Bridging the Gap: The Digital Divide Among Higher Education Instructors

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Bridging the Gap: 
The Digital Divide Among Higher Education Instructors

A Field Project Proposal
TESOL Program
International and Multicultural Education Department

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts in Teaching English To Speakers of Other Languages

By
Allan Siochi
May 2021
Bridging the Gap: 
The Digital Divide Among Higher Education Instructors

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MASTER OF ARTS

in

TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES

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UNIVERSITY OF SAN FRANCISCO

Under the guidance and approval of the committee, and approval by all the members, this field project has been accepted in partial fulfillment of the requirements for the degree.

Approved:

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Instructor/Chairperson

May 12, 2021
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>iv</td>
</tr>
<tr>
<td><strong>CHAPTER I</strong></td>
<td></td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>1</td>
</tr>
<tr>
<td>Purpose of the Project</td>
<td>4</td>
</tr>
<tr>
<td>Theoretical Framework</td>
<td>6</td>
</tr>
<tr>
<td>Significance of the Project</td>
<td>7</td>
</tr>
<tr>
<td>Limitations</td>
<td>10</td>
</tr>
<tr>
<td>Definition of Key Terms</td>
<td>12</td>
</tr>
<tr>
<td><strong>CHAPTER II</strong></td>
<td></td>
</tr>
<tr>
<td>REVIEW OF THE LITERATURE</td>
<td>14</td>
</tr>
<tr>
<td>Introduction</td>
<td>14</td>
</tr>
<tr>
<td>Higher Education Instructors’ Attitudes and Beliefs Towards Technology</td>
<td>15</td>
</tr>
<tr>
<td>Institutions’ Technological Approach for Higher Education Instructors</td>
<td>20</td>
</tr>
<tr>
<td>Higher Education Instructors’ Use of Multimedia and Gamification</td>
<td>24</td>
</tr>
<tr>
<td>Summary</td>
<td>31</td>
</tr>
<tr>
<td><strong>CHAPTER III</strong></td>
<td></td>
</tr>
<tr>
<td>THE PROJECT AND ITS DEVELOPMENT</td>
<td>35</td>
</tr>
<tr>
<td>Description of the Project</td>
<td>35</td>
</tr>
<tr>
<td>Development of the Project</td>
<td>39</td>
</tr>
<tr>
<td>The Project</td>
<td>42</td>
</tr>
<tr>
<td><strong>CHAPTER IV</strong></td>
<td></td>
</tr>
<tr>
<td>CONCLUSIONS, AND RECOMMENDATIONS</td>
<td>43</td>
</tr>
<tr>
<td>Conclusion</td>
<td>43</td>
</tr>
<tr>
<td>Recommendations</td>
<td>45</td>
</tr>
<tr>
<td><strong>REFERENCES</strong></td>
<td>48</td>
</tr>
<tr>
<td><strong>APPENDIX</strong></td>
<td></td>
</tr>
<tr>
<td>ALLiN-Tech</td>
<td>52</td>
</tr>
</tbody>
</table>
“It turns out I was just too close to the puzzle to see the picture that was forming”

(HIMYM, 2005).

For anyone that started from the lowest

I barely graduated high school. I started at the absolute lowest English and Math courses at community college. I failed multiple classes. I somehow found my spark mid-speech in my Speech class. I went on to become the first in my family to transfer and graduate from a four-year college. I got rejected multiple times for graduate school. Now I have my Master’s.

Not every moment in your life will instantaneously make sense, but these moments will someday lead you exactly where you’re supposed to be.

For anyone that struggled to put themselves first

There were times when I self-sabotaged. There were times when I settled for less. There were times when I lied about what I wanted. There were times when I put my goals on hold for others. There were times when I struggled to put myself first.


This one’s for you.
ABSTRACT

Technology is rapidly and invasively transforming classroom instruction and student expectations. The demand for technology places higher education instructors at a disadvantage due to a lack of technical resources. The attitudes and beliefs of higher education instructors must be considered to build alignment with technology. The approach of institutions must be addressed to ensure higher education instructors are equipped with adequate technical support.

The complexity of technology, such as multimedia and gamification, requires meticulous attention to acquiring the technical expertise needed in modern classrooms. As a result, failure to consider attitudes and beliefs, negligence from institutions, and lack of initiative to propose a plan to adapt to the complexity of technology contribute a prominent role in the gap of the digital divide.

Amid the COVID-19 pandemic, the abrupt transition from in-person classes to virtual learning revealed how a fraction of the higher education instructor population was unable to operate the functionalities of technology. Moreover, it exposed how a fraction was not equipped with technical training and development from institutions in an event such as a global pandemic. Under the guidance of the Technology Acceptance Model (TAM) and Technology Readiness framework (TR), the ALLiN-Tech blog was established. The ALLiN-Tech blog is engineered to provide higher education instructors a platform to share their background, post technical resources, and empower users within the community through blogging. It is intended to provide a foundation for higher education instructors to transfer the technical expertise needed into modern classrooms. As a result, the ALLiN-Tech blog aims to serve as a contribution for the higher education population to jumpstart their path with bridging the gap of the digital divide.
CHAPTER I
INTRODUCTION

Statement of the Problem

The rapid development of technology is widening the gap of the digital divide in classrooms (van Dijk, 2006). The digital divide is an ambiguous term that often refers to the concept of two divided groups with technical skills separated by a gap, which often gives the perception that it is not able to be bridged (van Dijk, 2006, p. 222). The digital divide is the result of when users, such as higher education instructors, are not equipped with adequate resources for technical support. Moreover, it impacts and reinforces the perception towards higher education instructors that it is not possible to bridge the gap of the digital divide. The negligence and lack of commitment to provide higher education instructors with technological support widens the gap of the digital divide.

The incorporation of technology in classrooms has been prevalent in recent years (Kivunja, 2015). The basic instructional technology includes common classroom equipment such as computers and tablets. It progressively gets complex with the use of other tools like smart boards and projectors. The complexity of technological equipment includes operating the system’s functionalities and supplementary applications (Craig & Amernic, 2006). Although higher education instructors may have access to such technology, some may feel that there is a lack of training and development to extensively operate the functionalities in their workflow and instruction. Technology has prominently been used to deliver class instruction in recent years and stapled itself to transform how we work. The lack of commitment to equip higher education instructors with resources to build their technical expertise is widening the gap in the digital divide.
Sanchez-Mena and Marti-Parreño (2017) argue that higher education instructors are responsible for the “teacher-learning process” and leading their students with new “pedagogical innovations” in classrooms (p. 436). Higher education instructors are failing to lead with pedagogical innovations that are imperative in classrooms due to their lack of resources from their institution. Due to their failure to equip faculty members with adequate training, higher education instructors are not transferring the necessary skills in classrooms. As a result, higher education instructors are unable to transfer pedagogical innovations that inevitably place students at a disadvantage with the quality of instruction.

Similar to the claims of Sanchez-Mena and Marti-Parreño (2017), Jesnek (2012) is also aligned with the transformation of modern classrooms and argues institutions play a prominent role in the transformation. It has been proposed that “basic” computer literacy is no longer basic and found a spike in student confidence when provided with a quality curriculum (Jesnek, 2012, p. 3). Therefore, the transformation can create expectations towards students from higher education instructors and institutions. Classrooms have drastically transformed through the years and re-envisioned how tasks should be completed. Similar to Jesnek (2012), Nworie and McGriff (2001) extensively argue “Some notable changes in higher education include: requirements for all students to own laptop computers; incentives for professors to integrate technology into their courses; wireless network campuses; and classrooms equipped for multimedia learning” (p. 226). The expectations to complete tasks and accessibility needs at institutions have rapidly developed. Institutions are not diligent with adapting to the complexity of technology and the needs of modern classrooms. As a result, the lack of initiative from institutions continues to play a prominent role in widening the gap of the digital divide.
The quality of instruction begins with higher education instructors, which inevitably affects the quality of learning for students. Keung (2012) discovered that requirements in the classroom have changed. It has been proposed that requirements have developed to become more of a “strategy” to enhance the overall quality in the classroom (Keung, 2012, p. 308). Institutions fail to establish a commitment to implementing training and development to execute this strategy efficiently. The demand to have higher education instructors deliver instruction in modern classrooms is not supported to achieve the new strategy. Moreover, institutions are failing their students due to their lack of commitment to equip higher education instructors with resources to deliver quality instruction. The new strategy leaves higher education instructors with ambiguity and further widens the gap of the digital divide.

The digital divide holds a level of complexity that is yet to be fully addressed. van Dijk (2006) exemplify three types of skills; operational skills that include the application of information skills, the strategic skills “the capacity to use computer and network sources as means for particular goals in society”, and the third one is the user access which is defined as “the final stage and ultimate goal of the process of technological appropriation in the shape of particular applications” (p. 224). Most higher education instructors are not skilled to operate common technology in classrooms. As a Technician specializing in mobile devices and tablets, I have encountered a spike in engagement with educators during the COVID-19 pandemic due to virtual learning. Furthermore, the interactions are primarily educational opportunities that involve functionality questions regarding their technological devices.

