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An Analysis of the Local Control Funding Formula (LCFF) as an Instrument of Recognition and Distribution Justice

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AN ANALYSIS OF THE LOCAL CONTROL FUNDING FORMULA (LCFF) AS AN INSTRUMENT OF RECOGNITION AND DISTRIBUTION JUSTICE

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Dissertation Abstract

An analysis of the Local Control Funding Formula (LCFF) as an Instrument of Recognition and Distribution Justice

The 2013 Local Control Funding Formula (LCFF) is the first substantive finance reform measure in California specifically designed to provide additional funding to targeted student groups. The present study adopts Nancy Fraser's (1995) theory of distribution and recognition justice to examine the allocation of resources under the new formula. Critical quantitative methodology is employed to investigate if students identified as being in poverty, English Learners (ELs), and African-American students, benefit under the LCFF. Pre- and post-LCFF comparisons of district level per pupil dollar allocations from LCFF, Other State, Federal, and Local resources are conducted. The findings show that post-2013, funding for all students has increased, with the distribution of resources under the new formula indicating that the LCFF is a progressive funding model. Students in poverty are afforded a substantive measure of recognition and distribution justice, with poverty status being the key determinant in LCFF resource distribution. Due to the unduplicated pupil count provision, EL status does not count in LCFF formula allocation. Targeted benefit for EL and African-American students is dependent on the intersection of these groups with poverty. Distributive justice under LCFF is also tempered by regressive trends in Other State and Local allocations. Recommendations for future research and policy consideration are given.

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.

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CHAPTER ONE - THE RESEARCH PROBLEM

Statement of the Problem

In 2013 the state of California adopted a new public education funding model. The Local Control Funding Formula (LCFF) marked a significant change in the distribution of state education dollars from a historic focus on equal funding per student, to an allocation model in which monies are distributed differentially based on student eligibility category. Specifically, districts serving students identified as being economically disadvantaged, students identified as being English Learners (ELs) and students identified as being Foster Youth (FY), receive additional resources per eligible student based on the new funding formula model.

Literature on the relationship between monetary resource input and student education performance (output) has established that, while there are significant methodological complexities associated with measurement, a positive correlation exists between the two (Baker, 2017; Chingos & Blagg, 2017; Hedges, Laine & Greenwald, 1994; Holmlund, McNally, & Viarengo, 2010; Jackson, Johnson, & Persico, 2016; Krueger, 2003; Lafortune, Rothstein, & Schanzenbach 2016; Lewis, 2009; Palardy, 2013; Verstegen, & King, 1998). Put simply, when it comes to student achievement, money matters. Notwithstanding the multiple non-academic benefits of educational spending, increasing funding generally correlates with better performance on standardized testing and increased graduation rates, the most common criteria used for measuring student achievement in academic research and in policy planning.

The relationship between demographic categories such as socioeconomic status or ethnicity/race and student achievement in public education has been well documented in

the literature; and efforts to improve outcomes for students who are economically disadvantaged and for minority students, has been the focus of much education reform over the past half century (Barrow & Markman-Pithers, 2016; Downes 1992, Gándara, Rumberger, Maxwell-Jolly, & Callahan, 2003; Hill, 2012; Kantor & Lowe, 1995; Ladson-Billings & Tate, 1995; Milner, 2013; Noguera, 2011; Reardon, 2011a; Reardon, 2011b; Reardon et al., 2018; Rose, Sengupta, Sonstelie, & Reinhard, 2008). The passage of the LCFF, as the most significant funding reform in California public education history, carried with it important promise of benefit to targeted student groups including students identified as living in poverty and ELs.

The recognition of difference in need and circumstance among students, and the assumption of responsibility via the weighted distribution of resources to students living in poverty and ELs, established the instrumental potential of the LCFF as tool of resource redistribution in support of targeted student groups. As stated above, the efficacy of funding reform is typically assessed via measures of student outcome, with significant attention to the examination of test score disparities and achievement gaps between student groups. Such input-output analysis is incomplete absent a preliminary examination of the dynamics of funding reform implementation. That is, a study of the distribution of resources under funding reform and the identification of beneficiaries and of funding gaps, is an important first-step towards comprehensive evaluation of funding reform efforts. This dissertation addresses that need through examination of district-level demographic characteristics of groups targeted for additional funding in California, and analysis of the relationship of those groups to the actual distribution of resources across the state under LCFF.

Background and Need

Pervasive disparities in academic performance between the various student groups in public education has been substantiated in the research (Barrow & Markman-Pithers, 2016; Downes 1992, Gándara et al., 2003; Hill, 2012; Ladson-Billings & Tate, 1995; Milner, 2013; Noguera, 2011; Reardon, 2011a; Reardon, 2011b; Rose, Sengupta, Sonstelie, & Reinhard, 2008). The "achievement gap" between lower-income students and those who are wealthier, between African-American and Hispanic students and their non-Hispanic white peers or Asian peers, and between students who are English Learners and their English-Only peers, shows up across multiple measures of school success. In California, state standardized assessment results and high school graduation rates have historically reflected differences in achievement defined by race, ethnicity, class, gender, language, and ability.

Many researchers studying the relationship between student demographic markers and student performance outcome, have concluded that achievement gaps are primarily resultant from "opportunity gaps" arising from the unequal availability of resources across student populations, and that disparities are deeply rooted in a broader societal legacy of racism, segregation, and inequality (Crawford, 2004; Gándara et al., 2003; Hill, 2012; Kirst, 1994; Ladson-Billings, 2006; Reardon, 2011a; Reardon et al., 2018; Robinson, 2000; The Equity and Excellence Commission, 2013; Vasquez Heilig, 2011; Vasquez Heilig & Holme, 2013). Reardon et al. (2018) reflecting on test score disparities state that, "average test scores within schools, districts, or groups of students can be thought of as measures of the sum total of a population's educational opportunities, opportunities that children experience in their homes, neighborhoods, early childhood

environments, preschools, and K-12 schools" (p. 2). That is to say, minority status or poverty status per se do not in and of themselves preclude learning and achievement. Rather, related historically established and pervasive inequities make school success significantly less likely for some students.

With few to no exceptions, inequities in public education historically comprise both a demographic component such as student ethnicity/race or socioeconomic status, and a resource component related to funding allocation. Throughout the 19th and most of the 20th century, the majority of public schools in the United States were funded at the local level, leading to vast differences in resources and education experiences between rich and poor communities. For example, in California, the Legislative Analyst reported that the assessed tax base valuation per elementary school student 1968-69 ranged from a low of $125 to a high of $1,156,872 (California State Government, 1970, p. 192). Whether via de jure or de facto segregation, African American and other students of color typically lived in the poorest areas with the least funding and the worst facilities.

Although legal segregation in California schools was abolished in 1947 eight years before *Brown v. Board of Education* (1954), segregative practices remained entrenched in the state including a lack of desegregation oversight, manipulation of school boundaries and residential segregation (Orfield & Ee, 2014). Survey data from 1966 shows that, in the state's largest school districts, 57 percent of Latino students and 85 percent of African-American students were attending largely segregated "minority" schools (Orfield & Ee, 2014, p. 12).

Confronted with the disappointment of continued segregation post-*Brown*, a focus on funding equality across student groups gained greater momentum among public

education advocates throughout the 1960s. Strategically in the face of post-*Brown* backlash, economic status replaced racial status as the primary focus of legal remedy. For example, the Los Angeles county school districts chosen for funding comparison in the landmark 1971 *Serrano v. Priest* filing, Baldwin Park at $577 per pupil and Beverly Hills at $1232 per pupil (*Serrano v. Priest*, 1971), both had a very low percentage of residents of color, at 2% and 3.2% respectively (United States Census Bureau, 1970). Funding allocation was thus presented independent of racial status.

The California State Supreme Court in *Serrano* (1971, 1976) mandated that public-school financing in California be 'wealth-neutral' and that wealth-related spending differences between school districts should be eliminated. Property tax earmarked for education was collected at the county level, sent to the state level and then redistributed at the school district level, with the state making up the balance to reach an identified minimum per-pupil funding level. Tax-based funding equality per *Serrano*, although established in California by 1983, did not result in equal outcomes for different student groups (Downes, 1992). The mandated redistribution of resources was compromised following the passage of Proposition 13 in 1978 placing a cap on property taxes, and ultimately reducing property tax rates on homes, businesses and farms in California by about 57% (Freelon, Bertrand, & Rogers, 2012, p. 155).

Proposition 13 has sometimes been interpreted as a revolt by property owners in wealthy neighborhoods against paying taxes that might be redistributed away from their local schools to less affluent communities (Kozol, 1991). Regardless of primary motivation, the effects of Proposition 13 were devastating and long-term. The state assumed primary responsibility for funding public education and with decreased tax

revenue, per-pupil funding began to decline, moving California from 7th highest in the nation in per pupil spending to 19th place by 1980 (EdSource, 2018b). Although voters passed Proposition 98 in 1988, requiring that a minimum percentage of the state budget to be spent on K-12 education, the California legislature continued to underfund education. Beginning in 2007, the great recession saw a precipitous decline in education funding and by 2011 per-pupil funding in California was the lowest in the United States (EdSource, 2018b).

Throughout the 1990s and into the new millennium, mandated testing continued to reflect that the California's diverse student body, at the level of standardized assessment, was predictably sorted by economic status, English Language status, and by ethnicity/race. In other parts of the country, recognition of education inequities promoted finance reform efforts in pursuit of equity and adequacy funding models. Funding equity in public education finance refers to a vertical funding model in which the provision of funding is differentiated in response to some perceived difference in need and circumstance among various student groups in support of equality of outcome. Funding adequacy refers to the level of funding that is needed in order for the various student subgroups to achieve a minimal specified outcome.

California adopted a vertical funding model in 2013 with the passage of Assembly Bill 97 (AB 97), signaling a complete overhaul of California's TK-12 education finance system. The LCFF is significant in being the first time that a prescribed remedy for education inequality in California was not further attempts at equalization and for recognizing that improvement in student outcomes requires recognition of differences between students. The provisions of the LCFF described below, make the LCFF a

funding equity model as opposed to a funding adequacy model. The transition to the LCFF was helped by additional tax revenue directed to schools from Propositions 30 (2012) and Proposition 55 (2016).

The Local Control Funding Formula (LCFF)

The 2013 LCFF replaced a funding structure that had been in place for almost 40 years and introduced a weighted funding formula in support of students identified as needing additional resources to succeed. The bulk of the funding is provided in per-pupil base grants based on districts' Average Daily Attendance (ADA) in four grade spans, with the 2017-18 allocation ranging from $7,941 to $8,939 per ADA depending on grade level. ADA is defined as the total days of student attendance divided by the total days of instruction. LCFF supplemental grants comprise an additional 20% of the grade-span base rate for each student who qualifies for Free or Reduced Meals Program (FRMP), who is an English Learner (EL), or who is a Foster Youth. *Figure 1* provides a visual of how the LCFF allocation works.

The LCFF uses an unduplicated pupil count meaning students, for funding allocation purposes, may only be counted in one group. Thus, the unduplicated pupil count may be considerably lower than the total of FRMP-eligible, EL and Foster Youth students. For each student in one of the targeted groups above a district-wide 55% threshold, the district receives a concentration grant, an additional 50% of the grade-span base grant. Most districts received increased state aid under the LCFF compared with the prior education finance system, and districts with substantial proportions of targeted

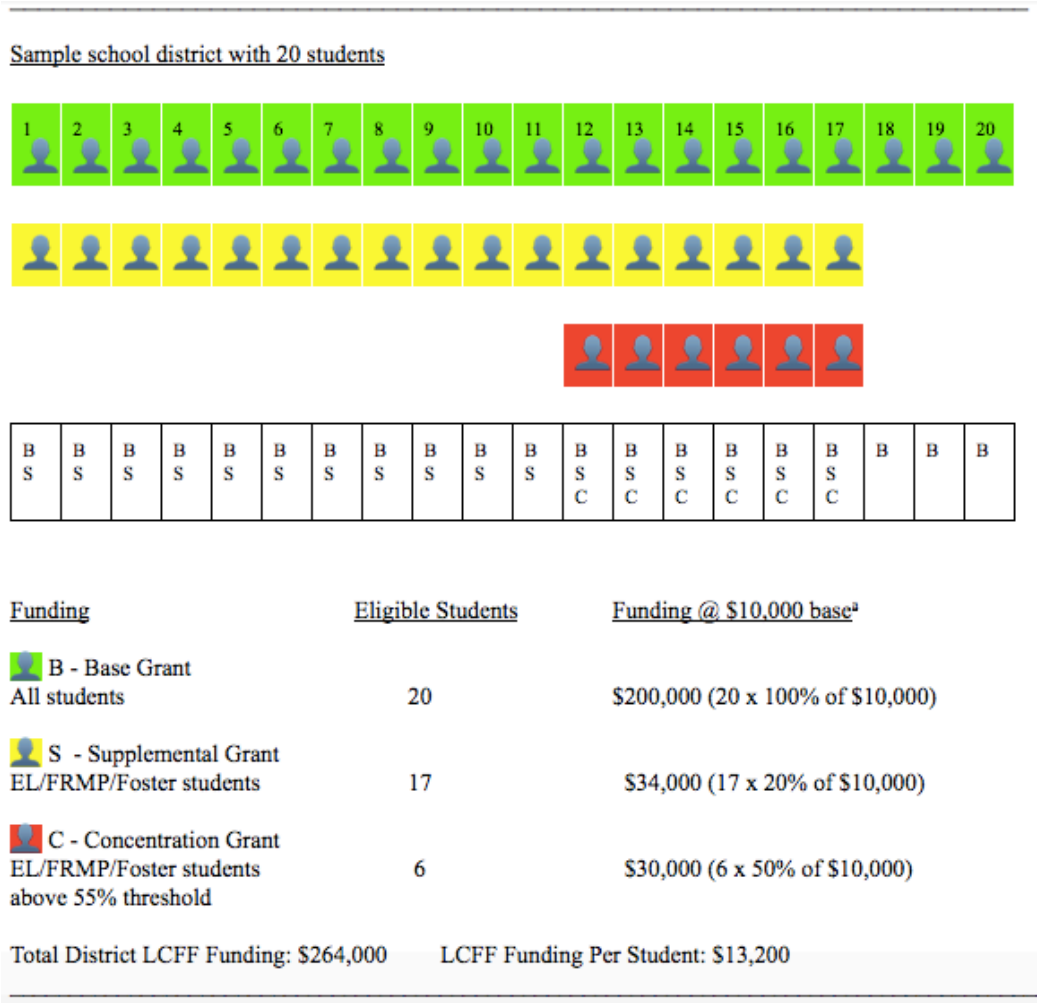

Figure 1. Illustration of how the LCFF allocation works.

[a]The $10,000 per ADA base funding allocation is used for illustration purposes.

students received the greatest increase (Taylor, 2013). Although the LCFF supplemental and concentration grants can create large differences in per pupil funding between districts, a hold harmless provision ensured that no district receives less state aid than in the year prior to the enactment of the LCFF (Taylor, 2013).

As might be inferred from *Figure 1*, the LCFF allocation model can result in significantly more state funding per student at the district level, based on the percentage

of total student enrollment eligible for supplemental and concentration grants. Table 1 below provides information on how the distribution of LCFF changes according to the characteristics of the district enrollment. The base grant associated with a single unit of ADA can be increased by 70 percent for each ADA over the concentration grant 55% threshold and a district with 100% supplemental grant eligible students can receive a combined 42.5% above total base funding. In other words, allocation specific to the enrollment composition of individual districts provides for far greater funding for districts with eligible students.

