going to do them mostly for this kind of study (vocabulary words) and the definitions on the back.

Interviewer: Just one word on a card?

STUDENT 5: Yeah.

Interviewer: What are you doing to keep yourself motivated to study?
STUDENT 5: When I have the music on, it keeps me going with the studying. I usually like it really happy that I'm knowing stuff.

Interviewer: So when you know stuff it keeps you motivated?

STUDENT 5: Yeah.

Interviewer: Is there anything else that you're doing?

STUDENT 5: Not really.

Interviewer: What strategies are you using when you're not understanding or you're not remembering?

STUDENT 5: I would just look back at it over and over and over.

Interviewer: Yeah I saw you doing that today.

STUDENT 5: And then I would just cover it up and study again.

Interviewer: How are you keeping track of what you need to study?

STUDENT 5: Like I do. I check it off the ones that I don't know or do know, yeah. Then I'll go back to it.

Interviewer: How will you know when you've studied enough for a test? How are you going to know when you're done?

STUDENT 5: This (study reflection sheet) really helps me so I can circle the ones I don't know and the crossing off the ones I do know. Then I will go back and do the final studying.

Interviewer: How do you decide how well you've done on a test?

STUDENT 5: Like when you get the test back or before you do the test.

Interviewer: What do you think about?

STUDENT 5: When I get the test back and look at the score. I see the score and I see if it's good or bad and then I'll myself it the study strategies were good or bad. If the score. . .

Interviewer: What are the study strategies? Before you said time was a study strategy. What else is a study strategy that you would think was good or bad?

STUDENT 5: The bad one was last time, which was reading the highlighted words.
Interviewer: And a good one might be. . .

STUDENT 5: Definitions.

Interviewer: Studying definitions.

STUDENT 5: And looking it up in the book to make sure it's the right one.

Interviewer: Double checking your answers.

STUDENT 5: Okay.

Interviewer: What do you think the reason is you got the score you got on your last test?

STUDENT 5: Probably the study strategies and how much time I studied.

Interviewer: Not enough time.

STUDENT 5: No I didn't study enough.

Interviewer: How did you feel about the score you earned last time?

STUDENT 5: I felt really bad.

Interviewer: What do you think you need to do to do better on your next test?

STUDENT 5: I need to use different strategies. I think I'm doing well. I think I'm going to get a good score.

Interviewer: Is there anything else you want to talk about?

STUDENT 5: Nope.

Interviewer: Okay. Here we'll stop.