Amid a pandemic, technology is prevalent more than ever which reveals higher education instructors are unable to operate the hardware and software of technology (Ali, 2020). This demonstrates that institutions are not properly equipping their faculty with adequate training and
development for preparedness in an event such as a global pandemic. Moreover, the need for training and development is transparent in the unprecedented time of COVID-19 is a competency that institutions have yet to cultivate (Ali, 2020, p. 18).

The deficiency in technical expertise among higher education instructors is negatively impacting the consistency and quality of learning for students. As a result, the gap of the digital divide partially stems from institutions due to their lack of accountability to provide adequate support for higher education instructors.

**Purpose of the Project**

Due to the need for technical resources, this field project incorporates a website that was specifically engineered to support higher education instructors. The website can serve as a blog for users to share their background and technical resources to support other users. The objective is to provide higher education instructors a platform to build and transfer their technical literacy skills in modern classrooms. Moreover, the blog is intended to serve as a platform for users in reference to the complexity of technology.

While some members of the population can operate the functionalities of technology, the website addresses those who are yet to develop basic technical literacy skills. The blog incorporates areas of interest to accommodate different levels of proficiency for users to select the appropriate area(s) for improvement.

Through blogging, the website is crafted for users to assess their strengths and areas of improvement to cohesively build their technical literacy skills. This serves as an attempt to utilize the information from the informal assessment to provide users with the appropriate
recommendations in the blog. This attempt will ideally jumpstart the process of higher education instructors to transfer technological skills in classrooms.

The focus is primarily on members of the higher education instructor population that lack the functional skills to incorporate technology in classrooms. However, there are various outlets to accommodate users that are simply seeking to refine their skills. Nonetheless, the website serves as an extension of support for users despite the level of proficiency in technology.

The website was created as a contribution in the field to establish an intuitive experience for users to immerse themselves. It is intended to further be utilized as a platform for higher education instructors to network with users to feel empowered in their field. Through blogging, higher education instructors should be able to apply acquired technical literacy and transfer the skills acquired into their classrooms.

To strive for accuracy, the website incorporates a message box on the homepage to assess the user’s digital literacy skills. This approach aligns with Davis’s (1985) Technology Acceptance Model (TAM) with the need to assess and understand how technology can serve in a meaningful way. Similar to the Technology Acceptance Model (TAM), the message box additionally draws inspiration from Andaleeb’s (2010) articulation of the Technology Readiness framework (TR) to identify technological readiness.

The user is able to select the appropriate area to commence their learning for hardware, software, gamification, multimedia, and vocabulary. The website encapsulates the complexity of technology and will ideally serve as a tool to demonstrate that the gap of the digital divide can be bridged through diligent steps.
Theoretical Framework

The following information systems theory, Technology Acceptance Model (TAM), was incorporated in the development of this field project. TAM, developed by Fred Davis (1985), essentially shows factors that can lead individuals to integrate technology in their workflow. Masrom (2007) describes the theoretical framework as:

In TAM, perceived usefulness refers to the degree to which the user believes that using the technology will improve his or her work performance, while perceived ease of use refers to how effortless he or she perceives using the technology will be. Both are considered distinct factors influencing the user’s attitude towards using the technology will be (p. 3).

The Technology Acceptance Model can be utilized to guide higher education instructors to determine how technology can be incorporated into their instructional method. The factor of perceived usefulness provides the opportunity to discover how technology can enhance their existing method. Moreover, the factor of ease of use is geared towards applying their technological literacy skills into use.

The model was relevant to guide the process of designing the website. The Technology Acceptance Model (TAM) provided insight to efficiently construct the website and ensure validity with content material. The website was meticulously crafted to acknowledge the acceptance needs of technology (Davis, 2003). TAM shares the same approach as the website with how imperative it is to assess higher education instructors to discover needs beforehand. Moreover, the assessment within the website was implemented before training to ensure readiness and accuracy in the placement level of their curriculum. The approach of persistently “identifying constructs” among what is currently perceived as an additional step to ensure that
content will be revised as needed (Davis, 2003). TAM was utilized as the primary guide to fulfill the needs of most higher education instructors which aimed to bridge the gap of the digital divide.

**Significance of the Project**

Our current reality amid the COVID-19 pandemic redefines what classrooms are. Educators and students abruptly transitioned to an online format that meets synchronously. Ali (2020) discovered that institutions did not implement preparation and planning measures (p. 18). This resulted in some higher education instructors struggling to virtually deliver lectures that inevitably created tension to abruptly acquire skills (Ali, 2020, p. 18). Furthermore, students are affected by the need to adjust to the ambiguity of digital learning and virtual instruction in the setting of their homes. The challenge that occurred during the COVID-19 pandemic is the prime inspiration for the creation of the project.

Shenoy et al. (2020) is aligned with the claims of Ali (2020) and echo that technology is considered a revolution. Research articulates that the lockdown of the COVID-19 pandemic essentially demanded faculty to adapt ever so willingly (Shenoy et al., 2020, p. 700) Shenoy et al. (2020) advocate the demand of technology must be embraced in the times of the COVID-19 pandemic. Moreover, this will enable most higher education instructors to adapt to technology accordingly. Similar to the claims of Shenoy et al. (2020), Adnan and Kanwar (2020) are also aligned with the new reality regarding how classes are held amid the COVID-19 pandemic. Due to the uncertainty of the COVID-19 pandemic, educational institutions are gradually adapting to resources about technology and adapting to the online environment (Adnan & Kanwar, 2020, p. 45).
The claims of Ali (2020), Shenoy et al. (2020), along with Adnan and Kanwar (2020) intertwine similar motivation of the website engineered for higher education instructors. The website is embodied to provide a technical foundation for higher education instructors struggling to adapt to technology and the mode of instruction in an online format. The website aims to encourage higher education instructors to build their technical expertise to adapt to technology and online classes. Moreover, it is intended for higher education instructors to utilize common technological equipment such as computers and tablets, operating the software and program applications.

Technology is progressively redefining how higher education instructors deliver their lectures (Tarman, 2003). Although every individual is under different circumstances, the website is established to provide a foundation for higher education instructors to be prepared in an event such as the COVID-19 pandemic. It is intended to implement a sense of preparedness for higher education instructors to minimize their chance of being left further behind in the digital divide.

Moreover, the website will ideally play a pivotal role to guide higher education instructors to remain on pace with the rapid development of technology. It is inevitable for technology to play an essential role in our daily routine. The importance of the website will embrace the change and ambiguity of what is yet to come. Furthermore, it will staple itself as a resource for higher education instructors to refer to if their institutions fail to provide adequate resources.

The website is designed to make an impact beyond the classroom and intended audience. The access that higher education instructors have on the platform will ideally re-assess their instructional method to meet expectations and adapt to ambiguity. Once equipped with
technological resources from the website, most higher education instructors should be able to deliver their instruction efficiently for their students.

Higher education instructors often have difficulty operating technological equipment, which results in interrupting the consistency of student learning in the classroom (Yau & Cheng, 2012). The ability for higher education instructors to demonstrate technical expertise in lectures impacts and assures students they are provided with quality learning. As a result, this will impact and enhance the quality of learning from students (Yau & Cheng, 2012). The website will serve as an attempt to equip higher education instructors with resources to reduce the chance of interrupting the quality of instruction for students.

Karalis and Raikou (2020) align with the concern of Yau and Cheng (2012). Karalis (2020) expressed concern regarding the impact on students with how higher education instructors deliver their instruction amid the COVID-19 pandemic. Institutions and higher education instructors should investigate how students are impacted and be best supported in a time of uncertainty (Karalis & Raikou, 2020, p. 2). Moreover, higher education instructors hold a sense of accountability to deliver quality instruction for students. Händel et al. (2020) also align with the need to have students in consideration. For learning to be deemed successful, students must engage and build a foundational relationship with their instructor in an online format (Händel et al., 2020, p. 2). Karalis and Raikou (2020) along with Händel et al. (2020) share a mutual understanding of the overall picture. The ability to recognize the impact on students based on a higher education instructor’s ability to deliver instruction is crucial.

Similar to the motives of Karalis and Raikou (2020) and Händel et al. (2020), the website draws similar inspiration by considering the impact on students. In an educational setting, the goal should be able to deliver quality instruction for students. To accommodate this,
the website aims to equip higher education instructors with foundational technical expertise to deliver efficient online instruction for students.

Once higher education instructors acquire the technical expertise, this would ideally enhance the relationship between students in an online format. As a result, the website will not only aim to impact higher education instructors but the overall quality of learning for students and the relationship between students and instructors.