Table 1

LCFF Allocation - Sample Comparison Between Three Districts

	ADA	Base Grant $10,000[a]	Concentration Grant	Supplemental Grant	Total Funding	% Over
District A						
ADA	100	1,000,000				
% FRMP/EL/Foster	0		0			
% over 55% threshold	0			0		
Total District Funding					1,000,000	0
Per-Pupil Funding					10,000	
District B						
ADA	100	1,000,000				
% FRMP/EL/Foster	50		100,000			10
% over 55% threshold	0			0		
Total District Funding					1,100,000	10
Per-Pupil Funding					11,000	
District C						
ADA	100	1,000,000				
% FRMP/EL/Foster	100		200,000			20
% over 55% threshold	45			225,000		22.5
Total District Funding				1,425,000		
Per-Pupil Funding				14,250		

[a] $10,000 per ADA base funding allocation is used for illustration purposes.

Poverty, for LCFF allocation purposes, is measured by proxy through student participation in the FRMP. ELs are identified as students who speak a language other than English at home and who have not yet met the language and literacy skills needed to succeed in a school's regular instructional programs without additional support. As up to 85% of EL students are also economically disadvantaged (California Department of Education, 2017a), the distribution of students using the LCFF allocation model essentially maps student poverty across the state. Although students from all racial and ethnic groups experience poverty, students of color in California are proportionately more likely to live in poverty than white students (Bohn & Danielson, 2017). Thus, the LCFF distribution model may potentially serve as a mechanism for affirmative resource allocation. Foster Youth, one of the supplemental-funding eligible categories under LCFF, are excluded from the current study as they comprise on average less than .5% of total enrollment and Foster Youth status is highly correlated with FRMP-eligibility.

Evaluating the Local Control Funding Formula (LCFF)

Notwithstanding its many faults, the potential benefits of public education and the effect that education has on the quality of life, make the distribution of educational resources a matter of great social and economic justice. The LCFF is the first substantive finance reform measure in California specifically designed to differentially support students who have historically received less benefit from their education as compared to more privileged peers. One of the major goals of the LCFF is to help districts address the long-standing achievement/opportunity gap between various student groups (Hill & Ugo, 2016, p. 1). As such, investigation into the efficacy of the LCFF as an agent of resource

redistribution in support of students in poverty, English Learners, and African-American students, is an issue of both practical obligation and historic import.

Analysis of the effect implementation of the LCFF is complicated by several factors. While the LCFF provided a formula for the allocation of resources, actual public education dollars are independent of the LCFF, defined by allocation through the state budget. In developing the LCFF, the state created a *target* for the base grant and included an annual cost-of-living adjustment (COLA). The base grant amount has increased annually since 2013-14, meeting the LCFF target at 97% in 2017-18, and fully met in the 2018-19 school year (Budget Center, 2017). Thus, analyses to date do not measure LCFF at full implementation.

LCFF is one of four revenue sources to school districts in California and although it makes up the largest portion of funding, examination of the LCFF requires consideration of Federal, Local and Other State funding. That is, the comparative effect of the targeted monies, "depends on how successful are states at counteracting local funding, which tends to be regressive" (Chingos & Blagg, 2017, p. 2). Finally, the Common Core State Standards (CCSS) and a new state standardized assessment based on the CCSS were also implemented during the first couple of years of the LCFF. These factors complicate pre- and post-LCFF comparisons. Table 2 provides information on this sequence of education reforms.

The emerging research since the roll-out of the LCFF is primarily focused on student academic achievement. Hill and Ugo (2016) found a negative correlation between the percentage of total enrollment eligible for supplemental funding and student performance measured at the district level, on state standardized assessment (p. 2). Their

Table 2

Sequence of Education Reforms in California 2012-2015

School Year	Old	New
2012-13	Final year of old funding formula Final year of old state standardized assessments (STAR)[a]	
2013-14	Last year of old content standards	First year of LCFF Trial year of new state standardized assessments (CAASPP)[b]
2014-15		First year of Common Core State Standards[c] First year of CAASPP administration

[a]STAR - Standardized Testing and Reporting program

[b]CAASPP - California Assessment of Student Performance and Progress

[c]Although California adopted the Common Core State Standards (CCSS) in 2010, implementation was gradual with the first year of full implementation being 2014-15

2016 analysis found that the test score gap in the first year of the new state standardized assessments was larger for 4th-grade EL and economically disadvantaged students when compared with the old assessment (2016, p. 2). While overall student performance increased in the second year of the new assessments, test score gaps did not substantially narrow. More recently, Warren (2018) analyzing 2017 test score data also found achievement levels were much lower for low-income and English Learner (EL) students. Johnson and Tanner (2018) found an overall increase of 5.9% in high school graduation rates related to increased funding through the LCFF and years of school-age exposure to

the LCFF, including increases in graduation for FRMP-eligible, Latino, and African-American students (p. 22). Increases in state standardized test scores in both English and math were also found for FRMP-eligible students and Latino students ((2018, p. 22). Of note, charter schools which currently comprise about 10% of California enrollment, were excluded from Johnson and Tanner's analyses. Finally, Hill, Gao, and Warren found that achievement gaps have not narrowed post-LCFF between White students and non-FRMP students, and other groups including, African American, Latino, low-income, and EL students (2019).

To date, the author is aware of only one study that has included analysis of LCFF allocation by LCFF-eligibility student demographic categories including a pre- and post-LCFF comparison. Bruno states in the introduction to his 2018 analysis of California school district resources and spending 2004-2005 to 2016-2017, that in order to understand LCFF-related studies, "it is useful first to have a basic descriptive understanding of how the state's public-school districts get and spend their resources" (p. 1). This researcher is in agreement and further contends that absent an initial examination in confirmation of the distributary intent of the LCFF as an equity tool, studies on the relationship between the LCFF and student outcome, may be missing a substantial piece of the overall picture.

Bruno's study (2018) is a replication of a similar study of California school district budgets conducted by Loeb, Grissom and Strunk (2007), and includes much information relevant to the present study regarding the relationship between funding demographic category and funding amount. Specifically, Bruno found in examining district resources and district characteristics that 1) districts with the largest shares of

unduplicated students receive more revenue overall but LCFF revenues account for only 46 percent of the funding difference; 2) districts with a higher unduplicated pupil count are not clearly receiving more resources under the LCFF as compared to districts with fewer LCFF supplemental-grant students; 3) districts with the largest proportion of ELs may be receiving less resources overall as compared to districts closer to the median proportion of ELs (2018, pp. 14-17).

Bruno (2018) did not find a strong correlation between LCFF supplemental eligibility categories and race (r=.15) (p.18). However, as expected, there was a strong correlation between FRMP-eligibility and EL status (r = .99) (pp. 18-19). In analyzing funding levels 2004-2016, Bruno found that overall resources were higher in 2016-2017 than in any previous year and that increased revenue was primarily due to LCFF funding (pp. 19-25). Comparatively, districts with greater proportions of lower-income students and English Learners, had greater levels of funding post-LCFF but the gap between highest and lowest resourced districts remains fairly consistent over the studied time period (pp. 22-28).

Purpose of the Study

The purpose of this study is to examine the equity potential of funding distribution under the LCFF towards the recognition and support of difference in need and circumstance for various student groups. The present study expands on Bruno's work in using more recent data from the 2017-2018 school year on student demographics and school district funding across California. A more detailed analysis of the composition of district-level LCFF-funding eligibility categories by student FRMP eligibility, EL status and for African-Americans students is conducted. The distribution of district-level LCFF

resources is analyzed with consideration of how other district funding categories including Other State, Federal, and Local funding resources may be mitigating against the LCFF allocation; a comparison to 2012-13 school year, the last year of the old funding formula is conducted. Finally, the relationship of groups targeted for LCFF supplemental funding to actual district-level LCFF resource distribution is examined.

A comparison to 2012-13 pre-LCFF student demographic characteristics and funding resource distribution is completed to determine if and to whom the LCFF model provides an increase in funding relative to the old funding model. A critical quantitative approach comprising a combination of descriptive and inferential statistics is used. This work may help determine if the weighted student formula being implemented through the LCFF is resulting in distributional equity measured by greater resource support of identified students groups.

Theoretical Framework

The researcher adopts political philosopher Nancy Fraser's theory of recognition and (re)distribution justice as the theoretical framework for the present study. The framework situates the instrumental objective of the LCFF within a larger discourse around equity and justice, in education and in society. A critical quantitative approach, as detailed in Chapter Three on methodology, is used towards the examination of the LCFF through this theoretical lens.

Distribution justice and recognition justice

Fraser (1995) has argued that justice (and injustice) can be understood in two separate but interrelated ways, namely recognition justice and distribution justice. Distributive justice, informed by a commitment to egalitarianism, addresses

socioeconomic injustice through the more equitable redistribution of resources, such as income redistribution or reorganizing the division of labor (1995, p. 72). In public education, issues related to funding and resource allocation exemplify distributive justice and/or injustice. For example, in favor of distribution justice, the *Serrano* ruling (1971, 1976) mandated that public-school financing in California must be 'wealth-neutral' and that wealth-related spending differences between school districts should be eliminated. Conversely, while students with disabilities were awarded a right to a free and appropriate public education with the passage of the Education for All Handicapped Children Act in 1975, the federal government has not lived up to its promise of providing 40 percent of the average per pupil expenditure to help offset the cost of educating eligible students.

The justice of recognition presents as a phenomenon of greater complexity. According to Fraser, recognition justice can manifest in two ways, the affirmation of a specific identity *and/or* parity of participation for an identified group (Alcoff, 2007, p. 257). The former refers to the equal appreciation of different identities and groups within a society including for example, groups identified by race, gender, sexuality or ethnicity. The latter refers to the opportunity afforded identified groups to participate as equals in some specific arena(s) or in society at large. For example, the 1954 *Brown v. Board of Education* ruling, invalidating state laws that created systems of separate and unequally resourced public schools for black and white students, created a [de-jure] justice of recognition via identity affirmation for African-American students. However, as espoused by Bell (1976) on *Brown*, “Racial separation is only the most obvious manifestation of this subordination. Providing unequal and inadequate school resources

and excluding black parents from meaningful participation in school policymaking are at least as damaging to black children as enforced separation" (p. 488). Post-*Brown* African-American students continued to have unequal educational opportunity. That is, although *Brown* meets one explanation of Fraser's recognition justice in identifying African-American students as warranting a status equal with that of white students; Fraser's recognition justice, manifesting as parity of participation, goes beyond the absence of legal discrimination to provide the effective conditions for authentically being able to equally participate. *Brown* does not meet that definition.

Fraser recommends addressing misrecognition as a question of social status with recognition justice aiming to, "de-institutionalize patterns of cultural value that impede parity of participation and to replace them with patterns that foster it" (Fraser, 2001, p. 25). Thus, overcoming the subordination of the misrecognized student would require the establishment of marginalized students as full members of the school community, with participation opportunity consistent with that available to other students. A recent example of recognition justice is California Assembly Bill 1266 (School Success and Opportunity Act, 2014), in which K-12 public school transgender and gender-nonconforming students were identified as a group warranting protection from discrimination; and afforded opportunity to participate in sex-segregated school programs and activities, consistent with student-identified gender and irrespective of the gender listed on the pupil's records. This policy simultaneously affirms the status of transgender and gender nonconforming students as a legitimate group warranting unique consideration, and promotes parity of participation for the group in the school setting.

Of interest to the current study, the manifestation of recognition justice, most particularly as it pertains to equal education opportunity, typically requires some commitment of instrumental value. Fraser posits that the (in)justice(s) of distribution and of recognition, "are usually interimbricated so as to reinforce one another dialectically" (1995, p. 72). That is to say, "there is no redistribution without recognition and no recognition without redistribution" (Dumas, 2009, p. 82). Each justice is in some measure dependent on the other and is explained by the other. In the case of *Brown*, independent of the challenges of school desegregation, relief did not extend to the meaningful redistribution of resources in support of improved education experience for many poor African-Americans whether in segregated or de-segregated classrooms (Bell, 1995). In consideration of both justices, Fraser proposes a "bivalent" conception of justice in which distribution and recognition work together within an overarching framework and allow for both to have "distinct perspectives on, and dimensions of, justice" (Fraser, 1998). In public education, a bivalent conception of justice would provide recognition to children with disabilities as equal students in concert with adequate funding for the cost of their schooling. Similarly, a bivalent conception justice for African-American students in 1954, would have recognized African-American students as equal to white students *and* provided for equal resourcing. Fraser calls this the redistribution–recognition dilemma: "People who are subject to both cultural injustice and economic injustice need both recognition and redistribution" (1995, p. 74).

Fraser identifies two broad approaches to remedying injustices of distribution and recognition. The first, affirmative remedies, "[are] aimed at correcting inequitable outcomes of social arrangements *without* disturbing the underlying framework that

generates them" (1995, p. 82, italics added). The second, transformative remedies, "[are] aimed at correcting inequitable outcomes precisely by restructuring the underlying generative framework" (p. 82). Table 3 provides some examples of both as they might apply to contemporary issues in public education. Affirmative remedies, associated with

Table 3

Affirmative and Transformative Remedies Towards A Justice of Redistribution and A Justice of Recognition

REMEDY	REDISTRIBUTION	RECOGNITION
Affirmative	Allocation of supplemental education funding for students living in poverty	Recognition of specific and unique need and circumstance of students living in poverty as impeding parity of participation
	Summer reading program for students English Learners	Recognizing the ethnicity and culture of ELs as being equal in status to that of the dominant group and teaching literature reflective of EL culture
Transformative	Free universal healthcare	Recognition that all people independent of socioeconomic status have a right to be healthy
	Affirmative action in university admissions	Recognition that minority groups are denied parity of participation because of discrimination (historical and present) impedes equal educational opportunity

concepts of universal access and diversity of recognition, are consistent with the policies of a liberal welfare state and might include equity-focused funding reforms such as the LCFF. The focus is on change within the boundaries of the existing economic and social orders. Transformative remedies, questioning the legitimacy of existing economic and social orders, move towards deep structural changes within society. An example in public education would be the application of an affirmative action policy to promote minority student numbers in college admissions. Transformative remedies may include phenomena outside the realm and control of public education. For example, Noguera (2013) recognized the 2010 Affordable Care Act (ACA, "Obamacare"), as "the best educational reform in the past decade". The provision of free universal healthcare, eliminating well-being based on social class and related identities, would be a structural change in the United States.

The distinction between affirmative and transformative remedies is complicated and Fraser warns against underestimating the transformative potential of affirmative remedies. Affirmative remedies per Fraser, have possibility as "non-reformist reforms" - "Andre Gorz's expression for struggles that are affirmative by any strict measure, but that nevertheless give rise to transformative effects because they alter relations of power and thereby open a path for further struggles that become increasingly radical over time" (Fraser & Jaeggi, 2018, p. 174). For example, the lunch counter sit-ins of the 1960s in support of desegregation, began with just four students on February 1, 1960 in Greensboro, North Carolina. The sit-ins were an important affirmative innovation in support of, "tactical interaction and the pace of black insurgency"(McAdam, 1983, p. 735). Such protests contributed substantial momentum towards *transformative* change

and the eventual passage of the Civil Rights Act of 1964, which outlawed segregation in public spaces.

The researcher proposes that the LCFF provides opportunity for engaging Fraser's bivalent approach. With regard to the redistribution of education funding, the LCFF identifies several classes of students as requiring greater funding in order to succeed at school. It applies a weighted formula in recognition of a difference in need and circumstance and towards the promotion of equal educational opportunity. The shift in allocation priorities aligns with the theory of affirmative redistribution of resources. The recognition of difference in need and circumstance among students, in support of parity of education opportunity, is consistent with the values of the justice of recognition. The researcher submits that a critical quantitative analysis of student demographic characteristics and the relationship of identified groups to differentiated resource distribution under the LCFF, is a study in the imbricated justices of redistribution and recognition, and will speak to the bivalent strength of the LCFF for both justices, or lack thereof.