**Limitations**

In regards to the limitations of the project, there are various to consider to adapt to each higher education instructor accordingly. There may be higher education instructors that have little-to-no access to technology. In this case, those interested in the website may have a minimal chance of utilizing this resource. For those who do have access to the technology, it can potentially be limiting if higher education instructors have not acquired the skills to operate the hardware and navigate through the software of their device (Trynus et al., 2019).

Similar to the claims of Trynus et al. (2019), Moralista and Oducado (2020) acknowledge the limitations for higher education instructors to operate basic functionalities of common technological equipment to access the website. Furthermore, there may potentially be higher education instructors that encounter a barrier such as not having access to a stable Wi-Fi connection (Moralista & Oducado, 2020, p. 4739). Thus, prevented from utilizing the website due to most public areas closed with the COVID-19 pandemic.

Upon initial launch of the website, an additional limitation is the lack of a robust needs analysis. Feedback will be received from users, which will then be incorporated to enhance the validity of the content. The feedback will continuously be integrated and developed into the website to ensure accuracy.
If proven successful, the website could perhaps be extensively developed and re-imagined into a mobile application for further access. The success rate will ultimately determine the longevity of the domain for the website itself.
**Definition of Terms**

**Application:** a “software program” enables users to operate on their technological devices (TechTerm, 2021).

**Bluetooth:** a “short-range wireless communication” to serve as a replacement of wired electronic accessories such as headphones to provide flexibility (ScientificAmerican, 2021).

**Computer:** a piece of technological equipment that “performs processes, calculations, and operations” to perform desired actions (Technopedia, 2021).

**Digital Divide:** a phenomenon that demonstrates users “do not have access to computers or the internet” and lack the technical expertise to operate the functionalities of technology (Stanford University, 2021).

**Domain:** the “address for a computer network” to access websites on web browsers (MediaTemple, 2021).

**Function Keys:** a set of keys located on the top of a keyboard that indicates “shortcuts, performing certain functions” to control the dedicated technology (ComputerHope, 2021).

**Gamification:** a phenomenon with “the process of adding games” to spike engagement in learning (Merriam-Webster, 2021).

**Hardware:** the “physical parts of a computer and related devices” which includes keyboards, battery, and hard drive (TechTerm, 2021).

**Projector:** an “optical device capable of “projecting” or extending its light outward or beyond” to enlarge the content of a technological device (Projectorninja, 2021).

**Settings:** a dedicated space that “adjusts to its users’ preference” to customize and format technological equipment (ComputerHope, 2021).
**Software:** the brain of technological equipment that provides “instructions that control what a computer does” to complete desired tasks (GCFGlobal, 2021).

**Tablet:** a “portable computer that uses touchscreen as its primary input device” to provide an intuitive experience for users (TechTerms, 2021).

**Technology:** used for “the study and knowledge of the practical, especially industrial use of scientific discoveries” to re-envision that status quo (Cambridge Dictionary, 2021).

**Trackpad:** a “device that translates the position and motion (left, right, up, and down) of your fingers to move the cursor on your screen” to command desired controls within the software of a technological device (Insider, 2021).

**Website:** a destination that includes “a collection of related material that contains text, images, and may also include video, audio or other media” to provide users desired data (MediaTemple, 2021).

**Web Browser:** a “software program to present and explore content” that is launched to provide a platform to access data (ComputerHope, 2021).

**Wi-Fi:** a “wireless network technology” that enables technological equipment to be granted access to websites (TechTerms, 2021).
CHAPTER II
REVIEW OF THE LITERATURE

Introduction

Technology is redefining how instructional methods are delivered in classrooms. With the emergence of technology, classrooms have been offered in various modes such as synchronous and asynchronous. Amid the COVID-19 pandemic, technology has further cemented itself to redefine how higher education instructors are expected to deliver their instruction (Gonzalez, 2020). The abrupt transition to primarily online learning demonstrates the need for technical training and development for some higher education instructors. Moreover, it inevitably impacts the quality of learning for students due to some higher education instructors’ inability to operate technology and deliver lectures online efficiently (Gonzalez, 2020). COVID-19 essentially reveals institutions failed to equip some higher education instructors with training on technology in preparation for an event such as a global pandemic. Moreover, the lack of preparedness from institutions to anticipate such events contributes a role to the gap of the digital divide.

The digital divide is a prevalent issue that has caused a concern worth examining (Dornisch, 2013). The complexity of technology could present itself as inaccessible and intimidating. However, the barriers a higher education instructor may encounter could be dismantled if equipped with the proper pedagogy, development, and support. Institutions are accountable for ensuring higher education instructors are supported with operating technology to deliver lectures and complete tasks. As a result, this could bridge the gap of the digital divide, and failure to do so would make a pervasive issue even more widespread.
The literature review is intended to emphasize the lack of support towards higher education instructors and identify areas of improvement to provide a technical foundation to operate technology. Within this literature review, three themes are accompanied by categories. The first theme, Attitudes & Beliefs of Higher Education Instructors, incorporates the Technology Readiness (TR) framework and Technology Acceptance Model (TAM) to identify attitudes and beliefs. The second theme, Institutions’ Technological Approach for Higher Education Instructors, emphasizes the lack of support for teachers. The third theme, Higher Education Instructors’ Use of Multimedia and Gamification, articulates the complexity of technology and modern development of instruction. These themes showcase the context of higher education instructors and embody necessary action to bridge the gap of the digital divide.

**Higher Education Instructors’ Attitudes and Beliefs Towards Technology**

With the constant innovation of technology, it may present difficulties for higher education instructors to align their attitudes and beliefs with technological devices. Failure to align their attitudes and beliefs with technology plays a critical role that could widen the gap of the digital divide. Research demonstrates that the digital divide in higher education is a phenomenon that could be bridged to narrow the gap of the digital divide (Alfy et al., 2016). Moreover, it is critical to address a higher education instructor’s response to technology to identify areas that could be supported. To bridge the gap of the digital divide, we must begin by acknowledging the attitudes and beliefs of higher education instructors for technology to have a meaningful impact.

**Characteristics of Higher Education Instructors**

Research demonstrates that integration of technology in instruction can stem from aligned beliefs (Ottenbreit-Leftwich and Glazewski, 2010). To integrate technology in the
classroom, higher education instructors’ attitudes and beliefs towards technology should be acknowledged. Ottenbreit-Leftwich and Glazewski (2010) argue that technological goals must be addressed before enforcing technology in classrooms (p. 1323). Upon understanding the goals of a higher education instructor, this probability of transferring their technical expertise into classrooms could surge. Ottenbreit-Leftwich and Glazewski (2010) implicate that beliefs towards technology are imperative for higher education instructors to adopt technology in their instruction accordingly.

In contrast, Kopcha (2012) provides a different set of lenses that brings an extensive perspective of how attitudes and beliefs could be addressed. Individually addressing the characteristics and needs of a higher education instructor could perhaps be more effective, rather than generalizing a population (Kopcha, 2012). Kopcha (2012) acknowledges what Ottenbreit-Leftwich and Glazewski (2010) fell short of by advocating to adapt to technology in instruction to address the issue. The ability to align a personalized set of attitudes and beliefs with technology is the foundation to dismantle barriers higher education instructors may encounter. As a result, this could substantially bridge the gap further in the digital divide.

**Utilizing Diagnostic Assessment to Understand Motivation and Values**

Although attitudes and beliefs are integral components, the motivation of a higher education instructor is on par with the level of needs (Vovk, 2019). Similar to the claims of Ottenbreit-Leftwich (2010) and Kopcha (2012), Vovk (2019) embodies an approach beyond addressing attitudes and beliefs. A diagnostic assessment of educators can reveal the motive of higher education instructors to either integrate technology in their classroom or not (Vovk, 2019, p. 34). Moreover, Vovk (2019) utilizes the “Squares of Values” methodology developed by Murzina (2014) as guidance with the diagnostic assessment. The “Squares of Values” can be
utilized to reveal the values and personality of an individual (Vovk, 2019, p. 34). Vovk (2019) advocates for the use of diagnostic assessment to address the value and personality of an individual. Moreover, the results of a diagnostic assessment can be utilized to precisely support higher education instructors with their technological needs and could slow the widening gap of the digital divide.

Gikandi (2011) is aligned with Vovk’s (2019) approach and argues that an assessment is a fundamental core to demonstrate known abilities (Gikandi, 2011, p. 2334). Moreover, it encompasses the unique characteristics and potential motive of a higher education instructor (Gikandi, 2011, p. 2334). Similarly, Tatli (2009) aligns with Gikandi (2019) and Vovk (2019) in regards to the importance of characteristics and background of a higher education instructor. The two components can be utilized to develop an instructional method personalized for the higher education instructor upon assessment (pp.1-2). As a result, addressing the motive in addition to attitudes and beliefs are essential to equipping higher education instructors with resources accordingly.