As is clear from the discussion above, Fraser's bivalent theory of recognition and distribution justice is complex and open to multiple interpretations. The following terms are operationalized for clarity within the present study and specific to the LCFF:

1. *Recognition justice as the affirmation of specific identity* refers to the recognition of a group as warranting consideration for targeted funding by inclusion of that group within the new funding formula. Affirmation of the identity of a named group is thus measured by that group being named as a "targeted" group within the formula.

2. *Recognition justice as parity of participation for an identified group* refers to how a targeted group within the formula counts as a determinant of LCFF resource distribution.

3. *Distribution justice* refers to the distribution of funding at the district level whereby districts with concentrations of targeted student groups are allocated greater funding as compared to districts with fewer targeted students. Distribution favoring targeted groups is also considered evidence of a progressive funding model consistent with distribution justice and vice-versa.

Critical quantitative methodology

The researcher will apply a critical quantitative analysis to examine the LCFF in its capacity as a tool for an imbricated justice of recognition and distribution. Critical quantitative methodology differs from traditional quantitative approaches in acknowledging the positionality of the researcher, in contextualizing data within a socio-historic framework, and in pursuing an investigative rather than an explanative analysis of the data (Baez, 2007; Gillborn, Warmington & Demack, 2018, Kincheloe & McLaren, 1994; Stage, 2007; Stage & Wells, 2014). A mixture of descriptive and inferential statistics is used to examine district-level student demographic data and related funding data.

Research Questions

The present study investigates whether the LCFF is working as an instrument of recognition and/or distribution justice by examination of the composition of groups targeted for supplemental funding through the LCFF and the relationship of identified groups to the distribution of funding resources. The district-level student groups being

studied for evidence of recognition (in)justice are defined by the California Department of Education (CDE) demographic data categories of EL, FRMP-eligible, and African-American students. Evidence of distribution justice is evaluated through investigation of the relationship of district level student demographic categories to the distribution of monies under LCFF and with consideration of how the three additional district level funding sources, Federal, Local and Other State funding, influence the distributive justice power of the LCFF. To enable comparison analysis as a measure of change between pre- and post-LCFF implementation towards the examination of LCFF distribution justice, data is gathered from all school districts across California 2012-2013, the final year of the old funding model, and from 2017-18, the most recent year for which LCFF data is available.

The three research questions are:

RQ1. How are school districts in California defined in terms of student demographic categories identified in the LCFF 2017-2018?

RQ2. How does the district-level per-pupil composition of LCFF, Other State, Federal, and Local funding compare pre- and post-LCFF (2012-2013 and 2017-2018)?

RQ3. How does district-level per-pupil funding for EL, FRMP-eligible and African-American students compare pre- and post-LCFF (2012-2013 to 2017-2018)?

Preview of the Findings

Research question one examines recognition justice as the affirmation of a specific identity by naming and measuring district level student demographic categories as targeted groups within the LCFF. Parity of participation for identified groups is measured by comparing the district level number of students in each of the targeted groups to the district's unduplicated pupil count. Results from research question one show that FRMP-eligibility is the defining factor in LCFF implementation. Affirmation of identity and parity of participation are confirmed for FRMP-eligible students. Due to the unduplicated count provision of the new formula and the dominance of FRMP-eligibility, student status as an EL does not trigger supplemental funding. Thus, while affirmation of identity is confirmed for ELs via inclusion in the formula, parity of participation is denied. With regard to African-American students, the results show that poverty as a student characteristic is not a reliable substitute for race with the formula. African-American students are afforded neither identity affirmation or parity of participation under the new funding formula.

Research question two measures distribution justice by comparing pre- and post-LCFF dollar allocations. Evidence of distribution justice includes concentration grant eligible districts being allocated greater funding than non-eligible districts; and post-LCFF changes in funding gaps between both types of district that favor concentration grant eligible districts. Results from research question two show that per student district level funding has increased significantly post-LCFF. Independent of dollar amount increases, evidence of the LCFF as a progressive funding model (distribution justice) include greater LCFF allocation to districts with higher concentrations of targeted

students, specifically FRMP-eligible students, as compared to districts with lower numbers of targeted students. Distribution justice for students in poverty under the new model is thus confirmed. The Federal allocation, although reduced post-LCFF, follows a similar progressive pattern, appropriating comparatively more dollars for concentration-grant districts. The Other State allocation is reduced post-LCFF with some evidence of regressive funding in applying greater reductions to concentration grant eligible districts compared to non-eligible districts. This is at odds with the intent of the LCFF and of interest given both allocations come from the State. Local funding follows a similarly regressive distribution. Both the Other State and Local funding are thus indicative of distribution injustice.

Research question three examines pre- and post-LCFF funding data for evidence of both recognition and distribution justice. Results from research question three largely mirror those of research questions one and two. Post-LCFF, funding is increased significantly for students in poverty, ELs, and African-American students respectively. Greater allocations for concentrations of ELs and African-American students are dependent on each groups' overlap with FRMP-eligibility. The distribution under the LCFF and Federal allocations evidences funding progressivity (justice) in favoring concentrations of targeted students. Conversely, the Other State and Local distributions are considered to be funding regressive (injustice).

Limitations of the Study

Quantitative models, even those using a critical approach, are limited to the degree that they consider only the statistical measure of resources while leaving aside more qualitative aspects of how resources are deployed in the education setting. The

researcher believes however that the quantitative model as applied may serve as a guide for further in-depth investigation. For example, if the distribution of resources is shown to correlate with identified groups, what can be learned from how that money is being used. Conversely, if a poor or no relationship is found between funding and targeted student groups, revision of the funding model might be indicated.

The current analysis is representative of school-sites only to extent that district-level demographic data and funding resource data are mirrored at the school-site level. While student demographic data on FRMP eligibility, EL status and ethnicity/race is available at the school site level, the distribution of funding at the district level is not prescriptive (categorical) and analysis of data at the district level does not determine if funding intended to provide targeted services actually reaches supplemental-grant eligible students. Much of the data cannot be disaggregated at the level of student. While the number or portion of students belonging to a given demographic category can be identified, membership in multiple categories cannot be disaggregated. Foster Youth, one of the supplemental-funding eligible categories under LCFF, are excluded from the current study as they comprise on average less than .5% of total enrollment and Foster Youth status is highly correlated with FRMP-eligibility.

Although data are not the answer to inequality (Ravitch, 2010), results from the study may be used to explore resource-based explanations for inequalities, to inform alternative funding models, and towards the creation of a baseline from which to evaluate ongoing and future education finance reform in California. Finally, the effects of public education funding model reform in California will be more fully revealed over time.

While the present study may contribute to some further analysis, a full evaluation will require a study of more long-range effects (Friedman & Wiseman, 1978, p. 215).

Significance of the Study

The LCFF as an equity-focused model in support of greater resources to targeted student groups, marked a significant departure from previous funding models in California. The present study will examine the LCFF in its capacity as a tool for recognition and redistributive justice, by examining the correlation between LCFF funding, and student groups targeted for supplemental funding. Lafortune, Rothstein and Schanzenbach (2016) have identified limited research on education finance reform as representing a major shortcoming in the literature (p. 4). This work contributes to the body of literature on education finance reform and specifically on equity-focused reform.

By situating student groups within a meaningful historical and cultural context, the present study expands on research using a critical quantitative methodological approach towards the analysis of large data sets. Building on Dumas' work (2009), the application of Fraser's theory of redistribution and recognition justice within the current study, provides an important critical approach for framing issues of funding and student demographics in public education. Results from this study can be used to inform education finance, policy, practice and further research.

Definition of Terms

The following terms have been operationalized for this study:

Average Daily Attendance (ADA) is defined as the total days of student attendance divided by the total days of instruction. Districts in California are funded per student ADA as opposed to per the number of enrolled students.

Base grant. The base grant refers to the amount of funding allocated to districts per student ADA under the LCFF.

Basic aid district. Some districts, known as"basic aid" districts, are funded entirely through local property taxes and receive no additional LCFF monies from state. They also retain any excess property taxes above the targeted revenue limit.

Concentration grant. For each student in one of the groups identified for the LCFF supplemental grant above a district-wide 55% threshold, the district receives a concentration grant comprising an additional 50% of the grade-span base grant.

Distribution justice for the purposes of this study refers to the allocation of greater funding resources to LCFF concentration grant eligible districts over non-eligible districts.

English Learner (EL). English Learner (EL) refers to a student at any grade level for which a primary language other than English is spoken in the home; and who has scored below "moderately developed" in the English Language Proficiency Assessments for California (ELPAC). The ELPAC is re-administered annually to measure progress towards, and achievement of, English language proficiency in reading, writing, listening and speaking. Up until 2018-19, English proficiency was determined by the California English Language Development Test (CELDT).

Ethnicity/race. Student ethnicity and race for state data collection is self-reported by parents/guardians as part of the public school enrollment process. Ethnicity comprises two categories - Hispanic or Latino, or Not Hispanic or Latino. Race includes the following categories: Black or African American, American Indian or Alaska Native,

Asian, Filipino, Hispanic or Latino, native Hawaiian or Pacific Islander, White, Two or more races (California Department of Education, 2019a).

Federal funding. This is the portion of district funding made up of the Federal allocation.

Funding adequacy is a term used in public education finance referring to the level of funding that is needed in order for the various student subgroups to achieve a minimal specified outcome. This outcome might be defined as a score on state standardized test or a proficiency level. The driving principle behind a funding adequacy model is that those students who score more poorly require *sufficient* funding in order to succeed academically.

Funding gap. Funding gap refers to the gap in funding between LCFF concentration grant eligible districts and non-eligible districts.

Horizontal equity is a term used in public education finance referring to the provision of the same ("equal") funding for all students.

Local Education Agency (LEA) refers to the school district operating the local public schools, elementary and/or secondary. A charter school may be classified as its own LEA or be part of a school district LEA.

Local revenue funding. This is the portion of the district funding made up of Local revenue monies.

Other State funding. Funding per pupil from the State in addition to primary funding category of LCFF.

Poverty, for the purposes of this study unless otherwise stated, is defined by eligibility for the federal Free and Reduced Meals Program (FRMP). The FRMP is a

federally assisted program administered by the United States Department of Agriculture (USDA). Children from families with incomes at or below 130% of the identified Federal poverty level are eligible for free meals (USDA, 2018). Those with incomes between 130% and 185% of the Federal poverty level are eligible for reduced price meals (USDA, 2018). This definition of poverty includes students labeled, "economically disadvantaged", in the present study.

Progressive funding. In the present study, funding resources that allocate more money to concentration grant eligible districts as compared to non-eligible districts are considered examples of progressive funding. Additionally, changes in pre- and post-LCFF funding gaps between both types of district that favor concentration grant eligible districts are considered examples of progressive funding.

Recognition justice as the affirmation of specific identity refers in the present study to the inclusion of a named student group as a group targeted for additional funding under the LCFF.

Recognition justice as parity of participation refers to how a targeted group within the formula counts as a determinant of LCFF resource distribution equal to that of other groups within the formula.

Revenue Limit funding. Prior to the LCFF distribution model, Revenue Limit funding, a combination of state and local property taxes, was the primary funding stream from the state.

Supplemental grant. The LCFF provides for a supplemental grant comprising an additional 20% of the grade-span LCFF base rate for each FRMP-eligible student and EL student. Please also refer to "unduplicated pupil count" below.

Total General Fund Revenue. The district-level sum total of four funding sources comprising LCFF monies, additional funding from the State, funding from the Federal government and monies from Local funding sources.

Unduplicated pupil count. The LCFF provides for a supplemental grant, comprising an additional 20% of the grade-span LCFF base rate, for each EL or FRMP-eligible student. Per the formula, students identified as being EL or FRMP-eligible, for the purposes of supplemental funding allocation to a school district, may be counted only once. This means that a student who is both EL and FRMP-eligible is counted towards one of the supplemental funding categories but not both (even though criteria for both is technically met). For example, a school district with 30% of all students identified as being ELs, 20% of whom are also FRMP-eligible, and 60% of all students identified as being FRMP-eligible, would receive supplemental grants at the 70% level instead of at the 90% level.

Vertical equity is a term used in public education finance referring to the differentiated provision of funding in response to perceived difference in need and circumstance among various student groups in support of equality (equity) of outcome. Needs may be identified in a variety of ways including the identification of student groups who score more poorly on state standardized tests.

Weighted funding formula refers to a public education funding allocation method in which all students are funded at a base level, and students identified as belonging to various subgroups are designated supplemental funding. The LCFF uses a weighted funding formula.

Summary

The system for funding public schools has historically produced funding inequalities that disproportionately negatively affect students in poverty and students of color. Education finance reform measures, originally focused on funding equality, have been directed in more recent decades towards weighted funding models in recognition of a difference in need and circumstance for various student groups. In California the 2013 LCFF was designed to provide additional revenues for students who are identified as living in poverty, English Learners and Foster Youth. The efficacy of the LCFF as an instrument of funding redistribution has not yet been determined. A quantitative analysis of the demographic characteristics of the groups targeted for supplemental funding and the relationship of those groups to resource distribution under the LCFF is conducted. Results from the research will help determine if the instrumental equity promise of the LCFF in support of targeted student groups is being realized.

CHAPTER TWO: REVIEW OF THE LITERATURE

Restatement of the Problem

There are great disparities in education opportunities between various students in public education. Differences in achievement are often rooted in a history of unequal opportunity, negatively affecting students in poverty and students of color disproportionately. A key component of the 2013 Local Control Funding Formula (LCFF) funding model is the allocation of supplemental resources to students identified as being economically disadvantaged, English Learners and Foster Youth, in recognition of the difference in need and circumstance among students, and towards the increase of educational opportunity for these student groups. Through examination of district level demographic and funding data, this dissertation examines the LCFF as a tool for equity in California public education.

Overview

The legitimation of the quantitative methodology used in this dissertation as aligning with a critical approach, supports the contextualization of the data as living within a socio-historical reality (Baez, 2007; Gillborn, Warmington & Demack, 2018, Kincheloe & McLaren, 1994; Stage, 2007). The purpose of this literature review is to establish the research as stemming from an education narrative rooted in historical and current social, political, and economic realities. This chapter builds on the summary history of public education presented in the Chapter One section on Background and Need. The intent is to draw attention to the imbricated history of recognition and distribution (in)justice that characterizes so much, past and present, of the public education system.

Recognition justice is the affirmation of a group identity by their inclusion as a targeted group in the new formula and further, by the participation of the included group as a legitimate determinator of formula allocation. In this dissertation, the identities of the groups of interest are defined by the California Department of Education (CDE) demographic categories and include African-American students, English Learners and FRMP-eligible students. Distribution justice is the allocation of resources in favor of targeted student groups. The allocation of resources under the LCFF and the relationship of those amounts to other district level funding resources is the first distribution of interest in this study. The relationship of district level funding resources and primarily the LCFF allocation, to the CDE identified demographic categories, is the second distribution of interest.

This literature review includes a section on African-American students, a group who is not afforded recognition warranting additional distribution under LCFF; and sections each on students in poverty and ELs, two populations eligible for supplemental-funding under LCFF. The final section of this literature review studies the research on education funding, establishing that money matters in public education, and examining the ways in which funding reform is measured.