**Utilizing Technology Readiness (TR) to Identify Attitudes and Beliefs**

Research shows that aligned beliefs will not be sufficient to adapt to the ambiguity of technology (Alfy et al., 2016). Similar to the claims of Ottenbreit-Leftwich and Glazewski (2010) and Kopcha (2012), Alfy et al. (2016) propose that attitudes and beliefs of higher education instructors have been linked to efficiently adopting the technology. The ability to address attitudes and beliefs is on the right path. However, further steps would be needed to thoroughly assess higher education instructors. Incorporation of prior knowledge and background of higher education instructors will identify what is necessary to adopt technology accordingly (Alfy et al., 2016, p. 2622). Alfy et al. (2016) essentially utilize the Technology
Readiness (TR) framework as guidance to reveal how the attitudes and beliefs of a higher education instructor could be accommodated.

Figure 1

*Technology Readiness*

Note.

Technology Readiness (Figure 1) developed by Siochi (2021) draws influence and inspiration from the Technology Acceptance Model (TAM) developed by Davis (1985) and the articulation of Technology Readiness (TR) by Andaleeb (2010).
The infographic (Figure 1) demonstrates how elements of TR can lead to a similar concept of TAM. Upon assessing the strengths and weaknesses of a higher education instructor, the information could be utilized to support higher education instructors accordingly. Moreover, identifying strengths and areas of improvement ensures accuracy with how institutions can support higher education instructors. Upon the guidance of TR to identify strengths and weaknesses, the information could be utilized through alignment with TAM’s perceived usefulness and perceived ease of use. The transition from TR to TAM during assessment would ideally have technology present itself with meaning and motivation for higher education instructors to use. As a result, utilizing Technology Readiness (TR) under the guidance of the Technology Acceptance Model (TAM) could directly link to a surge of technological usage through efficiency in the assessment.

Technology Readiness (TR) is commonly used in an attempt to identify the technological strengths and weaknesses of an individual (Andaleeb, 2010). Moreover, TR has found success among the dynamic of TR and attitudes & beliefs. Fisk (2011) and Andaleeb (2010) are ultimately aligned with Alfy et al.'s (2016) stance of the essence of TR. Extensive knowledge of the background to reveal the attitudes and beliefs of higher education instructors was proven to find optimism and innovativeness towards technology (Andaleeb, 2010, p. 431). As a result, assessing the background of a higher education instructor to determine readiness with technological equipment can staple the groundwork to bridge the gap of the digital divide.

The concept of acquiring technical expertise is essentially a developmental process. The attitudes and beliefs of a higher education instructor are vital to identify strengths and weaknesses. Furthermore, the importance of a diagnostic assessment could be utilized as an ambitious step further to adequately support higher education instructors. With the guidance of
the Technology Readiness (TR) framework, it has been proven to be successful with the study conducted in the Masie Center (Andaleeb, 2010). The diagnostic assessment could play a pivotal role to support higher education instructors effectively in a long-term outcome. Before equipping higher education instructors with technological access, a thorough diagnostic assessment should be implemented to understand how they can be efficiently supported. As a result, an assessment to reveal strengths and weaknesses could be an imperative step in bridging the gap of the digital divide.

**Institutions’ Technological Approach for Higher Education Instructors**

Upon distinguishing attitudes and beliefs, institutions should respond accordingly to accommodate the needs of higher education instructors. The gap of the digital divide can stem from an institutions’ approach to technology (Devlin & McKay, 2016, p. 92). Moreover, institutions seem to fail to meet the needs and demands to adequately support higher education instructors. Institutions are accountable for equipping higher education instructors with resources to build their technical expertise in modern classrooms. The gap of the digital divide stems primarily from institutions due to enforcing unattainable expectations without ample training and development.

**The Need for Training and Development**

The rise of technology in classrooms has resulted in higher education instructors being placed at a notable disadvantage due to a lack of support from their institution (Devlin & McKay, 2016). While most institutions are equipped with common technological equipment, this does not necessarily correlate to a high level of technical expertise (Devlin & McKay, 2016). Similar to the claims of Devlin and McKay (2016), Aldahdouh et al., (2020) aligns with their observation of how access to technology does not correlate to technical expertise. Moreover, access to
technology does not necessarily signify that all higher education instructors would know how to utilize the equipment to its advantage. As a result, training and development should be enforced for higher education instructors to reach their potential with the recent demands of technology in classrooms.

Institutions equipped with technology do not end the need for ongoing training and development (Aldahdouh, 2020, p. 1). It is imperative to address the issue by equipping higher education instructors with extensive training and development to perform essential work duties that require the use of technology. Huiyu et al. (2005) extensively provide further insight among the research of Aldahdouh et al. (2020) and Devlin and McKay (2016). Although access to common technological equipment presents itself to a notable start, it will not suffice and require further steps to ensure higher education instructors can transfer the skills in classrooms (Huiyu et al., 2005, p. 70). Huiyu et al. (2005) propose an ambitious measure by advocating a set of standards in training to ensure the quality of educational technological usage (p. 76).

The proposal of Huiyu et al. (2005) ties in the loose ends of Devlin and McKay (2016) and Aldadouh et al., (2020) and ultimately refines an initiative recommendation. Moreover, institutions enforcing training and development among a set of standards ensure alignment and accuracy (Huiyu et al., 2005). Technology has abruptly become invasive in education at the peak of the COVID-19 pandemic and an established set of standards for training and development could be an ambitious attempt to narrow the gap of the digital divide (Ali, 2020).

Needs Analysis of Training and Development

Similar to the claims of Huiyu et al. (2005), Devlin and McKay (2016), and Aldahdouh et al., (2020), Cruthaka and Pinngern (2016) articulate a needs analysis to ensure valid training and development for higher education instructors. Training and development have been
acknowledged to be a sequential step to ensure accuracy in the developmental phase (Cruthaka and Pinngern, 2016). Training and development should regularly be revised to accommodate the needs of the target groups and foster understanding (Cruthaka & Pinngern, 2016, p. 64).

A needs analysis of the population is imperative before enforcing training programs. It would spike the chances of a higher education instructor to transfer technical expertise acquired from training and development into classrooms efficiently. Although Huiyu et al. (2005), Devlin and McKay (2016), and Aldahdouh et al., (2020) are aligned in the same path, Cruthaka and Pinngern (2016) executed what they failed to acknowledge which is to demonstrate the needs of the target group to ensure success in training and development. Cruthaka and Pinngern (2016) acknowledge the unique characteristics of a higher education instructor and argue that a general curriculum will not suffice for all. Moreover, it assures higher education instructors that their needs are valued and catered personally for their development. It is imperative to acknowledge and address what is required by the population before crafting a specific program. As a result, this could spike the alignment between the target group and technology to narrow the gap in the digital divide.

**Accountability of Institutions**

Institutions must be held accountable for the performance of their higher education instructors that require technology (Keengwe, 2019). It is critical to address that higher education instructors are failed by institutions due to a lack of commitment for support. Keengwe (2019) and Fathema et al. (2015) are aligned with the notion that institutions are not addressing a pervasive issue in modern classrooms. In modern classrooms, institutions are accountable for how they can provide higher education instructors with adequate resources to deliver updated instructional methods (Fathema et al., 2015).
Similar to the claims of Keengwe (2019) and Fathema et al. (2015), Ray (2009) provides transparency with her research. Institutions are raising expectations among higher education instructors and expect to perform efficiently with non-existent training (Ray, 2009, p. 265). This engulfs higher education instructors with unrealistic expectations from their institutions. Moreover, if higher education instructors are ambushed by high standards, they should be educated to meet protocols.

Bozalek et al. (2013) extends the work of Ray (2009) and essentially predicts the potential outcome of the proposal. Institutions’ reluctance to equip higher education instructors influenced their willingness to adapt to emerging technology in classrooms (Bozalek et al., 2013, p. 434). Moreover, the lack of accountability from institutions prevents higher education instructors from adopting technology and widens the gap of the digital divide due to institutions’ reluctance to provide adequate training and development.

The institutional approach of equipping higher education instructors is pivotal to ensure efficiency in classrooms (Treviranus & Coombs, 2001). Amid the COVID-19 pandemic, training and development for higher education instructors are needed more than ever. Ray (2009) and Bozalek et al. (2013) transparently expose the negligence of institutions with their approach of equipping higher education instructors. Meanwhile, Keengwe (2019) and Fathema et al. (2015) align with how the negligence from institutions impacts the ability of higher education instructors to perform. Technology appears to rapidly re-envision what defines a classroom in the peak of COVID-19. Moreover, higher education instructors that are unable to demonstrate their technical expertise through virtual lectures essentially expose institutions with their lack of commitment to provide adequate training and development in technology. Upon distinguishing the motives of higher education instructors as argued by Devlin and McKay (2016), Aldahdouh
et al. (2020), and Huiyu et al. (2005), institutions should utilize the information to adequately support the faculty. As a result, institutions that are held accountable for their approach to provide training and development could substantially bridge the gap of the digital divide.

**Higher Education Instructors’ Use of Multimedia and Gamification**

Technology is a complex phenomenon that often requires knowledge of its functionalities to operate its full capacity. Upon distinguishing attitudes and beliefs along with holding institutions accountable, the complexity of technology can now be further addressed. Research demonstrates that multimedia and program applications that are often required to understand the capacity of technology can enhance the instructional method of higher education instructors (Deterding et al., 2011). Once acquired, higher education instructors that were once struggling to operate technology can transfer the skills in classrooms and make a lasting impact on students. As a result, higher education instructors that can operate technology at its full capacity could bridge the gap of the digital divide.

**The Rise of Multimedia and Gamification**

Research articulates that the transformation of instructional methods has peaked to a new set of standards and expectations (Bolkan, 2019). Applications - such as Microsoft PowerPoint - have played an essential role in redefining lectures in classrooms. The rise of technology in classrooms has enforced inevitable expectations to complete tasks (Bolkan, 2019). The expectations have caused a majority of higher education instructors to adapt to Microsoft PowerPoint to deliver lectures and highlight material for clarity and pacing (Bolkan, 2019, p. 61). Furthermore, programs such as Microsoft Powerpoint demonstrate the use of illustrations and videos to visually accompany to support content material. Bolkan (2019) exemplifies how
acquiring the skills to utilize Microsoft Powerpoint can be linked to eased and simplified instruction for higher education instructors.

Similar to Bolkan (2019), research demonstrates that gamification, the use of game design elements in non-game contexts, amplified multimedia in the classroom (Deterding et al., 2011). Zarzycka-Piskorz (2016) aligns with Deterding et al., (2011) and sheds light on how gaming applications, such as Kahoot!, have been linked to an increase in student engagement and ease of instruction. Kaufmann (2018) and Zarzycka-Piskorz (2016) are aligned with the potential of gamification to make an impact in classrooms.

Research demonstrates higher education instructors who implement multimedia in their instruction saw a spike in student performance (Kaufmann, 2018). The creativity and curiosity of the student survive in the elements of gaming that could lead to thriving in the grade book overall (Kaufmann, 2018, p. 131). Moreover, Kaufmann (2018) aligns with Zarzycka-Piskorz (2016) and Deterding et al., (2011) regarding how gamification is progressively being integrated with instruction and primarily pushes towards advantages of gamification such as student engagement. Ofosu-Ampong et al. (2019) statistically validate the claims of Kaufmann (2018), Zarzycka-Piskorz (2016), and Deterding et al (2011) with recent conclusions. A study was conducted at the University of Ghana to determine students’ acceptance of gamification and concluded with favorable reviews and 87.6% of students likely to utilize gamification in lectures efficiently (Ofosu-Ampong et al., 2019).

In contrast, Vinichenko and Ridho (2019) share similar claims but identify further research could be done. Vinichenko and Ridho (2019) can provide additional insight and articulate the potential to enhance lectures and spike student engagement. However, due to the recent rise of gamification, research suggests that gamification is fragmented and could be
further developed (Vinichenko & Ridho, 2019). Deterding et al, (2011) and Zarzycka-Piskorz (2016) examine gamification as a well-developed phenomenon, while Vinchenko and Ridho (2019) advocate for refining the concept of gamification. Although proven successful, Vinchenko and Ridho (2019) argue that gamification could be extensively developed due to its recent surge in mainstream popularity in classrooms. Moreover, gamification could play a pivotal role in lectures in years to come once refined and developed.

**Multimedia and Gamification Concerns for Higher Education Instructors**

Sanchez-Mena and Marti-Parreño (2017) articulate further research and identify a potential solution to address the concerns of Vinichenko and Ridho (2019). Although currently in development, the barrier to gamification could be resolved by endorsing a curriculum that includes gamification (Sanchez-Mena & Marti-Parreño, 2017, p. 441). Moreover, the training and development with a concentration on gamification can potentially be an ambitious attempt to adapt to the complexity of technology. The lack of coordination to implement gamification as a standard training protocol can result in a widened gap in the digital divide. Similarly, Kaufmann (2018) aligns with Sanchez-Mena and Marti-Parreño (2017) and advocates the potential of gamification to make an impact in classrooms. Moreover, Kaufmann (2018) embraces the phenomenon of gamification to be an essential role in instruction.

Wiggins (2016) aligns with the work of Sanchez-Mena and Marti-Parreño (2017) by proposing to incorporate relevant applications that will best meet the needs of the class. Wiggins (2016) simplifies the phenomenon of gamification as a glorified and modern twist of the traditional method class lecture. Higher education instructors should adapt to the phenomena of gamification that best accommodate the needs for themselves to make a lasting impact for students (Wiggins, 2016).
Wiggins (2016) and Sanchez-Mena and Marti Parreño (2017) diligently analyze the concept of gamification to ensure effectiveness in classrooms. Moreover, gamification could be mastered if incorporated in an updated training and development curriculum, which stems from the approach of institutions. As a result, higher education instructors that adapt to the continuously developed phenomena of gamification could serve as a preventative measure from being left further behind in the digital divide.

**Modern Expectations Towards Higher Education Instructors**

Amid the COVID-19 pandemic, it has reimagined the method of how instruction is delivered. Shenoy et al. (2020) argue the emergence of technology amid a global pandemic. The development of technology will inevitably cause faculty to adapt willingly and unwillingly (Shenoy et al., 2020, p. 700) Moreover, Shenoy et al. (2020) argue the need to adapt to the rapid changes of technology and expectations to deliver lectures for the sake of their students (Shenoy et al., 2020, p. 700). Similar to the claims of Shenoy et al. (2020), Ali et al. (2020) articulate the emergence of technology amid the COVID-19 pandemic enforced expectations towards faculty to deliver lectures remotely due to lockdown during the pandemic. However, the ambiguity and unprecedented times of the pandemic could be effectively be supported through institutions providing faculty support. As a result, institutions equipping higher education instructors with resources amid a global pandemic ensures staff readiness with technology (Ali et al., 2020).

Shenoy et al. (2020) and Ali et al. (2020) assure the claims and technological concerns of Nworie and McGriff (2001). Research shows that leadership in institutions plays a prominent role that affects the quality of engagement in classrooms (Nworie & McGriff, 2001). Nworie and McGriff (2001) advocate for multimedia as a method for higher education instructors to deliver lectures in classrooms. However, Nworie and McGriff (2001) identify potential barriers and
expectations enforced from institutions. Higher education is progressively re-envisioning how
tasks are completed in classrooms with the expectations to have access to common technological
Moreover, the expectation to have access to technological equipment still requires the technical
expertise to operate the complexity of technology (Nworie & McGriff, 2001). As a result, the
expectation contributes a role in the gap of the digital divide.

Tarman (2003) acknowledges the concerns of Nworie and McGriff (2001) with the
assumption that all higher education have access to technology and operate the functionalities
efficiently with the use of multimedia. Tarman (2003) advocates for institutions to equip
members with access to technology before enforcing expectations to meet requirements in
classrooms. Moreover, there are a set of skills needed to operate the functionalities of technology
and features of multimedia programs.

aligned with the rise of expectations to complete tasks in classrooms in modern classrooms. The
new norm to complete tasks and deliver lectures require the use and technical expertise of
technology regardless of technology is accessible (Buzzetto-Hollywood et al., 2018).

and Tarman (2003) and exemplifies an attempt to raise awareness of the issue prevalent in
institutions. The result of enforcing expectations to operate technology and multimedia with or
without support aggressively widens the gap of the digital divide (Buzzetto-Hollywood et al.,
2018, p. 78). Moreover, institutions should equip school grounds with access to common
technological equipment to meet the growing demands and expectations of modern classrooms.
As a result, this could effectively narrow the gap of the digital divide.
Similar to Nworie and McGriff (2001), Bates and Sangra (2011) are also aligned with the perception that the new reality of technology is enforcing higher expectations to perform job duties. Technology has invasively reimagined how to deliver lectures and meeting requirements in their job description (Bates & Sangra, 2011). The rise of technology has redefined the skills needed in classrooms to replace how higher education instructors once used to complete tasks that require how to identify and apply digital information (Bates & Sangra, 2011, p. 20).

Moreover, Nworie and McGriff (2001) along with Bates and Sangra (2011) ambitiously embrace the unknown of what is yet to come and encourage institutions to equip higher education instructors to adapt to the new norm.