Recognition and Distribution (In)Justice

African-American Students

> No nation can enslave a race of people for hundreds of years, set them free bedraggled and penniless, pit them, without assistance in a hostile environment, against privileged victimizers, and then reasonably expect the gap between the

> heirs of the two groups to narrow. Lines, begun parallel and left alone, can never touch. (Robinson, 2000, p. 74)
>
> I contend that deeply and inextricably embedded within racialized policy discourses is not merely a general and generalizable concern about disproportionality or inequality, but also, fundamentally and quite specifically, a concern with the bodies of Black people, the signification of (their) blackness, and the threat posed by the Black to the educational well-being of other students. (Dumas, 2016, p.12)

The story of African-American students and education is a narrative of recognition and distribution injustice. Afro-pessimism theory asserts that, "...the very technologies and imaginations that allow a social recognition of the humanness of others systematically exclude this possibility for the Black" (Dumas, 2016, p. 12). The absence of supplemental funding eligibility under LCFF for African-American students is remarkable given the sustained and pervasive failure within the public education system of African-American students when compared to other student groups; yet consistent with Dumas' assertion that, "any racial disparity in education should be assumed to be facilitated, or at least exacerbated, by disdain and disregard for the Black" (p. 17).

Ladson-Billings (2006) has argued that contemporary achievement disparities between African-American students and other groups can be explained in terms of the historic deficit in education resources, writing that, "the historical, economic, sociopolitical, and moral decisions and policies that characterize our society have created an education debt" (p. 5). The education of African-American children was largely prohibited during the period of enslavement (1619-1865). After emancipation,

freedpeople's universal demand for education served as the catalyst for establishing public schooling in the South. Schools were segregated and largely funded at the local level. This ensured a vast difference in educational experience between rich and poor communities; and schools for African-American students often had inadequate funding, old or dilapidated facilities, and deficient textbooks.

The Supreme Court case of *Plessy v. Ferguson* (1896) upheld the segregation of races in public facilities including schools, as long as the segregated facilities were equal in quality, the "separate but equal" principle. Equality of schooling was largely nominal however and separate facilities for African-American students continued to be inferior compared to those for white students; and particularly in the southern states, where African Americans most often lived in the poorest areas with the fewest resources. Sustained and pervasive racism across the nation ensured that segregated schools for African-American students were required in 17 states and optional in an additional four states up through the mid-20th century (Sutherland, 1955, p. 169). The landmark United States Supreme Court case *Brown v. Board of Education of Topeka* (1954) ended de jure segregation, with the Court declaring state laws establishing separate public schools for black and white students to be unconstitutional under the Equal Protection Clause of the Fourteenth Amendment. In its unanimous decision the Court said that, “In these days, it is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education” (*Brown v. Board of Education*, 1954).

The initial promise of *Brown*, the accordance of recognition justice with equal education treatment of African-American students and the end of segregation ‘with all deliberate speed,’ was not realized (Bell, 1976; Bell, 2004; Ogletree, 2004). Bell (1976)

posits, “The problem of unjust laws, as Professor Gary Bellow has noted, is almost invariably a problem of distribution of political and economic power” (p. 514). That is, judicial relief via *Brown*, lacking enforcement mechanisms at the level of local community in many parts of the country, did not manifest in substantive justice for African-American students. Many desegregation efforts were thwarted by a legacy of racist housing policies resulting in de facto school segregation at the neighborhood level. Public opposition to desegregation via bussing coupled with a lack of political will indicative of racism, supported maintenance of the status quo.

In California, no specific mention of race was included in the state’s earliest school laws. With regard to the education of African-American students, “it was assumed by all parties that such schooling would take place in a segregated, all-black institution” (Wollenberg, 1976, p. 10) and by the mid-1860s, separate schools for, “Negroes, Mongolians and Indians,” had been included into the law but as an option, rather than as a requirement (Wollenberg, 1976, p. 13). Separate schools for Asians and Indians were later included as option (Wollenberg, 1976, p. 17). In 1874, *Ward v. Flood* challenged segregated schools in the California Supreme Court and succeeded in establishing an equal right for African-American students to a public education, but lost under a “separate but equal” ruling (Wollenberg, 1976, p. 23). This was a full 22 years before the United States Supreme Court adopted “separate but equal” in the case of *Plessy v. Ferguson* (1896).

Schools in California were legally desegregated eight years before *Brown*, following the *Mendez v. Westminster School District* ruling in 1946. In *Mendez*, the state court ruled and the Ninth Circuit Court upheld, that separate educational facilities

primarily used to segregate pupils were inherently unequal and violated the Equal Protection Clause of the Fourteenth Amendment. Desegregation efforts in California have historically failed because of active resistance from white voters (Koenig, 2018). The 1971 Bagley Act, placing the responsibility on school districts to integrate, was repealed one year later in the wake of Proposition 21, the Wakefield Anti-Busing Initiative. A 1978 court-mandated integration plan for Los Angeles Unified School District (LAUSD) in the wake of *Crawford v. Los Angeles*, including mandatory student reassignment and busing, was rendered futile in 1979 following passage of the Proposition 1 anti-busing measure.

As recently as 2014, Orfield and Ee rank California, "as the most segregated state in terms of the share of blacks who attend majority white schools, a measure often used in the state during the civil rights era" (p. 27). That is, California had the lowest percentage of African-American students (6.3% in 2011) attending majority white schools and ranks third in the country at 17.9% for the lowest percentage of nonwhite students in a typical African-American student's school (Orfield & Ee, 2014). African-American students are six times more likely than white students to attend one of the bottom third of schools in the state (EdTrust West, 2010); and African-American students are disproportionately the subject of school disciplinary action. For example, in 2018 the statewide suspension rate for African-American males was 3.6 times greater than the statewide rate for all students (Wood, Harris & Howard, 2018).

Analysis of California Department of Education (CDE) data demonstrates a clear and frequently negative relationship between African-American status and student education outcome. Graduation rates for African-American students in California are

historically lower than the state average. In 2017-18, 73.3% of African-Americans graduated as compared to 83.0% of the total student population (CDE, 2018b). This data does not include high school dropout rates which are typically higher for African-American students. As detailed in *Figure 2*, the gap between African-American and FRMP-eligible students is fairly negligible for passing rates on state standardized assessments in English Language Arts 2003-2013. Passing rates on math, detailed in *Figure 3*, indicate that African-American students generally score below the FRMP-cohort in all but the final year of Star test administration. Scores for both group increase at similar rates over the course of the decade. The data indicate that any need for supplemental-funding to target academic levels would be comparable for both groups, with African-American students demonstrating a slightly greater need in the area of math.

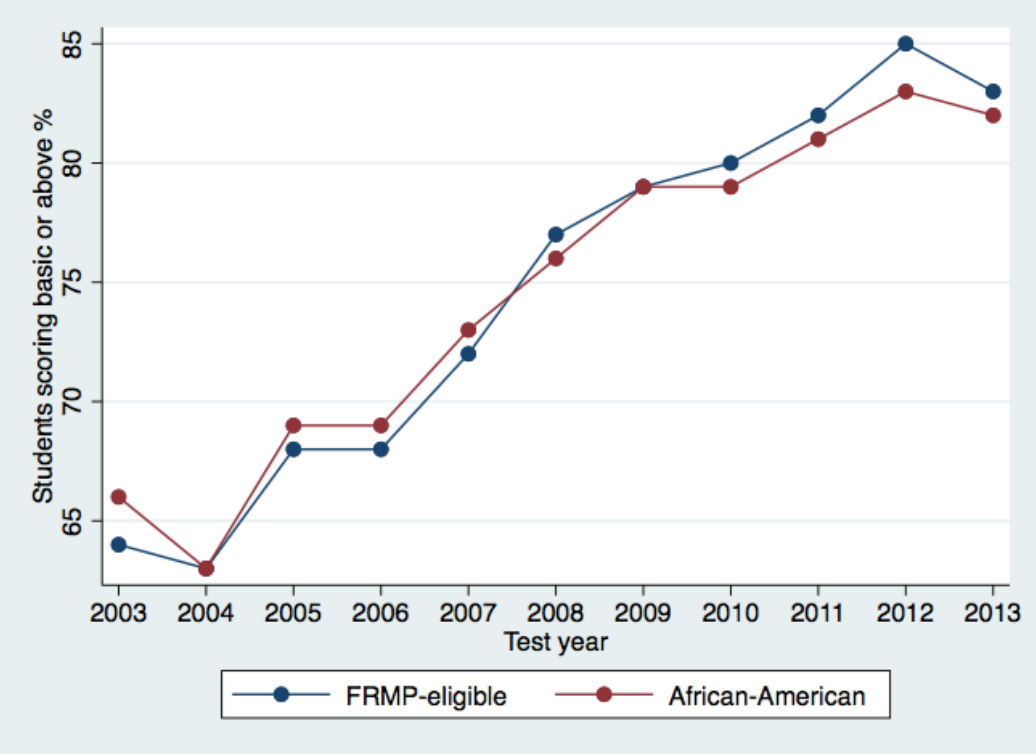

Figure 2. English Language Arts 4th Grade Star Test Scores

The Coleman Report (1966), noting an achievement gap between minority students and middle-class white students, placed responsibility for achievement or lack thereof, firmly at the feet of minority students and their families and communities:

> Whatever may be the combination of non-school factors—poverty, community attitudes, low educational level of parents—which put minority students at a disadvantage in verbal and nonverbal skills when they enter the first grade, the fact is that schools have not overcome it. (Coleman et al., 1966, p. 21)

The Coleman Report established a paradigm in the research whereby achievement gaps related to race (and to poverty), were interpreted as resultant of a deficit specific to the student circumstance, as opposed to any societal structural inequalities, or issues related

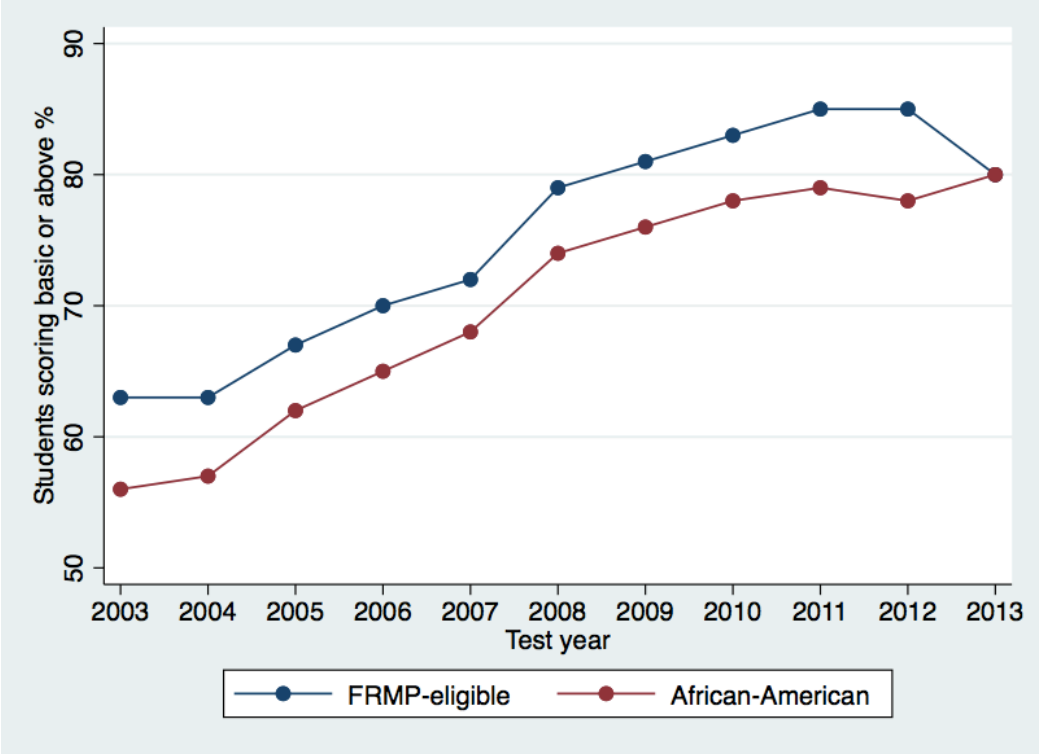

Figure 3. Math 4th Grade Star Test Scores

to schooling itself, such as poor instruction (Powers, Fischman, & Berliner, 2016, p.744). That is, "... the failure of large swaths of the Black population is purported to be a result of cultural deficits within the Black" (Dumas, 2016, p. 15). Under LCFF, disregard for the unique circumstance of the African-American student appears consistent with the sentiments expressed in the Coleman report. Milner (2013) has argued that many researchers have deliberately avoided studying race and education, "because they rationalize that issues of disparity and disproportionality in educational outcomes, for instance, are consequences solely of SES rather than race" (p. 11). Analyses of district level student demographic data will indicate what portion of targeted supplemental-funding categories comprise African-American students. Examination of the allocation of funding to the various demographic groups may provide some measure of the distribution injustice being afforded African-American students under LCFF.

English Learners

English Learners (ELs) are targeted for weighted funding allocation under the LCFF. That is, the school district they attend is eligible for 20% funding over the base rate for each student identified as EL. Currently in California, an EL refers to a student at any grade level for which a primary language other than English is spoken in the home; and who has scored below "moderately developed" in the English Language Proficiency Assessments for California (ELPAC). The ELPAC is re-administered annually to measure progress towards, and achievement of, English language proficiency in reading, writing, listening and speaking. Barrow and Markman-Pithers (2016) identified California, with 30% of the nation's EL student population, as serving the largest percentage of ELs in the nation (p. 162). In the 2017–18 school year, there were over

1.27 million ELs in California public schools comprising greater than 20% of all students and 86% of whom were identified as economically disadvantaged (California Department of Education, 2018c). Given the reclassification of EL students as English proficient over the course of their schooling, the number of EL students in lower grades (Kindergarten through third grade) is higher, at 36% (CDE, 2018c).

More than 40 percent of the students in California's public schools speak one of 60 languages other than English at home, with 83% of ELs speaking Spanish (Hill, 2018, pp. 2-3; United States Census Bureau, 2016). Most ELs are not foreign born and the majority of Spanish-speaking students are of Mexican descent (Hill, 2018, p. 3). The enrollment of Mexican immigrant children in California public schools started early in the 20th century and by 1927 made-up 10% of total public school enrollment (Wollenberg, 1976, p.111). This led to the establishment of separate schools across Southern California to education immigrant students. "Americanization" programs were implemented, aimed at achieving the assimilation of young Mexicans and Mexican-Americans into "the American way of life""(Wollenberg, 1976, p. 114). Up until the 1940s courts continued to allow the segregation of Mexican-American students into often inferior schools due to language or migrant status (Ortiz, & Telles, 2012).

Schools in California were desegregated following *Mendez v. Westminster School District* in which the state court ruled and the Ninth Circuit Court upheld, that Mexican-American children could no longer be discriminated against on the basis of ancestry and supposed "language deficiency". As such, Mexican-American students were afforded a measure of recognition justice. As a nation of immigrants, the United States has historically experienced great waves of linguistic diversity (Rumbaut & Massey, 2013).

In reviewing the history of language minorities in public education, Ovando (2003) concludes that, "language ideology in the United States has shifted according to changing historical events, and the absence of a consistent U.S. language ideology has enhanced the role of symbolic politics - the resentment of special treatment for minority groups" (p. 1). That is, opinions on language and education are typically an indication of a larger political conversation about immigration and identity, justice and injustice, in the United States.

In the first part of the 20th century, an English-only sink-or-swim approach to EL instruction generally blamed academic failure on the students themselves (Ovando, 2003, p. 6). A change in favor of supporting ELs occurred in 1968 with the passage of the Bilingual Education Act (BEA) which provided federal funding for bilingual education. Six years later, *Lau v. Nichols* led to the passage of the Equal Educational Opportunities Act (EEOA) in 1974. The *Lau* Remedies redirected school districts to provide strong versions of bilingual education for language-minority students to enable them to become bilingual, biliterate, and bicultural. In a measure indicative of the justice of distribution, school districts were required to provide evidence that they had effective programs to meet the academic, linguistic, and sociocultural needs of language-minority students. (Ovando, 2003, p. 10).