**Student Impact of Multimedia and Gamification as an Instructional Method**

Although the phenomenon of gamification and the use of multimedia are rising, Kirkwood and Price (2013) extensively advocate for thorough analysis before incorporating it into lectures for students. It is imperative to assess the needs in regards to how technology can enhance and validate the instruction for students (Kirkwood & Price, 2013, p. 7). Moreover, Kirkwood and Price (2013) demonstrate and identify what Nworie and McGriff (2001), Bates and Sangra (2011), and Buzzetto-Hollywood et al., (2018) failed to articulate by ensuring if students will find the method of gamification and the use of multimedia to be valid. Moreover, Kirkwood and Price (2013) argue that assessment of students should be considered when incorporating gamification and multimedia to ensure efficiency in classrooms.

Similar to the claims of Kirkwood and Price (2013), Chung (2019) seeks to address how gamification may not be a valid method for the entire student population. With the interactivity of gamification, Chung (2019) advocates proposing additional options that could accommodate students that may have anxiety with socializing. Moreover, Chung (2019) proposes options for
students to choose to accommodate their needs. Kirkwood and Price (2013) and Chung (2019) both align with a student-focused approach. Moreover, the needs of students should be regularly monitored and considered when delivering instruction. As a result, this could enhance the overall quality of learning for students.

Kirwood and Price (2013) and Chung (2019) are also aligned with Craig and Amernic (2006) regarding an approach advocating for the needs and assessment of students to be examined before delivering lectures. Although the use of programs such as PowerPoint has been prominent, Craig and Amernic (2006) imply that PowerPoint may not necessarily be an adequate application that students prefer to learn by. Similarly, the needs of students must be assessed rather than assuming prominent application programs and gamification will be sufficient. Bolkan (2019) generalizes and assumes that PowerPoint will be effective for all, while Craig and Amernic (2006) suggest that the entire student and higher education instructor population may not necessarily be keen on the approach despite an outdated claim and popularity in modern classrooms.

Zarzycka-Piskorz (2016) refutes the claims of Craig and Amernic (2006) with statistics and the evolution of gamification 10 years later. Zarzycka-Piskorz (2016) observed a lecture at the University of Kraków that involved a group of students with gamification incorporated in instruction from their instructor. A survey was conducted and concluded with 80% of students praising gamification as a method of instruction, while 90% of students responded with attaining course material efficiently with gamification. Moreover, gamification and multimedia have been statistically proven to enhance the overall classroom experience for students (Zarzycka-Piskorz, 2016).
Ofosu-Ampong et al. (2019) support the claims of Zarzycka-Piskorz (2016) by assuring the concerns of Craig and Amernic (2006), Kirwood and Price (2013), and Chung (2019) regarding the potential and longevity of multimedia and gamification. Ofosu-Ampong et al. (2019) encapsulates the concerns and provides statistical evidence with a recent study conducted at the University of Ghana that involved 87.6% of students reporting gamification to be an effective teaching method. As a result, higher education instructors should adapt to the phenomenon of multimedia and gamification accordingly to meet the needs of students in an attempt to bridge the gap of the digital divide.

Summary

The literature review demonstrates that the digital divide can be bridged through determining attitudes and beliefs of higher education instructors, holding institutions accountable to equip higher education instructors with training and development, and operating program applications and gamification efficiently.

The first theme with a focus on attitudes and beliefs articulates the need to assess the background of a higher education instructor. A needs analysis of higher education instructors is imperative. Ottenbreit-Leftwich and Glazewski (2010), Kopcha (2012) ad Alfy et al. (2016) articulate the importance of understanding the attitudes and beliefs of a higher education instructor. Upon distinguishing, this will likely increase the chances of higher education instructors utilizing common technological equipment due to aligned attitudes and beliefs. Similarly, Vovk (2019) and Tatli (2009) exemplify the need of revealing the motive of a higher education instructor through an assessment. Ottenbreit-Leftwich and Glazewski (2010) and Vovk (2019) demonstrate the need to extensively understand the unique characteristics of a higher education instructor to efficiently provide support. Furthermore, Andaleeb (2010) is aligned with
Ottenbreit-Leftwich and Glazewski (2010) and Vovk (2019) and utilizes the Technology Readiness (TR) framework as guidance to encapsulate essential information of a higher education instructor. Technology Readiness (TR) primarily identifies the strengths and weaknesses of a user to validate the readiness of technology. As a result, the research of Ottenbreit-Leftwich and Glazewski (2010), Vovk (2019), Alfy et al. (2016), Tatli (2009), and Andaleeb (2010) articulate the importance of an assessment to reveal attitudes and beliefs to efficiently support higher education instructors.

The second theme examines institutions’ approach to equipping higher education instructors with training and development. Devlin and McKay (2016) and Aldahdouh et al. (2020) explore the effects towards higher education instructors when not adequately supported by their institutions, which resulted in inefficiently delivering lectures. Similarly, Huiyu et al. (2005) extensively add insight to the work of Devlin and McKay (2016) and Aldahdouh et al. (2020) by emphasizing the need of establishing standards and quality content within the training and development. Cruthaka and Pinngern (2016) echo the work of Huiyu et al. (2005) by articulating the importance of determining the needs analysis to ensure validity and reliability within the training material. Treviranus and Coombs (2001), Keengwe (2019) and Fathema et al. (2015) align by emphasizing the importance of holding institutions accountable with the lack of commitment to provide training and development. Ray (2009) essentially intertwines the claims of Devlin and McKay (2016), Aldahdouh et al. (2020), Cruthaka and Pinngern (2016), Treviranus and Coombs (2001), Keengwe (2019), and Fathema et al. (2015) to transparently emphasize a higher education instructor’s inability to operate technology stems from the approach of institutions.
The third theme explores higher education instructors’ use of multimedia and the rise of gamification. Deterding et al. (2011) articulate the use of multimedia and gamification to be an effective instructional method and enhance the overall classroom experience. Bolkan (2019) explores the use of Microsoft Powerpoint which incorporates the use of multimedia that often includes attachments of photos and videos to highlight essential information in lectures. Meanwhile, Zarzycka-Piskorz (2016) exemplifies the rise of gamification such as Kahoot! in lectures. Kaufmann (2018) is aligned with Zarzycka-Piskorz (2016) and predicts the future of lectures will heavily involve gamification. Although multimedia and gamification are continually being developed, Vinichenko and Ridho (2019) express how the two phenomena could be further developed to ensure efficiency. Sanchez-Mena and Marti-Parreño (2017) acknowledge the concerns of Vinichenko and Ridho (2019) and identify a solution to resolve the concern. Sanchez-Mena and Marti-Parreño (2017) propose to incorporate the use of multimedia and gamification in training and development. Wiggins (2016) articulates a mutual approach by simplifying the two phenomena and believes it can be successful in classrooms with adequate training. Nworie and Buzzetto-Hollywood (2018), McGriff (2001), and Tarman (2003) are aligned with how expectations to deliver lectures are not accompanied by training of multimedia use. Ofosu-Ampong et al. (2019) statistically validates and intertwines the claims of gamification with the most recent study to date. In contrast, Kirkwood and Price (2013), Craig and Armenic (2006), and Chung (2019) shift their focus on the effects of multimedia on students and articulate how students perceive such methods should be considered. As a result, the theme highlights the potential and future of technology in classrooms.

This chapter revealed the lack of adequate support towards higher education instructors and identified areas of improvement to develop technical expertise. The research is intended to
spark a conversation among members of institutions to hypothesize further proposals to bridge the gap of the digital divide. Amid the COVID-19 pandemic, methods to deliver instruction are rapidly and abruptly changing. The website that will accompany the project has been crafted to prepare current and future higher education instructors in an event such as a global pandemic. Moreover, the website is dedicated for higher education instructors to be utilized as a resource to build their technical expertise if their institution does not provide adequate training and development in technology. It is hoped that the project will be a platform to empower higher education instructors to operate technology in its full functionalities and capabilities. As a result, the project serves as an attempt to contribute a role in bridging the gap of the digital divide.
CHAPTER III
THE PROJECT AND ITS DEVELOPMENT

Description of the Project

The project acknowledges the gap of the digital divide and is designed to make an impact on the higher education instructor population through blogging (Kivunja, 2015). The blog has been meticulously crafted to include elements and inspiration through research. Amid the COVID-19 pandemic, some higher education instructors struggled to deliver lectures virtually due to a lack of training and development from institutions (Keengwe, 2019). The abrupt transition to online learning revealed how institutions should be held accountable for not equipping higher education instructors with technical training and development in an event such as a global pandemic (Fathema et al., 2015).

The ALLiN-Tech website is engineered to implement relevant technological topics, such as hardware, software, multimedia, gamification, and vocabulary (Deterding et al., 2011). ALLiN-Tech strives to encapsulate the complexity and layers of technology to aim for technology readiness for higher education instructors. Inspiration is drawn from the Technology Readiness (TR) framework articulated by Andaleeb (2010), and Davis’ (1989) Technology Acceptance Model (TAM) in an attempt to uncover the needs analysis per user. As a result, the website will serve as an attempt to bridge the gap of the digital divide under the guidance of the Technology Readiness (TR) framework and Technology Acceptance Model (TAM).