In 1994, Proposition 187 restricted the social and educational services that undocumented immigrants could receive in California. The passage of Proposition 227 in 1998, institutionalized an English-Only (EO) movement in the state and replaced bilingual programs with English immersion instruction and "pull out" English Language Development (ELD) (Gándara et al., 2000). Proposition 227 is interpreted by Ovando

(2003) as part of, “the politics of resentment toward massive immigration from developing countries in the 1980s and 1990s, especially from Asia and Latin America” (p. 14). Anti-immigrant and English-Only movements are largely consistent with recognition and distribution injustice. California, with the passage of Proposition 63 in 1986, remains one of 31 states who have adopted English as an official language (Liu & Stokhey, 2014).

More recent legislation has indicated a sea change within the state in attitude towards immigrants from Mexico and other central- and south-American countries. In 2013, the unique circumstance and need of ELs was accorded recognition justice with the LCFF identification of ELs as a class of students requiring supplemental funding beyond the funding base to succeed. In 2017, in response to national anti-immigrant sentiment and action, the California legislature passed Senate Bill 54, the California Values Act, limiting how much local law enforcement can cooperate with federal authorities to enforce immigration law. In the same year, the state superintendent of instruction has suggested that parents and students should be told that their schools are safe havens from deportation (Jones, 2017), and many school districts followed suit. One year earlier, Proposition 58, the California Multilingual Education Act, repealed Proposition 227, and provided for EL students to learn English through multiple programs outside of English immersion classes.

The research has demonstrated a clear and frequently negative relationship between EL status and student education outcome (Crawford, 2004; Vasquez Heilig, 2011; Gándara et al., 2003; Vasquez Heilig & Holme, 2013). Graduation rates for ELs in California are historically lower than the state average. In 2016, 72.6% of ELs graduated

as compared to 83.8% of the total student population (CDE, 2018b). Students identified as being ELs consistently score below students who are not ELs (Gándara et al., 2003; Hill, 2012). As detailed in *Figure 4* and *Figure 5*, although the percentage of ELs scoring basic or above increased annually 2003-2013, the gap between EL and Fluent English Proficient/English Only (FEP/EO) students remained similar across the decade in both English Language Arts and math. It is interesting to note that ELs like many other groups are typically afforded recognition in discussions on measures of academic outcome.

Gándara, Rumberger, Mezwell-Jolly and Callahan (2003) have made the case that, given the size of the EL cohort in California schools (26.4% in 2003), the academic failure of those students could well, "threaten the well-being of the state and its economy" (p. 3). The notion that the EL group is becoming, "too big to fail" resonates with Bell's theory of interest convergence. Distribution justice in the form of weighted funding for ELs may well be meeting the interests of the English-speaking power elite within California. English proficiency and educational attainment are associated with higher wages, and it is estimated that a person who speaks English poorly in the United States earns approximately 33% less than one who speaks English well (Barrow & Markam-Pithers, 2016, p. 165). Of interest, the difference in earnings is strongly correlated with differences in educational attainment. Persons with greater proficiency in English typically have more education and vice-versa (Barrow & Markam-Pithers, 2016, p. 165).

There is an overlap between students identified as living in poverty and students who are ELs. While the overall poverty rate for school-age children in California is 21%,

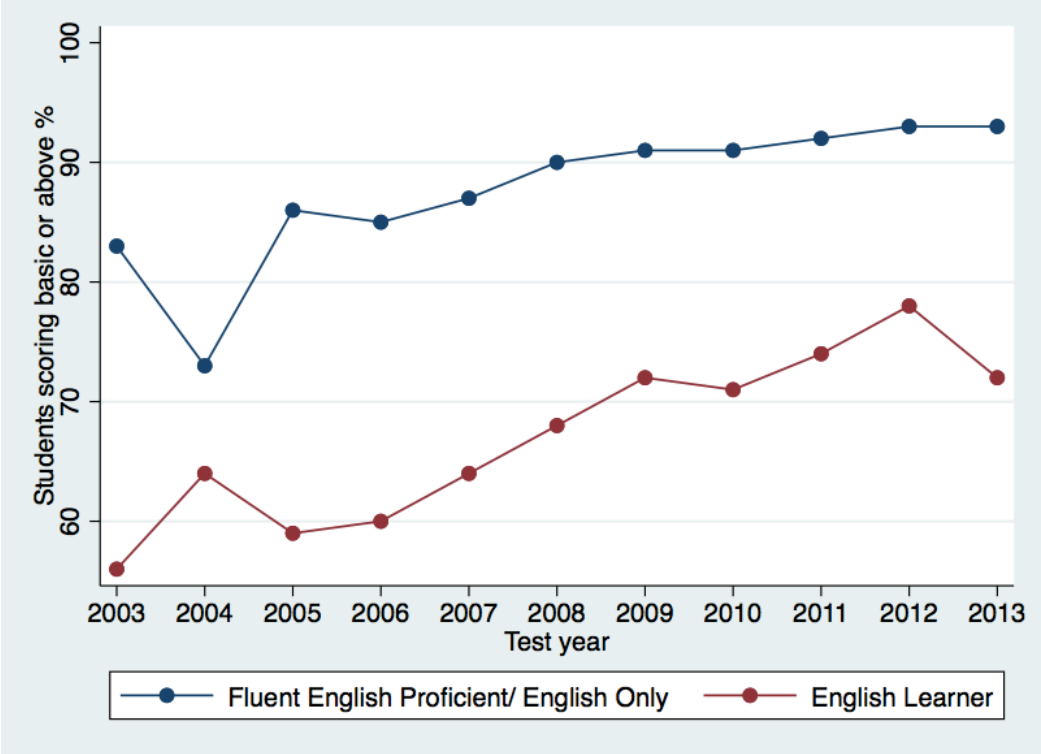

Figure 4. English Language Arts 4th Grade Star Test Scores

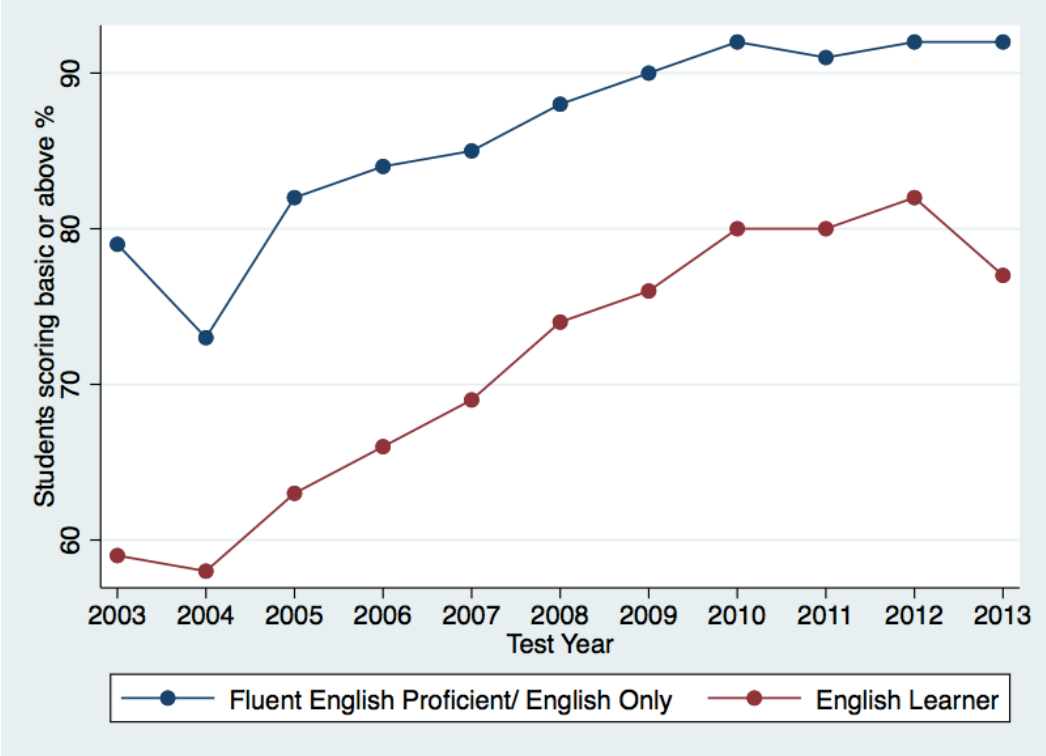

Figure 5. Math 4th Grade Star Test Scores

poverty rates for ELs ranges from 74% to 85% (Hill, 2012, p. 2). Given the average EL student faces both the disadvantages of poverty and the challenge of being an EL in a primarily English-language education system, it may be hard to distinguish which disadvantage affects educational outcome most (Barrow and Markman-Pithers, 2016, p.164). Data analysis at the school site level indicates that when EL and FRMP statuses are considered together, "as predictors of a school's proficiency rates, economic disadvantage appears to be more important than English fluency" (Rose, Sengupta, Sonstelie, & Reinhard, 2008, p. iv). That is, an increase in the percentage of FRMP-eligible students, holding constant the percentage of ELs, has a larger negative effect on achievement rates in state standardized assessment than does the reverse.

Although there is no agreement in the research on a specific amount of funding needed to augment education services to ELs, there is broad consensus that it costs more to provide an adequate education to ELs as compared to English Only students (Hill, 2012; Verstegen, 2017), and evidence indicates that, "low income students and English Learners require separate funding streams and those weights for both groups should not be combined" (Gandara & Rumberger, 2006). The latter is important within the context of the LCFF. Given the overlap between students who are ELs and students living in poverty, the unduplicated count is significant as it does not allow for 'double' supplemental funding for students eligible under two categories. Thus, ELs may be short-changed under LCFF, receiving some measure of recognition justice but subject to allocation injustice.

California changed its accountability system to align with the LCFF in 2013-14 and progress for ELs is measured by the state at the school site and district level on five

indicators including high school graduation rates, college and career readiness, suspension rates, performance on state standardized assessments and EL reclassification rates. As four to seven years are typically needed for academic English language proficiency (Hopkins et al., 2013), assessing progress data is difficult given individual students begin with differing language skills and advance through the grades acquiring English along a continuum of proficiency. Determining the impact of LCFF on ELs is further complicated when poverty status is also a consideration. The researcher proposes that measuring recognition and distribution justice afforded under LCFF through analyses of district level student demographic and funding data will provide a necessary foundation for further examination of LCFF efficacy.

Students in poverty

As mentioned above, following *Mendez v. Westminster*, legal segregation in California schools was abolished when a repeal of the law was signed by then Governor Earl Warren, seven years prior to *Brown v. Board of Education* in 1954. Although the decision rendered in *Brown* emphasized racial equality, the focus on fiscal equality, and its potential implications on academic outcomes, became at least as important, if not more so, after the *Brown* decision became law. That is, a focus on distribution justice replaced recognition justice as the primary target of reform efforts. Shields, Newman and Satz (2017), documenting unsuccessful efforts to realize greater racial integration through the Courts, conclude that, "given the judicial retreat from remedying de facto segregation, many advocates have shifted their attention to the school finance system".

The Supreme Court decisively declined to establish a national mandate for school funding equality when it heard *San Antonio v. Rodriguez* in 1973, concluding that

education is not a fundamental right under the United States Constitution; denying relief to appellant claims that unequal education funding violated a fundamental right and the Equal Protection Clause of the Fourteenth Amendment; and implying rather that one might turn to individual states for relief (Dayton and Dupre Proffitt, 2006, p. 25). In California, up until 1970, school districts were primarily funded through local property tax. Notwithstanding that the state was one of the leading average per-pupil spenders in the nation at the time (Caroll et al., 2005, pp. xxvii-xxviii), the dependence on local property taxes generated great distribution injustice in significant resource disparities between rich and poor neighborhoods. For example, the California Legislative Analyst reported that the assessed tax base valuation per elementary school student 1968-69 ranged from a low of $125 to a high of $1,156,872 (California State Government, 1970, p. 192).

In 1968, parent John Serrano filed suit against the state of California, arguing that the rights of students in low-wealth districts were being violated under the state Constitution's guarantee of equal protection, because they were being denied an equal education opportunity. Serrano was essentially seeking distribution justice on behalf of all public-school students *Serrano v. Priest* (1971), in pursuing public school funding equality based on the equal protection clause of the California and United States constitutions, built directly on the recognition justice (civil rights) foundation established by *Brown* (Dayton & Dupre Proffitt, 2006). Of significance however, in the face of post-*Brown* backlash, racial status was deliberately not a variable in the pursuit of economic equality. The Los Angeles county school districts chosen for funding comparison in *Serrano*, Baldwin Park at $577 per pupil and Beverly Hills at $1232 per pupil (*Serrano v.*

Priest, 1971), both had a very low percentage of residents of color, at 2% and 3.2% respectively (United States Census Bureau, 1970). Funding allocation was thus presented independent of racial status; distribution justice independent of recognition justice.

The initial *Serrano* ruling in 1971, later upheld by the California Supreme Court in 1976, found in favor of the plaintiff. The court mandated that public-school financing in California must be 'wealth-neutral' and that wealth-related spending differences between school districts should be eliminated. Education funding shifted from a local property tax basis to a funding model that was controlled by the state, and with a focus on equalizing per-pupil funding across the state. The state established revenue limits that capped the amount of per-pupil revenue that each school district could receive from taxes with the state making up any difference in lower wealth districts between an increased revenue limit target and funding from local property tax. The plan was to increase the revenue limits for low-wealth districts faster than for high-wealth districts, thereby closing the gap between them over time (Kirst, 2007, p. 3).

Senate Bill 90 had been designed to change how schools were financed in California from a local property tax basis to a state-controlled equality-based funding-model. However, before the gaps between richer and poorer districts were closed, California voters passed Proposition 13 in 1978, severely reducing local property rates to 1% of the assessed value of residential and commercial property, and resulting in a 60% loss in property tax revenue (Freelon, Bertrand, & Rogers, 2012, p. 155). Given neighborhoods are often divided along racial and socioeconomic lines, Proposition 13 has potential for interpretation as a twin manifestation of recognition and distribution injustice. The Legislature responded with Assembly Bill (AB) 8 (1979), articulating the

division of statewide property taxes among cities, counties and school districts (Canfield, 2013, p. 27). Property tax earmarked for education was collected at the county level, sent to the state level and then distributed at the school district level, with the state making up the balance to reach an identified minimum per-pupil funding level.

The state thus assumed primary responsibility for funding public education, and California schools' fortunes became linked to the state's fluid sales and income tax revenue streams. Short of tax revenue following Proposition 13, overall per-pupil funding from the state began to decline, moving California state education funding from 7th highest in the nation to 19th place by 1980 (EdSource, 2018b). Tax-based funding equity per *Serrano,* although established in California by 1983, did not result in equal outcomes for different student groups. For example, Downes' (1992) analysis of sixth grade students scores on 1976-77 and 1985-86 California Assessment Program (CAP) state test, indicated that the performance of students in poorer districts had not improved relative to the performance of students in wealthier districts (p. 412). Downes proposed this was due to parents in affluent districts providing additional resources (money and time), in effect neutralizing the effects of finance reform, and ensuring the maintenance of their wealthier position relative to poorer neighborhoods (1992, p. 416). Other research has concurred that a pattern of private fundraising in local communities has generated resource disparities across districts and schools across California (Ladd, 2008, pp. 408-409).

In an effort to stem the overall decline in funding, California voters passed Proposition 98 in 1988, constitutionally setting a minimum funding guarantee for public education at about 40 percent of the state budget (Taylor, 2017). However, Proposition 98 allowed for education budget deferrals and reductions under certain conditions, and

funding remained low relative to other states. Beginning in 2007, the Great Recession saw a decline in education funding and ultimately reduced tax revenues saw California cut state education funding by about 20% (Weston, 2013). By 2011 per-pupil funding in California was the lowest in the United States (EdSource, 2018). While it is challenging to argue distribution injustice when none are receiving sufficient resources, as referenced above, more affluent communities compensate on some level for inadequate funding in public education. Evidence suggests that lower funding disproportionately affects students in poverty and students of color (EdTrust West, 2010). Significant private fundraising to offset budget shortfalls is more likely in wealthier communities, and increases disparities across districts and schools in terms of available resources (Brunner & Sonstelie 997; Brunner & Imazeki 2005; Ladd, 2008).

Milner (2013), writing on poverty and public education concluded that, "There is no common understanding or conceptualization of what a collective body of researchers means by poverty" (p. 42). His conclusion speaks to both in-school and outside-of-school factors, and the complexity of how the various factors may affect students in poverty. Milner notes that quantitative research in the field of education has historically used participation in the Free and Reduced Meals Program (FRMP) as the measurement of poverty. FRMP-eligible students are targeted for weighted funding allocation under the LCFF. That is, the school district they attend is eligible for 20% funding over the base rate. Thus, students in poverty are identified as being unique in circumstance and need such that they are accorded the justice of recognition status under the LCFF.

The FRMP is a federally assisted program administered by the United States Department of Agriculture (USDA). Children from families with incomes at or below

130% of the identified Federal poverty level are eligible for free meals (USDA, 2018). Those with incomes between 130% and 185% of the Federal poverty level are eligible for reduced price meals (USDA, 2018). In 2018, a family of four with an income of $24,600 or less was considered as being in poverty in the 48 contiguous states. The 130% guideline allowed a family of four to have income up to $31,980 and remain eligible for free meals at school, and up to $45,510 to remain eligible for reduced price meals.

There are several limitations in using federal poverty guidelines as a measurement of privation. Of primary concern, a national poverty index fails to account for state and regional cost of living differences (Hauser, 1994; Curran, Wolman, Hill, & Furdell, 2008). For example, using a Regional Price Parities (RPPs) index designed to compare buying power across the United States, with RPPs being expressed as a percentage of the overall national price level, 2016 costs in California at an RPP of 114.4, were on average almost 15% higher than the rest of the nation (Bureau of Economic Analysis, 2016). Within the state, the cost of living can also vary greatly, as detailed in Table 4. Most especially, rents in larger urban areas are unreasonable for persons at the Federal poverty level.

FRMP does not take into consideration, "parental education, neighborhood resources, residential stability, and other family background characteristics associated with educational experiences and outcomes" (Domina et al., 2018, p. 2). A further limitation with using FRMP as a proxy for poverty is that the data do not provide for consideration of degrees of poverty (Michelmore & Dynarski, 2017). While $31,980 is the 2018 cutoff point for a family of four to be fully eligible, and all students meeting the eligibility threshold in California are categorized as living in poverty, there is no

Table 4

California 2016 Regional Price Parities by Metropolitan Area

Location	Regional Price Parity		
	All Items	Goods	Rent
United States	100.0	99.0	101.7
Bakersfield, CA	96.7	95.4	91.7
Fresno, CA	96.3	85.4	90.1
Los Angeles-Long Beach-Anaheim	117.7	104.8	165.4
Redding	97.4	95.4	95.1
Sacramento-Roseville-Arden	102.0	95.4	117.6
San Diego-Carlsbad	116.3	100.1	167.6
San Francisco-Oakland-Hayward	124.7	110.7	190.9
San Jose-Sunnyvale-Santa Clara	127.1	110.4	213.3
Maximum	127.1	110.7	213.3
Minimum	96.3	85.4	90.1
Range	30.8	25.3	123.2

Note. Data from Bureau of Economic Analysis (2016).

accounting for families with less income. For example, some research indicates that using an income-to-poverty ratio, greater than 20 million Americans have incomes of less than half of the federal poverty threshold (Coley & Baker, 2013, p. 4). In addition, FRMP data does enable analysis of poverty over time. Brooks-Gunn and Duncan (1997), studying longitudinal data on the effects of poverty found that, "Children who live in extreme poverty or who live below the poverty line for multiple years appear, all other things being equal, to suffer the worst outcomes" (p. 55).

The literature indicates that people residing in areas of concentrated poverty, measured as 40% or more of the census tract area population living below the federal poverty threshold, "are subjected to the double burden of being poor in a highly disadvantaged neighborhood" (Kneebone & Nadeau, 2015, p. 19). According to Noguera

(2011), “In cities and towns where poverty is concentrated, rates of inter-personal violence tend to be higher, health indicators tend to be more negative, stress and over-all psychological and emotional well-being tends to be substantially worse (p. 10). The LCFF includes a concentration grant component. For each student in one of the groups identified for the LCFF supplemental grant above a district-wide 55% threshold, the district receives a concentration grant comprising an additional 50% of the grade-span base grant. Depending on the demographic makeup of a school district, the concentration grant can increase district resource allocation above base funding by up to 42.5% under LCFF.

Students in poverty continue to be overwhelmingly concentrated in the lowest-achieving schools in California (EdTrust West, 2010) and consideration of concentrations of poverty as warranting additional funding is consistent with the research. The measure of the concentration grant can thus be considered a hardy metric of distribution justice. "Salmon indicated that the concentration of children in poverty has a linear relationship with cost per pupil, where cost per pupil rises with the percentage of low-income children (Alexander and Salmon, 1995, p. 218). Downes and Pogue (1994) also found that a greater density of "at-risk" children requires greater per-pupil funding. Clune’s (1997) plan for education adequacy achievement stated that “...high-poverty schools would require special aid because of the concentration of poor students even if an equal number of poor, low-achieving students were scattered in low numbers in other kinds of schools” (p. 344). Similarly, Alexander & Wall (2006) state that, "Adequate costs of instruction depend on both the concentration of low-income children and the degree of poverty of

children...the schools or districts with high percentages of the very poor will need greater financial resources" (p. 303).

Notwithstanding measurement constraints, the research has demonstrated a clear relationship between FRMP eligibility (poverty) and student achievement as measured by standardized test scores (Milner, 2013, p. 42). In general, students living in poverty consistently score below students not living in poverty. For example, in 2013, the final year of California's administration of the Standardized Test and Reporting (STAR) assessment, 77% of students identified as being "not economically disadvantaged" in grades 2-6, scored proficient or advanced in English Language Arts, compared with 45.6% of students identified as being "economically disadvantaged", a difference of 31.4% in passing rate between the two groups (California Department of Education, 2018b). The gap is chronic when one considers that a decade earlier, in 2003, the difference was 33.8% (CDE, 2018b). This represents a crisis in the state's public education system considering 61.5% of the K-12 student population in California were identified as economically disadvantaged during the 2017-18 school year (CDE, 2018c).

As mentioned above, a key tenet of the American dream is that with enough hard work and an attitude of perseverance, anybody can succeed, independent of circumstance of birth and social class. Ladson-Billings and Tate (1995) have argued that the social reproduction of wealth and status via inheritance completely undermines the legitimacy of the meritocracy argument. That is to say, distribution injustice is sustained generationally. Students from differing backgrounds simply do not have the same opportunities for success. Reardon (2011a), writing on the relationship between the achievement gap and rich and poor, found that while greater educational attainment is

positively related to greater adult earnings, family income is increasingly predictive of academic achievement (p. 27). Reardon continues

> At the same time that family income has become more predictive of children's academic achievement, so have educational attainment and cognitive skills become more predictive of adults' earnings. The combination of these trends creates a feedback mechanism that may decrease intergenerational mobility. As the children of the rich do better in school, and those who do better in school are more likely to become rich, we risk producing an even more unequal and economically polarized society (2011a, p. 27).

The United States Department of Education reports that for most children identified as being "disadvantaged", achievement gaps begin before they start school and grow as they move through the grades (The Equity and Excellence Commission, 2013, p. 30). Outside-of-school factors related to poverty that negatively affect student outcome are well documented and according to Berliner (2009) include

> (1) low birth-weight and non-genetic prenatal influences on children; (2) inadequate medical, dental, and vision care, often a result of inadequate or no medical insurance; (3) food insecurity; (4) environmental pollutants; (5) family relations and family stress; and (6) neighborhood characteristics (p. 1).

It is in understanding this context that Noguera (2013) could describe the Affordable Care Act (ACA, "Obamacare") as, "the best educational reform in the past decade". The belief that all people independent of socioeconomic status have a right to healthcare is an issue of great recognition and distribution justice.

It is problematic and contradictory that the path of education, purported as a way out of poverty is compromised, as the research shows, by living in poverty. The issue is further complicated by a history of government policies that focus on events inside of schools to compensate for failure to address outside-of-school factors, such as inadequate healthcare systems. Kantor and Lowe (1995, 2013) provide a history of the federal government's utilization of education reform as a solution to poverty and convincingly argue that, "Belief in capacity of public education to redress unequal opportunity and eliminate poverty is one of the most distinctive features of American social policy" (2013, p. 25). Kantor and Lowe detail how, following World War II there appeared a window of opportunity during which the creation of a social democracy modeled after European ideal of the welfare state (social security, unemployment benefits, national health insurance) seemed a possibility in the United States. They cite the failure of this ideal to materialize, as the driving force behind a Federal reliance on education as a vehicle for addressing poverty: "Absent a genuine social democratic politics, education thus became a conscious tool of government social and economic policy in the 1950s and 1960s" (1995, p. 7).

Federal government programs aimed at addressing poverty, and attempting some recognition and distribution justice through education, include the National School Lunch Program in 1946, and later, as part of the War on Poverty, both Head Start (1964), and Title I of the Elementary and Secondary Education Act (ESSA, 1965). While school-based government programs provide some relief to students living in poverty, the capacity of education alone to compensate for greater societal inequities is limited. The apparent failure of public schools to meet the needs of all students has, at various times,

served to fuel criticism of public education teachers and to undermine the public-school system (Kantor and Lowe, 2013). Kumashiro (2012) describes policies including advocating for a longer school day and merit pay for teachers, as being incorrectly, "based on the assumption that teachers are to blame for all that is wrong with education" (p. 8). Such criticisms shift the focus from larger societal issues of recognition and distribution injustices; and fail to consider the comparative fiscal restraints within which the public school system works. For example, depending on the metric applied, California ranks anywhere from 22nd to 46th on public education spending, out of the 50 states and Washington, D.C. (Fensterwald, 2017). As a percentage of the personal income earned by its residents, 2015-16 data indicate that California ranked 37th in the nation (Fensterwald, 2017). Using gross state product to measure a capacity to tax, California was 3rd from the bottom in 2015, spending 2.6% of its taxable resources on public schools, compared with the national average of 3.4% (Harwin, Lloyd, Riemer, & Yettick, 2016).

Notwithstanding the influence of outside-of-school factors on student achievement, particularly for students identified as living in poverty, policy makers would be remiss in not considering the powerful influence of schools. Noguera (2011) stresses that the research on poverty and academic achievement, "never suggests that poor children are incapable of learning or that poverty itself should be regarded as a learning disability….research suggests that poor children encounter obstacles that often adversely affect their development and learning outcomes" (p. 10). Many school finance reforms in recent decades have focused on allocating resources to students in poverty, and related research indicates that greater and targeted funding can lead to increased

academic outcome for students from low-income families (Chingos & Blagg, 2017; Jackson, Johnson, & Persico, 2016; Lafortune, Rothstein, & Schanzenbach, 2016). One of the key intents of the 2013 Local Control Funding Formula (LCFF) is to fund schools more equitably based on identified student need; including a weighted student formula that provides additional monies for students who are identified as FRMP-eligible. This dissertation study will evaluate the allocation of funding to districts and its relationship to the FRMP-eligible student count as a measure of recognition and distribution justice towards educational equity for students in poverty.

Public education funding

Nationwide, interest by legislators in regulating and holding accountable the public education system gained momentum throughout the 1980s, kick-started by the 1983 release of the report A Nation at Risk, and its' proclamation that the American education system was failing to educate students in a world characterized by fast economic and social changes (National Committee on Excellence in Education, 1983). A greater capacity to manipulate data revealed pervasive disparities in the new measures of academic achievement across different demographic groups, and the achievement gap between groups became the focus of much of the research. Increasing data capacity supported identification of students by demographic category primarily for the purpose of association with a given measure of education outcome.

California embraced the standards-based reform, essentially an accountability movement, establishing content standards in core subjects in 1995 with the passage of the Academic Achievement Act. In 1999, state legislators passed the California Public Schools Accountability Act (PSAA), which ensured that content standards were used,

and established the Academic Performance Index (API) as a measure of standards-based achievement. The cornerstone of PSAA was the Standardized Testing and Reporting (STAR) state assessment system. The data from the state standardized assessment, as detailed Table 5 reflected nationwide trends on gaps between demographic groups along economic and racial lines; supporting the status recognition of groups in terms of academic success or failure.

The standards-based reform movement and the passage of "accountability" legislation, such as No Child Left Behind (NCLB) Act in 2001, more clearly defined adequate public-school performance in terms of targets for student academic achievement (Dayton & Dupre Proffitt, 2006, p. 29). In California, following the *Serrano* ruling (1971, 1976), a horizontal funding model had been implemented as a neutral formulation in which there was no association between per pupil resources and the characteristics of various student groups, or the characteristics of the local community. Often called, “the

Table 5

California Standardized Testing and Reporting (STAR) English Language Arts (ELA) Mean Scaled Scores 2003

Demographic	3rd grade	4th grade	5th grade
Economically disadvantaged	323.9	339.0	332.0
Non-economically disadvantaged	352.7	363.0	353.4
English Learner	293.5	310.3	300.0
Fluent English proficient/English Only	340.0	352.2	343.8
African-American	309.4	324.8	318.2
White	351.8	362.1	353.0

Note. Data from the California Department of Education, Data Files. (2018b).

equal treatment of equals" in school finance literature (Toutkoushian & Michael, 2007, p. 396), a horizontal funding model focuses on inputs with an implicit belief that the only limitation on helping students learn (outputs) might be the availability of (equal) resources to meet the cost of a basic education. Consistent with the philosophy of the 1966 Coleman report, differences in individual student needs are largely ignored as a function of variables outside of school responsibility or control. Attention is paid to student demographic categories such as ethnicity/race, EL status and poverty status, as they relate to student achievement or lack thereof.

Crampton and Thomson (2011), commenting on horizontal funding note that horizontal equity is a limited measure given the complex funding needs of different types of students (p. 186). That is, students are not accorded recognition justice and related funding (distribution justice) specific to their situation and need. Indeed, a horizontal funding model relies on student differences remaining unrecognized. This becomes untenable however when outcome measures are collated by demographic category and disparities between student groups become pervasive over time. A further challenge with the horizontal funding model is that cost indices related to differences at the local level, such as the cost of labor, are not taken into consideration. As most education costs are related to staffing, regional income variation greatly affects the actual value of the dollar across different parts of the state.

Notwithstanding its shortfalls, a horizontal funding model can go some way towards addressing per-pupil funding inequity by disrupting unfair distribution associated with funding tied to local tax revenues, narrowing what Kozol (1992) labeled the "savage inequalities" between rich and poor communities. The research indicates that inequality

in per-pupil spending decreased between districts within states in the years following court-ordered reforms mandating equal funding for all students (Murray, 1998; Card & Payne, 2002; Corcoran et al. 2004; Corcoran & Evans, 2008). Although established in California by 1983, tax-based funding equity per *Serrano* did not result in equal achievement for different student groups indicating a more nuanced relationship between funding and education outcome. It should be noted however, that the assigned funding per pupil was low to begin with. As compared to other states, California moved from being 14th in per pupil spending in 1970, 29th in 1990 and 38th in 2010 (EdSource, 2018b). Indeed, in 2010, California spent $10,061 per student, less than half of what New York spent at $20,743 (in 2nd place nationwide) (EdSource, 2018b).