Organization

The ALLiN-Tech website is crafted with simplicity and an easy-to-navigate page. The website is intentionally designed to be minimal for easy access to users. The website appears with a single page that captures the objective, an informal assessment, an option to connect with members of the community, followed by the blog values. The user will find themselves with a
link to the blog, which will redirect users to the content of the ALLiN-tech blog. The user will find a horizontal list that is strategically placed from hardware, software, multimedia, gamification, and vocabulary. Moreover, the list serves as an objective to promote a sequential step to understand the depth and complexity of technology.

**Content of Sections**

**Home**

The homepage of the ALLiN-Tech blog brings users to a minimal design that showcases the name and tagline to preview the objective of the blog. The ALLiN-Tech blog name takes inspiration from my name. The second “a” of my name was replaced with an “i” to imply that all the technology resources users would need are “all in” in the blog website. Thus, the tagline of the blog “All your tech needs are ALLiN here” was established.

**About**

The about section of the ALLiN-Tech blog features the inspiration and objective of the website. The about section vocalizes the inspiration of crafting a blog for higher education instructors due to the need for technical literacy skills amid the COVID-19 pandemic. The about section addresses the issue of how some higher education instructors are struggling to deliver lectures in an online format. Moreover, it invites potential users to share their knowledge and experience which will be utilized as an attempt to bridge the gap of the digital divide.

**What’s your level of proficiency?**

This section sparks the opportunity for users to reflect on their level of proficiency with technology. The objective is to guide users to identify their strengths and areas for improvement. The section is distributed into three sections, beginner, intermediate and advanced. Within the beginner section, it articulates the need to learn the basic functionalities of the hardware of
technological devices, such as computers and tablets. The following paragraph within the section highlights an intermediate proficiency, which articulates the need to acquire the skills to operate the software of technological devices. The section concludes with a summary that articulates an advanced proficiency level, which demonstrates the need for users to refine their skills with multimedia applications such as Microsoft PowerPoint and the use of gamification such as Kahoot! Moreover, users can utilize the information to adequately determine the next steps to build their technical expertise. The Technology Readiness (TR) framework articulated by Andaleeb (2010) model has been utilized for the section to provide a foundation for users. As a result, intertwining elements of the TR framework in the section serves an attempt to jumpstart the process of bridging the gap of the digital divide among higher education instructors.

**Stay in the Loop!**

The section of the homepage is intended to subtly invite users to join the community of ALLiN-Tech. It is intended to use casual verbiage to assure users that the community is an open and accepting learning space. Below, users will find a sign-up box that requires potential users to input their name, contact information, and share their thoughts in the message center. Within the message center, users that are inquiring about joining the community will be provided the opportunity to share about themselves with the moderator and other users of the ALLiN-Tech community. Located on the right side, potential users will be provided with up to three options to select from with their areas of interest, which are hardware and software, multimedia, and gamification. This section essentially serves as an informal assessment. The section draws inspiration from Davis’ (1989) Technology Acceptance Model (TAM) to assess potential users’ acceptance of the complexity of technology. As potential users provide their information, it will
be utilized in an attempt to guide users on how to efficiently develop their technical literacy skills to bridge the gap of the digital divide.

**Values**

The concluding section of the home page ends with four columns that articulate the values of the ALLiN-Tech community. The first value articulates the importance of feedback, which will be encouraged to ensure validity in content. The second value articulates the optimism to share, which is intended to have potential users feel that they have valuable knowledge to share with others. The third value, empower, encompasses the accountability we hold to support users in the community. Network concludes the list of values as an attempt to encourage users to build connections within the ALLiN-Tech community and outside the community to further make an impact. Moreover, the “share” component has been hyperlinked to redirect potential users to post blogs, share stories and provide feedback. By sharing the objective and values, these will serve as imperative competencies to demonstrate to bridge the gap of the digital divide.

**Blog**

The section of the website provides the content that pertains to hardware, software, multimedia, gamification, and vocabulary. Users will find an organized space that represents each area of interest in different sections. The section is designed with simplicity to achieve easy navigation for users on the platform. The feedback section will be located in the blog section to incorporate the voices of users. Moreover, users will find an “About the Creator” section that articulates the background and credibility. Members of the community will be able to view and access content per section posted by the creator and other potential users to spark a technical
conversation. The users on the platform will be able to select their areas of interest to kickstart their development to bridge the gap of the digital divide.

**Development of the Project**

As a current Technician at Apple, I have encountered a spike in engagement with educators amid the COVID-19 pandemic. The abrupt transition from in-class learning to online revealed how educators were not adequately trained by institutions from a technical perspective. The primary reason why educators made technical appointments at Apple was due to their inability to operate the hardware of computers and tablets. Moreover, the software and program applications are needed to deliver lectures online through Zoom. From saving data, downloading applications, to utilizing systematic features, the COVID-19 pandemic revealed how basic technology practices have yet to be achieved by some educators. The hardware and software sections of the website are implemented to establish a technical foundation and resource for users to refer to. As a result, this inspired the development of ALLiN-Tech to contribute relevant work in the field and bridge the gap of the digital divide among higher education instructors.

Before becoming a Technician at Apple, I collaborated with English as Second Language (ESL) students at Education First as a Student Services Coordinator. A specific task within my role was to ensure iPads are updated and ready to use for lectures. Moreover, the use of course books slowly diminished due to the pervasiveness of technology. The feedback appeared to be satisfactory as students would be eager to get their hands on the iPad due to the intuitive interactions it produces. The use of tablets in classrooms as a primary tool assured me in the process of my research and creation of ALLiN-Tech that technology is rapidly redefining classroom expectations. The multimedia and gamification sections of the website are implemented for higher education instructors to learn and accommodate the interests of most
students. My role at Education First revealed how technology has cemented itself as an essential tool for today’s classrooms.

From a student’s perspective, nearly all professors during my graduate career at the University of San Francisco and UC Berkeley Extension struggled to demonstrate technical literacy skills to deliver classes virtually. Some professors struggled to operate basic functionalities such as adjusting the volume, launching and closing applications, playing videos, and screen recording lectures. The lack of technical expertise from some professors could indicate that leadership in the institution did not provide adequate training and development in the event of a global pandemic. As a result, this interrupted the consistency and efficiency which impacts the quality of learning for students such as myself.

During the developmental process of ALLiN-Tech, I was inspired by seeking other platforms to craft the website that I have yet to use. I wanted this project and platform to differentiate from my past work. I was introduced to Wix in 2019 when I accompanied a friend and her sister when Wix participated in San Francisco's Pride parade. I was able to explore the building and immerse myself in the company culture. I knew that Wix would be a platform that I could use for the project due to the services I needed and company culture.

With regard to crafting the content and website itself, it has gone through one major redesign. The website was initially intended to be a formal curriculum for higher education instructors. However, while creating ALLiN-Tech, I noticed how the design and verbiage used felt non-personable. I acknowledged how the tone and design did not reflect who I am. After careful consideration, I redesigned the website and tone to reflect my personality. I went on to create ALLiN-Tech as a blog, rather than a formal curriculum. The intention is to create a community for higher education instructors to share their technical stories and empower one
another through blogging. The blogs I posted consist of free-writing to commit to the direction of establishing an informal tone. Moreover, it is intended to have informal verbiage to establish an inviting platform and eliminate any pressure users may have.

To provide additional access for users, I modified a mobile version of the ALLiN-tech website. The thought process was to provide an accessible option for users that may not have access to a computer or tablet. The mobile version of the website is formatted strategically to encapsulate the key features of the blog.

The ALLiN-Tech website is meticulously crafted from my professional and academic experience to contribute a relevant platform in the field of education. ALLiN-Tech incorporates a minimal and simplistic design for easy navigation within the website. Moreover, the design and font have been revised twice to further commit to simplicity. ALLiN-Tech could be utilized as a resource for those who are not equipped with sufficient training and development from their institution. Amid the COVID-19 pandemic, the website is engineered to establish a technical foundation in hopes of making a lasting impact to empower higher education instructors.
The Project

https://allansiochi.wixsite.com/allintech

Visual examples of the project are located in the Appendix.
CHAPTER IV
CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The COVID-19 pandemic revealed how a fraction of institutions did not provide technical training and development for higher education instructors (Shenoy et al., 2020). The abrupt transition from in-person classes to an online format redefined classroom expectations and instructional methods (Ali et al., 2020). Members of the higher education instructor population struggled to deliver lectures virtually due to their inability to operate the functionalities of technological devices (Ray, 2009). The lack of initiative from institutions to provide technical training and development inevitably impacts the quality of learning for students to attain content material (Ray, 2009). As a result, this reveals the negligence of institutions to prepare higher education instructors in an event such as a global pandemic. The field project, the ALLiN-Tech blog, is intended to contribute to the field of education in an effort to bridge the gap of the digital divide.