Many studies can be cited in support of Coleman's original assertion denying the relationship between education resources and student outcome. Hanushek (1986), in his review of production and efficiency in public schools concludes, "that there is at best an ambiguous relationship and at worst a negative relationship between student performance and the inputs supplied by schools" (p. 1148). Hanushek continued with this theme in various publications throughout the following decades. Three years later, the research literature on expenditure relationships in schools and consequent policy implications, Hanushek (1989) concluded that "expenditures are not systematically related to performance" (p. 49). Hanushek (1989) further specifies that items typically related to education cost, class size and teacher experience, are per his review, not related to student outcome and in his summary recommends that, "policies should not be dictated simply on the basis of such surrogates" (p. 49). In a more recent review of 400 studies indicating no consistent relationship between resource input and student performance, Hanushek

(1997) qualifies, “The existing work does not suggest that resources never matter, nor does it suggest that resources could not matter” (p. 156). A major challenge and limitation in the research is thus acknowledged - funding levels do not constitute funding well spent.

Critics of the Coleman Report point to statistical flaws in the research design and analysis, and to the inclusion of an overrepresentation of suburban schools and an underrepresentation of schools in large cities (Jimenez-Castellanos, 2013, p. 48). Verstegen & King (1998) in their review and analysis of production-function research (research on the relationship on resource input and student outcome) since the 1960s, concluded that there is a strong relationship between funding in schools and earnings as an outcome measure (pp. 244-245). They caution that a resource allocation model that works well in one school (as evidenced by positive student outcome), does not necessarily transfer successfully across education settings. Further they note that based on the research, “it is clear that schools cannot be effective with resources they do not have” (p. 262).

Hedges et al. (2016) in their meta-analysis of studies examining that relationship between school funding and student outcome, found that a diversity of methods have been used and conclude that, “the way the question is asked, and the methods used to answer it, is shaped by history, as well by the scholarly, social, and political concerns of any given time” (p. 143). While they claim the literature, “too diverse and too inconsistent to yield reliable inferences through meta-analysis” (p. 143), they do identify two primary traditions in education finance policy. The “efficiency” approach to education finance finds it roots in the Coleman Report (Hedges et al., 2016). Consistent

with a horizontal funding model in which each student receives equal funding, this approach "seeks to evaluate programs and policies in order to promote the most effective and resource efficient among them" (p. 150). Measurement involves interpretations of economic efficiency, "a concept that has a very clear meaning in textbook analyses of the theory of the firm but that becomes quite cloudy in the world of public schools" (Hanushek, 1986, p. 1150).

Knoeppel and Dela Sala (2018) discuss the elusiveness of efficiency when measured in terms of school district productivity, investment, and yields on return - terms more consistent with the discipline of economics. They conclude that, "efficiency as productivity can serve as an educational goal that complements other school finance goals like equity and adequacy" (2019, p. 395). Efficiency per se does not address needs related to the justice of equity and adequacy. Ladd (2008) cautions, "While it is reasonable to call for the use of best practices in estimating the costs of an adequate education, it seems unreasonable to calculate the required level of resources based on an assumption that there will be dramatic gains in the efficiency with which those resources will be used" (p. 414). Even the most stringent efficiency will not alleviate basic funding insufficiency within a district.

A second approach to education finance identified by Hedges et al. (2016) and labeled the "compensatory" approach, "primarily seeks to design and implement programs and policies that improve education for students in poverty and minority students" (p. 150). This funding model comprises vertical equity, a term used in public education finance referring to the differentiated provision of funding in response to perceived differences in need among various student groups. According to Berne and

Stiefel (1984), vertical equity is the appropriate unequal treatment of unequals. Bull (2007) stated that social justice in school finance is significantly a matter of vertical equity, that is, of providing unequal distribution of resources to enable schools to meet the varying conditions of children and their families. Needs may be identified in a variety of ways including student subgroups who score more poorly on state standardized tests.

Weighted funding formulas, such as the LCFF, are considered a model of vertical funding. Theoretically the weights for each group reflect the average differential costs required to support a specific (average equal) level of education outcome for students in each group: "With equity defined in terms of the equality of outcomes, equitable resource distribution would, in theory, be one in which all students have sufficient resources to achieve similar educational outcomes" (Ladd, 2008, p. 404). That is, resource allocation would be reflective of identified student needs; recognition and distribution justice work in sync. In the LCFF, a base funding amount is allocated for all students; a supplemental grant of 20% over base amount is allocated for English Learners, FRMP-eligible students and Foster Youth; and a concentration grant comprising 50% of base grant is allocated for all supplemental grant eligible students over a 55% threshold.

Measurement of the vertical model typically includes an examination of any linear relationship between group-specific funding and outcomes, and a decrease in the achievement gap between the group(s) receiving greater resources and the highest-performing group to which they can be (historically) compared. That is, do recognition and distribution justice work in concert to achieve greater equity in student outcome. Ultimately, the absence of a relationship between academic performance and student demographic would signal the efficacy of a weighted funding formula (Berne & Stiefel,

1994, p. 405). Of import, a vertical funding model does not mean an adequate funding model. Failure of weighted student funding may be due to inadequate funding, "potentially stigmatizing individual students, and placing so much focus on individual schools" (Ladd, 2008, p. 402). It should be noted, also, that within each group targeted for additional monies, outcomes could differ because of differences in factors under the control of students, such as their level of effort (Ladd, 2008, p. 411).

In their examination of 1993 to 2013 public education funding across states, Baker and Weber (2016) detailed a consistent positive association between spending and academic outcome for students identified as being from low income families. Their analysis found that 4th grade students in states with increased staffing levels related to greater investment in education, demonstrated higher levels of achievement in reading and math as measured by the National Assessment of Educational Progress (NAEP) (p. 17.). In addition, greater spending was associated with a reduction in the 4th grade achievement gap between students identified as being in poverty and those who were not in poverty (2016, p. 19). Lafortune, Rothstein and Schanzenbach, (2016) used data from the National Assessment of Educational Progress (NAEP) to compare state scores in their analysis of the effects of school funding reforms on per-student spending and student achievement across the nation. The NAEP annually assesses a representative sample of students from across the nation at grades 4, 8 and 12 on various subjects, including reading and mathematics (National Center for Education Statistics, 2017).The results of the 2016 analysis indicate that greater funding increased student achievement in school districts identified as being low-income prior to the identified funding reform (pp. 31-34).

Jackson, Johnson and Persico (2016), in their study linking changes in school funding models during the 1970s and 1980s, to longitudinal data on a nationally representative sample of students moving through the public education system during those eras, found that for students identified as being from low-income families a 10% increase in per pupil spending each year for all 12 years of public school is associated with 0.46 additional years of completed education and 9.6% higher earnings:

> The results imply that a 25% increase in per pupil spending throughout one's school years could eliminate the average attainment gaps between children from low-income (average family income of $31,925 in 2000 dollars) and nonpoor families (average family income of $72,029 in 2000 dollars) (2016, p. 160).

An alternative measure of the vertical model involves an examination of how the policy and budget allocation interacts with other funding streams and demographic categories. The results are considered a measure of funding progressivity, with stronger relationships between targeted populations and funding levels indicative of higher progressivity and vice-versa (Chingos & Blagg, 2017). Chingos and Bragg (2017), measuring school funding progressivity 2013-14 across the nation found that students in poverty and students not in poverty generally attend school district that are funded at the same level, including students across California (p. 14). That is, funding is neither particularly progressive or regressive. Chingos and Bragg note that although 35 states at the time of the research had additional funding for students in poverty, the comparative effect of the targeted monies, "depends on how successful are states at counteracting local funding, which tends to be regressive" (p. 2).

Baker (2017) analyzing school funding progressiveness for all states 1993-2012, found increased funding levels in high poverty districts relative to lower poverty districts in 30 states 1993 to 2007, and decreases in 40 states 2017-2012, during the period of the Great Recession. Spending progressivity in California measured as the ratio of operating expenditures per pupil declined over the period of study at 1.17 (1993), 1.12 (2002), 1.32 (2007) and 1.20 (2012) respectively. The current study builds on the work of researchers studying funding progressiveness. Through analyses of the composition of district-level demographic categories and the examination of how district-level budget allocations under LCFF interact with other funding streams and demographic categories, the researcher will determine the strength of the relationships between students targeted for supplemental funding and actual funding provided. Results are considered a measure of recognition and distribution (in)justice.

Summary

A review of the literature has detailed the historically constituted nature of recognition and distribution (in)justice for African-American students, ELs and students in poverty. A combination of legislation and policy reflective of "patterns of cultural value that constitute some individuals and groups 'as inferior, excluded, wholly other, or simply invisible"(Kompris, 2007, p.278), has historically denied parity of participation in public education for these students. Varying degrees of misrecognition and status subordination have been imbricated with broader economic disparities; including localized disparities in education resources that have led to unequal access to education opportunity. School finance reform can provide some relief towards pervasive inequities

in public education. Specifically, there is a positive relationship between targeted funding and outcomes for historically underserved students.

CHAPTER THREE: METHODOLOGY

Restatement of the Purpose

The goal of this dissertation study is to examine the ways in which the Local Control Funding Formula (LCFF) may act as an instrument of recognition and/or distribution justice in California school districts. Recognition justice is considered via analysis of the composition of LCFF student eligibility categories across the state as defined by the California Department of Education (CDE) school district level data on student demographics including EL status, FRMP eligibility, and status as an African-American student. Distribution justice is evaluated through investigation of the relationship of district level student demographic categories to the distribution of monies under LCFF and with consideration of the three additional district level funding sources - Federal, Local and Other State. Examination of the LCFF within the context of total revenue sources helps to determine if LCFF funding distribution across the state reflects additional resource support to LCFF targeted groups and if any potential distribution justice under LCFF is being counterweighted by resources from other funding categories.

This work expands on the body of literature studying equity and social justice in public education finance reform. Much education research focuses on differences between student groups at the level of outcome, for example, in the examination of test score disparities and achievement gaps. The critical quantitative approach applied in this research draws attention to the status of the various student groups at the level of funding input. This work supports the recognition of opportunity gaps based on a deep understanding of how various student groups have been historically positioned to succeed

or fail; and the instrumental potential of funding redistribution to address opportunity disparities.

Results from this research may clarify which demographic markers - EL status, FRMP eligibility, and status as African-American - define student groups labeled for increased resources through the LCFF; and if the weighted funding formula has in fact resulted in comparative increases in overall funding for targeted student groups. Data from this study may support California educators and policy makers in better understanding the interplay between student demographic categories and school funding variables. This work may also provide a foundation for interpreting research on academic outcomes of students under the LCFF. This chapter includes a description of the research questions, methods, researcher's positionality, research design, population, variables, data analysis procedures and limitations.

Research Questions

The present study addresses the following overarching question through a critical quantitative analysis (Gillborn, Warmington, & Demack, 2018; Stage, 2007; Stage & Wells, 2014): Is the LCFF working as an instrument of recognition and/or distribution justice? A review of the literature has detailed the historic relationship of poverty, EL status and race to education outcome, and established the legitimate potential of funding to disrupt historic patterns of inequity. The recognition justice intent of the research involves an investigation of district level student demographic data on poverty, African-American, and EL status, across school districts in California. The presumption of the critical quantitative approach being applied is that a more nuanced and contextualized identification of the characteristics of groups targeted for supplemental funding through

the LCFF, signals in and of itself an act of recognition justice, while also providing for a deeper understanding of the relationship of that data to funding.

As stated above, school district funding comprises LCFF allocation and monies from three additional resources - Federal, Local and Other State. The distributive justice potential of the LCFF is evaluated by comparing district level per student funding from LCFF with district per student funding from other sources across California school districts. That is, does the distribution of Federal, Local or Other State resources temper the relative power of LCFF funding? The bivalent justices of distribution and recognition under LCFF are examined through analyses of the relationship between the distribution of per student funding from the four funding sources in school districts across California, and the distribution of district-level student groups across the state that are identified for supplemental funding under LCFF (FRMP-eligible and EL). In addition, data on funding distribution to African-American students are examined.

To enable comparison analysis as a measure of change between pre- and post-LCFF implementation towards the examination of LCFF distribution justice, data are gathered from all school districts across California 2012-2013, the final year of the old funding model, and from 2017-2018, the most recent year for which LCFF data is available. 2017-2018 was selected as LCFF funding targets have been phased in since 2013-2014 and the 2017-2018 state budget brought the formula to 97% of full implementation, meaning the target level was very nearly met in that year (Budget Center, 2017). Three research questions (RQs) were formulated for quantitative analyses:

RQ1. How are school districts in California defined in terms of student demographic categories identified in the LCFF 2017-2018?

This question is designed to examine district level demographic data for evidence of recognition justice, measured by the inclusion of a demographic category as a targeted group in the new funding formula. Districts are thus defined in terms of their LCFF demographic profile. Research question one also explores parity of participation for targeted groups as formula determinators in the LCFF, by comparing the district level number of students in each targeted group to the district's unduplicated pupil count.

RQ2. How does the district-level per-pupil composition of LCFF, Other State, Federal, and Local funding compare pre- and post-LCFF (2012-2013 and 2017-2018)?

This question is designed to examine district level funding data pre- and post-LCFF for evidence of distribution justice, measured by post-LCFF concentration grant eligible districts being allocated greater funding than non-eligible districts. A second measure of distribution justice is found in comparing the pre- and post-LCFF funding gaps between concentration grant eligible and non-eligible districts, for evidence of distributions in favor of concentration grant eligible districts.

RQ3. How does district-level per-pupil funding for EL, FRMP-eligible and African-American students compare pre- and post-LCFF (2012-2013 to 2017-2018)?

Research question three combines approaches used in research questions one and two to examine the district level demographic and funding data for evidence of recognition and distribution justice for the groups of interest in the study.

Methodology

This study uses critical quantitative methodology. Stage and Wells (2014) describe the critical quantitative research as an approach in which, " the focus is on equity concerns that can be highlighted through analysis of large data sets and by examining differences by race, class, and gender" (p. 5). Baez (2007) suggests that quantitative researchers in pursuit of a critical framework, adopt the seven basic premises about society proposed by Kincheloe and McLaren (1994), in their guide for critical qualitative researchers (p. 20). Baez summarizes:

> (1) all thought is fundamentally mediated by power relations that are socially and historically constituted; (2) facts can never be isolated from the domain of values or removed from some form of ideological inscription; (3) the relationship between concepts and objects is never stable or fixed and is often mediated by the social relations of capitalist production and consumption; (4) language is central to the formation of subjectivity; (5) certain groups in any society are privileged over others, and although the reasons for this privileging may vary widely, the oppression that characterizes contemporary societies is most forcefully reproduced when subordinates accept their social status as natural, necessary, or inevitable; (6) oppression has many faces and focusing on only one at the expense of others often elides the interconnections among them; and (7) mainstream research practices are generally, although most often unwittingly, implicated in the reproduction of systems of class, race, and gender oppression. (Baez, 2007, p. 20)

The adoption of Kincheloe and McLaren's guidelines is at variance with a (historical) broad assumption among policy-makers, media and the general public, that quantitative research is objective and factual. Stage (2007) attempts to resolve the contradiction, in providing a comparison between qualitative and positivist methods, situating critical quantitative approaches somewhere in between, as detailed in Table 6.

In Table 6, Stage presents research methods for critical quantitative and positivist approaches as similar by strict interpretation of their respective applications of scope, findings, focus, data and results. The models diverge in consideration of the motivation(s) behind the research. The critical quantitative researcher disrupts the status quo by contextualizing data within sociological and economic processes, towards the investigation of existing models and assumptions, and in pursuit of equity (Stage, pp. 10-11). While acknowledging that critical quantitative research methods may match those of the traditional positivist approach, Stage proposes that motivations behind the research, "more closely match those of the critical researcher" (p. 9). Thus, according to Stage, Kincheloe and McLaren's seven elements would not preclude critical quantitative approaches as applied in the current research.