The claims of Devlin and McKay (2016), Aldahdouh et al. (2020), and Huiyu et al. (2005) align with how technical training and development are essential to adapt to the needs of modern classrooms. The ALLiN-Tech blog encapsulates technical resources for higher education instructors that are not equipped with adequate support from their institution. Moreover, Cruthaka and Pinngern (2016) acknowledge how the content of training and development should establish relevant material to ensure accuracy and validity. The ALLiN-Tech blog commits to the need of incorporating relevant and material through recently posted blogs under each area of interest to align with the claims of Cruthaka and Pinngern (2016).

Ottenbreit-Leftwich and Glazewski (2010), Kopcha (2012), and Vovk (2019) align by vocalizing the need to understand the attitudes and beliefs of higher education instructors
towards technology. The ALLiN-Tech blog captures the need of taking attitudes and beliefs into consideration through blogging. Members of the ALLiN-Tech blog will be able to assess their level of proficiency and articulate areas of interest to align with their attitudes and beliefs. As a result, this would ideally have members find meaning and value with technology.

Moreover, Fisk (2011) and Andaleeb (2010) amplify the importance of attitudes and beliefs by incorporating the Technology Readiness (TR) framework. The ALLiN-Tech blog draws inspiration from the Technology Readiness (TR) framework and Technology Acceptance Model (TAM) to guarantee users the opportunity to assess their strengths and areas of improvement. The ALLiN-Tech blog provides a message box under “Stay in the Loop!” on the homepage for users to share their technical background, acceptance of technology, and assess their readiness with technology.

With the rapid development of technology, instructional methods, and classroom expectations through multimedia and gamification (Deterding et al., 2011). The ALLiN-Tech blog aligns with Bolkan (2019) by acknowledging how instructional methods have skyrocketed to a new peak that imposes new technical expectations. Bolkan (2019) articulates how programs such as Microsoft Powerpoint have played a prominent role in delivering lectures that include the use of multimedia. The ALLiN-Tech blog accommodates the claims of Bolkan (2019) by posting an informative video of how to operate the program application.

Similar to the claims of Bolkan (2019), Zarzycka-Piskorz (2016) explores how the rise of gamification is linked to an increase in student engagement in classrooms. The ALLiN-Tech blog also aligns with the claims of Zarzycka-Piskorz (2016) by sharing a cohesive video of a rising application, Kahoot!, which draws gaming elements into classrooms. Moreover, ALLiN-Tech
encapsulates the drastic instructional methods by providing multimedia and gamification as areas of interest for potential users to embrace the future of modern classrooms.

After meticulously crafting the website, the Technology Acceptance Model (TAM) and Technology Readiness framework (TR) prominently influenced the development of the ALLiN-Tech blog to align the connection between the user and content material. As a result, this project will potentially establish the groundwork to bridge the gap of the digital divide among higher education instructors.

Recommendations

The ALLiN-tech blog is designed to provide higher education instructors a platform to build their technical expertise and feel empowered within the community. It is intended to establish sufficient technical content for users due to some institutions not equipping staff with adequate training and development. The simplicity of the ALLiN-Tech blog is intentional for users to navigate seamlessly. Moreover, the tone of the blog portrays casual verbiage to eliminate potential pressure users may have that are yet to comprehend technical vocabulary. The ALLiN-Tech blog is intended to jumpstart the path for users to bridge the gap of the digital divide.

Through extensive research, the Technology Acceptance Model (TAM) influenced the objective of the ALLiN-Tech blog. The ALLiN-Tech blog acknowledges the essence of contextualizing technological equipment for it to have meaning among higher education instructors. To utilize technological equipment, the perceived usefulness and ease of use of higher education instructors must be addressed. The ALLiN-Tech blog aligns with a similar approach by implementing various areas of interest, such as hardware, software, multimedia, gamification, and vocabulary to initiate the conversation among themselves to determine how
technology can be of use. The areas of interest are strategically placed horizontally to implicate a sequential order for learning. It is recommended for users to start in sequential order in an effort for users to comprehend the complexity of technology. Nonetheless, users will be able to select a specific topic of their own choice if desired.

As users immerse themselves within the ALLiN-Tech blog, the influence of the Technology Readiness framework (TR) is incorporated to guide users determine their technological readiness. It is recommended for users to explore the blog with the various areas of interest before posting. The concept of posting blogs serves as a method to ensure users have attained the content material and established readiness to join the conversation about technology. Moreover, a message box is conveniently located beside the areas of interest checklist. It is recommended for potential users to precisely assess their technical background, strengths, and areas of improvement for members in the community to adequately support each other. Users can also vocalize their thoughts by providing constructive feedback, which is visible to the moderator and other members of the community. It is recommended for users to utilize the feedback portal upon sufficient time exploring the blog. As a result, this will ideally strengthen and refine the material to ensure validity among users of the ALLiN-Tech community.

The ALLiN-Tech blog recommends users explore on their own rather than be molded to a specific curriculum. The concept of blogging creates a personalized form of curriculum to meet the unique needs of each individual. The primary objective of the blog is for higher education instructors to build a foundation to transfer technical expertise and skills to their classrooms. This strategy will ideally make a lasting impact on students to be equipped with relevant material delivered by their higher education instructor.
To further revolutionize the blog, a mobile version of the website exists yet could staple itself as a credible platform through engineering an official mobile application. It is recommended to regularly modify the mobile version and formatting to ensure accessibility on different technological devices, such as mobile phones and tablets. With the emergence of technology in classrooms, an official program application could extend its accessibility and reliability for the higher education instructor population.

Technology has become an invasive phenomenon that redefined how we are expected to execute expectations in institutions. The vision of the ALLiN-Tech blog is to adapt to the fundamental changes of technology to ensure efficiency with bridging the gap of the digital divide.
References


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APPENDIX

ALLiN-Tech
ALLIN-Tech is a blog designed to provide higher education instructors a platform for guidance with adapting to the demands of technology.

Amid the COVID-19 pandemic, ALLIN-Tech acknowledged the lack of technical expertise needed to deliver lectures virtually. ALLIN-Tech is crafted in an effort to equip members with resources to bridge the gap of the digital divide.

Members of the ALLIN-Tech community will be able to network with other users to empower themselves by sharing technical resources and their stories. ALLIN-Tech aims to have users build technical expertise through multimedia, articles, and common technical terms to develop the technical expertise needed in modern classrooms.

Share your stories, recommendations, feedback, and everything tech through blogging!
What’s Your Level of Proficiency?

Beginner
Could use assistance operating the hardware of technological devices, such as computers, tablets, mobile phones, etc. Would also like assistance utilizing built-in features of technological devices, such as function keys, trackpads, etc.

Intermediate
Could use assistance with how to operate the software of technological devices, such as operating system, launching and navigating web browsers, and utilizing system settings.

Advanced
Seeking to refine skills with incorporating multimedia, such as photos and videos in lectures. Moreover, incorporating the use of Multimedia, such as Microsoft PowerPoint & Gamification, such as Kahoot!

Current as of 05/2021
Stay in the Loop!

Stay in the loop
Introduce yourself! Share your story.

First Name ___________________________ Last Name ___________________________

Email ___________________________ Phone ___________________________

Message ____________________________________________________________________________

Areas of Interest

☐ Hardware & Software
☐ Multimedia
☐ Gamification

Send

Current as of 05/2021
Values

Current as of 05/2021
Blog

Beginner's guide to Microsoft PowerPoint

Build your power with Powerpoint.

5 MINUTE GUIDE TO Kahoot!

Kahoot! ... or not

ALLAN aka ALLIN

Tech Vocabulary

0ps+sticks

Big... Mac

iCan't help but share about iPadOS

Current as of 05/2021
ALLAN aka ALLiN

What's up, everyone. It's Allan.

Prior to grad school, I started my academic career at City College of San Francisco and obtained my Associates in Science in Social and Behavioral Sciences in 2015. I went on to become the first and youngest in my family to transfer to a four year university. I attended San Francisco State University and obtained my Bachelor of Arts in Communication Studies in the Fall of 2016.

Upon graduation, I worked at Education First as a Student Services Coordinator. I've met tons of students from all around the globe that relied on technology to communicate, and noticed how the school issued iPads during lectures per student as a primary tool. My experience revealed how technology is redefining classroom expectations.

During these crazy times of COVID, I am currently wrapping up on my last semester of graduate school at University of San Francisco with a major in Teaching English to Speakers of Other Languages. With the shift to virtual learning, I noticed how some of my instructors were unable to deliver lectures virtually efficiently. I've also encountered educators at work seeking to learn how to operate computers and tablets, along with the hardware’s operating system and program applications.

As a current Technician at Apple, I knew I could contribute to the field with my passion for education and technology. Thus, ALLiN-Tech was created to provide higher education instructors with technological resources in an effort to bridge the gap of the digital divide.