Kincheloe and McLarens' tenets of critical research complement multiple aspects of Fraser's justice framework and the present critical quantitative examination of the LCFF through a bivalent lens of recognition and redistribution justices. The literature review has established that student demographic categories and related funding patterns are "socially and historically constituted" (Kincheloe & McLaren, as cited in Baez, 2007, p. 20); and Fraser locates power inequities in historically-rooted identity and economic disparities. Further, the cornerstone of Fraser's argument is consistent with Kincheloe

Table 6

Methods and Motivations for Research Paradigms

	Critical	Critical Quantitative	Positivist-Postpositivist
Research Methods			
Scope	In-depth	Broad	Broad
Findings	Interpretive	Generalizable	Generalizable
Focus	Individual	Group	Group
Data	Idiographic	Aggregate	Aggregate
Results	Context dependent	Context independent	Context independent
Research Motivation			
Questions	Model-questioning	Model-questioning modification	Model verification confirmation
Goals	Description	Investigation	Explanation
Outcomes	Equity	Equity	Fairness

Note. Adapted from "Answering critical questions using quantitative data", by F. K. Stage, 2007, *New Directions For Institutional Research, 133*, p.10.

and McLaren's assertion, "that focusing on only one justice at the expense of others often elides the interconnections among them" (as cited in Baez, 2007, p. 20). That is, by focusing on either cultural recognition or socio-economic distribution, not only may one be ignored at the expense of the other but further, authentic connections between the two are suppressed.

The present study analyzes quantitative data in order to investigate the myriad and complicated relationships between student demographic data, funding eligibility and funding distribution. The extensive literature review in Chapter Two well documents the inequities of the public education system and situates the current study within the larger historical, social and political context. The application of a quantitative approach supports the instrumental practicality of examining fiscal policy as a tool for change in favor of recognition and redistribution justice for identified student groups.

Research Design

The present study uses quantitative methodology, incorporating both descriptive and inferential statistics. The researcher uses a non-experimental post hoc research design to examine the relationship between district level student demographics and district level funding allocation in 2012-2013 and 2017-2018, and to compare data between both years. The 2012-2013 school year was the last year of the former funding model and 2017-18 is the year for which the most recent data on the LCFF is publicly available. As detailed above, 2017-18 also marked the implementation of the original LCFF funding target at the 97% level (Budget Center, 2017). The units of analysis in the study, as detailed under "Description of Variables" below, are district level student group demographic data on EL status, FRMP-eligibility, and African-American students, and district level per student funding data.

The research design includes cross-sectional analyses of California district-level student demographic data on EL status, FRMP-eligibility, and African-American, and district-level per-pupil resource data on the four funding sources in both years of interest. School district is chosen as the level of data analyses for several reasons. Criteria for the

funding formula are identified at the district level under the LCFF. That is, the LCFF funds individual students within a district differentially, based on their belonging to a category of identified eligibility such as being an EL or being FRMP-eligible. The LCFF also provides additional funding for concentrations of students within a district who belong to one of the previous identified categories. Thus, district level data captures the distribution of students and funding as measured under LCFF.

Sample

The population of interest (universe) is all students enrolled in California public school districts during the 2012-2013 and the 2017-2018 school years. Consistent with previous research on education funding in California by Loeb et. al (2006) and later Bruno (2018), the five common administrative districts of Petaluma, Santa Rosa, Santa Cruz, Modesto, and Point Arena, are treated as unified school districts. That is, the separate enrollment and revenue data reported at the elementary and secondary levels are combined. Table 7 provides data on the sampling procedures. Districts for which funding data are not publicly available are identified and removed from the sample. Given the intent of the research is to conduct pre- and post-LCFF comparisons, 15 districts from 2012-2013 that are not represented in the 2017-2018 list of districts are also removed in the sample.

Loeb et. al and Bruno excluded over two hundred districts with an ADA lower than 250 from their respective studies, recommending that “very small districts often have very unusual cost structures (e.g., because of atypical capital or transportation costs) and per-pupil revenues and expenditures that are very high” (Bruno, 2018, p. 6). Analysis

Table 7

Steps in Sampling Procedure

California School Districts	2012-2013	2017-2018
Universe		
Total number of districts	1034	1025
Total number of students	6,225,520	6,219,336
Removed		
Districts with no available funding data	85	86
Number of students	163,458	170,833
Remaining Sample		
Total number of districts	949	939
Total number of students	6,062,062	6,048,503
Removed		
Districts represented in only one year of the study	15	0
Number of students	509	0
Remaining Sample		
Number of districts	934	934
Number of students	6,061,553	6,048,503
Removed		
Districts with funding above the 95th percentile	48	18
Number of students	17,133	12,788
Remaining Sample		
Number of districts	868	868
Number of students	6,031.632	6,006,186
Removed		
No match on concentration grant	86	4
Number of students	361,979	14,052
Remaining Sample – Study Population		
Number of districts	778	778
Number of students	5,669,653	5,992,134
% of universe	91.07	96.35

Note. Data from author calculations based on Education Data Partnership, Ed-Data (2018).

of the data in the current study revealed that districts with ADA lower did not have a pattern of atypical funding levels. Districts with extraordinary revenue above the 95th percentile were removed from the sample, comprising 48 districts in 2012-2013 (17,133 students) and 18 districts in 2017-2018 (12,788 students).

As concentration grant eligible and non-eligible districts are also compared between districts across both years, the data are examined for consistency in concentration grant status pre- and post-LCFF. A total of 86 districts that did not meet concentration grant eligibility levels in the 2012-2013 school year, have done so by the 2017-2018 school year. Four districts from the 2017-2018 school year have lost concentration grant eligibility since the 2012-2013 school year. All 90 districts are excluded from the study as they could not be matched pre- and post-LCFF. The final study sample is 778 districts, comprising 91.07% of the 2012-2013 universe population 2012-2013 and 96.35% of the 2017-2018 universe population.

Data Sources

There were several stages in the data collection. All data used was publicly available data from the California Department of Education (CDE). Some data was gathered directly from the CDE online and some data was gathered from secondary websites that have organized existing CDE-available data in a manner that makes it more accessible. Data of interest for the research pertains to California public education student demographics and education funding. All data was gathered at the level of district and data did not include any identifiable information on students. As such, consistent with Federal regulations on research involving the analysis of existing data that are already

publicly available, the research study was exempt from Institutional Review Board (IRB) oversight.

The primary data set was gathered from the Education Data Partnership database, "Ed-Data". Founded in 1996, Ed-Data is a partnership of the California Department of Education (CDE), EdSource and the Fiscal Crisis & Management Assistance Team (FCMAT), and is designed to provide fiscal, demographic, and performance data on California's K-12 schools. Data from the California Longitudinal Pupil Achievement Data System (CALPADS) and provided by CDE, makes up the bulk of the information used on the Ed-Data website. CALPADS is a longitudinal data system created by the state in 2009 to meet federal requirements first delineated in the 2001 No Child Left Behind (NCLB) Act. CALPADS is used to maintain and report individual-level data including (but not limited to) student demographics, program participation, discipline and assessment data. Besides providing the data for Ed-Data, CDE staff also, "assist in the design of the site, and participate in determining how to use the data to make meaningful and useful analyses and comparisons" (Education Data Partnership, 2018). Founded in 1977, EdSource is a non-profit journalism website focused providing information, research and analysis on education in California, in support of an informed and involved public (Edsource, 2018a). Independent of Ed-Data, the EdSource website provides information and access to various local, state and national level education data exploration tools. FCMAT is an independent state organization tasked with monitoring California's Local Educational Agencies (LEAs) financial responsibilities, and with the provision of fiscal advice and management assistance as needed (Fiscal Crisis & Management Assistance Team, 2018). It was created in 1991 under Assembly Bill 1200,

passed by the Legislature following the bankruptcy of Richmond Unified School District.

The Ed-Data website allows for searches at the state, county, district and school level, and including assorted student, staff, and funding variables. Data files are downloadable in excel format. The current study gathered data for the 2012-2013 and the 2017-2018 school year on district enrollment, the size of different groups within total enrollment as a number and as a percentage of district enrollment, and various data related to funding sources. School districts in California report detailed financial information on revenue and expenditures annually to the state using a Standardized Accounting Code Structure (SACS). For the purposes of the present study, all SACS object codes from 8000-8799 representing district revenue sources are of interest as detailed in Table 8.

Table 8

SACS Categories Making Up The Total General Fund Revenue Per Student

SACS Code Category	
8010-8099	Revenue Limit Sources/LCFF Per Student
8100-8299	Federal Revenue Per Student
8300-8599	Other State Revenue Per Student
8600-8799	Other Local Revenue Per student

Note. Information from California Department of Education, California School Accounting Manual (2018f)

Description of Variables

There are two categories of variables being used in the analysis, those related to student demographics and those related to funding. All variables are defined, and as data gathered, by the California Department of Education, and are measured at the level of district. Unless otherwise stated, variables are the same across both years in the study. Although there are some differences in available data categories between the former funding model and the LCFF, resources are allocated in a categorically similar way such that comparison between the two is reasonable. For example, FRMP eligibility correlates very highly with the unduplicated pupil count and FRMP eligibility prior to the LCFF can serve as proxy for unduplicated pupil count comparisons (Bruno, 2018). Variables related to student demographics include:

a. Total district enrollment of students as a number or as a percentage (100%)

b. EL students as a number or as a percentage of total enrollment

c. Students identified as being economically disadvantaged (FRMP-eligible) as a number or as a percentage of total enrollment

d. Students in the identified ethnicity/race category, "African-American" as a number or as a percentage of total district enrollment.

e. The unduplicated pupil count (2017-2018) as a number or as a percentage of total district enrollment

f. The concentration grant count (2017-2018) as a number or as a percentage of total district enrollment

As detailed in Chapter One, school district funding in California is based on Average Daily Attendance (ADA) as opposed to the number of enrolled students. That is,

funding is provided “per ADA”, defined as the total days of student attendance divided by the total days of instruction. For convenience however, the terms “per student” and “per pupil” are used in this study. Approximately half of all districts access funds through “Other Financing Resources”, comprising 14% of total resources to those districts with the majority going towards capital investments (Bruno, 2018, p. 11). This funding category is excluded from the present study as it represents income that involves an offsetting liability or asset loss, such as debt issuance or proceeds from the sale of capital, and is not controlled by “bona fide” revenue sources (Bruno, 2018). Variables related to funding include:

a. Total general fund revenue per student as a number or as a percentage (100%)

b. LCFF funding per student (2017-2018) as a number or as a percentage of total general fund revenue per student.

c. Revenue Limit funding per student (2012-2013) as a number or as a percentage of total general fund revenue per student.

d. Other State funding per student as a number or as a percentage of total general fund revenue per student.

e. Federal funding per student as a number or as a percentage of total general fund revenue per student.

f. Local funding per student as a number or as a percentage of total general fund revenue per student

Operationalization of Recognition Justice and Distribution Justice

The following terms are operationalized for the purposes of measurement within the present study:

1. *Recognition justice as the affirmation of specific identity* is measured by the naming of a student demographic category as a targeted group within the LCFF.

2. *Recognition justice as parity of participation* is measured by comparing the district level number of students in each targeted groups to the district's unduplicated pupil count. A high correlation is considered evidence that the targeted group is working as a formula determinator and afforded parity of participation in the formula as designed.

3. *Distribution justice* is measured by comparing pre- and post-LCFF dollar allocations for concentration grant eligible districts and non-eligible districts. Distribution justice is met when concentration grant eligible districts are allocated greater funding than non-eligible districts. A second measure of distribution justice is found in comparing the funding gap as a percentage of the lower allocation, between concentration grant eligible and non-eligible districts, pre- and post-LCFF. A post-LCFF gap increase in allocations favoring concentration grant eligible districts, or gap decrease in allocations favoring non-eligible districts, are both indicative of distribution justice. This justice is also considered evidence of a progressive funding allocation.

Data Analysis Procedures

The data are analyzed using Stata/SE 15.1 statistical software. All data are aggregated at the district level. A variety of statistical calculations are utilized to examine the data. A dummy variable is used for district unduplicated concentration grant eligibility.

Steps in Analyses

Three research questions (RQs) were formulated for quantitative analyses. Specific sub-questions and statistical methods are detailed in Tables 9-11 respectively.

RQ1. How are school districts in California defined in terms of student demographic categories identified in the LCFF 2017-2018?

RQ2. How does the district-level per-pupil composition of LCFF, Other State, Federal, and Local funding compare pre- and post-LCFF (2012-2013 and 2017-2018)?

RQ3. How does district-level per-pupil funding for EL, FRMP-eligible and African-American students compare pre- and post-LCFF (2012-2013 to 2017-2018)?

Table 9

RQ1. How are school districts in California defined in terms of student demographic categories identified in the LCFF 2017-2018?

Sub-Questions	Statistical Method
1. How are school districts defined by the percentage of FRMP-eligible students under the LCFF 2017-2018?	Descriptive statistics - histogram; table with results measured in increasing increments of district-level % of FRMP-eligible students i.e. 0-10%, 11-20% etc. Inferential statistics - correlation and scatter plot
2.. How are school districts defined by the percentage of ELs under the LCFF 2017-2018 and what is the relationship between EL and FRMP-eligible students?	Descriptive statistics - histogram; table with results measured in increasing increments of district-level % of ELs i.e. 0-10%, 11-20% etc. Inferential statistics - correlation and scatter plot
3. How are school districts defined by the percentage of African-American students 2017-2018 and what is the relationship between African-American students and FRMP-eligible students?	Descriptive statistics - histogram; table with results measured in increasing increments of district-level % of ELs i.e. 0-10%, 11-20% etc. Inferential statistics - correlation and scatter plot

Table 10

RQ2. How does the district-level per-pupil composition of LCFF, Other State, Federal, and Local funding compare pre- and post-LCFF (2012-2013 and 2017-2018)?[a]

Sub-Questions	Statistical Method
1. How does district level total funding per-pupil compare pre- and post-LCFF in all districts?	Descriptive statistics - histograms; table of dollars and % - ranges, means, SDs
2. How does the district level per-pupil allocation from the four funding resources compare pre- and post-LCFF: a) Revenue Limit allocation (2012-2013) and LCFF allocation (2017-2018) b) Other State allocation c) Federal resource allocation d) Local resource allocation - in concentration grant eligible districts? - in non-eligible districts?	Descriptive statistics - stacked bar charts comparing 2012-2013 and 2017-2018; table of dollars and % - ranges, means, SDs; table of dollar mounts at 25th, 50th, 75th percentile - comparison between both years; Inferential statistics - paired-samples t-tests
3. How does the gap in district level per-pupil allocations between non-eligible and concentration grant eligible districts compare pre- and post-LCFF: a) Revenue Limit allocation (2012-2013) and LCFF allocation (2017-2018)? b) Other State allocation? c) Federal resource allocation? d) Local resource allocation?	Table of dollars and % - ranges, means, SDs; table of dollar mounts at 25th, 50th, 75th percentile; Inferential statistics - independent samples t-tests

[a]2012-2013 amounts adjusted to 2018 dollars

Table 11

RQ3. How does district-level per-pupil funding for EL, FRMP-eligible and African-American students compare 2012-2013 to 2017-2018?[a]

Sub-Questions	Statistical Method
1. How does district-level per-pupil allocation from the four funding sources for EL, FRMP-eligible and African-American students compare pre- and post-LCFF: a) total per-pupil revenue? b) LCFF revenue (2017-2018) and revenue limit funding (2012-2013)? c) Other State revenue? d) Federal revenue? e) Local revenue?	Descriptive statistics - stacked bar charts comparing 2012-2013 and 2017-2018; table of dollars and % - ranges, means, SDs;
2. How does the gap between district level per-pupil allocations for EL, FRMP-eligible and African-American students differ between non-eligible and concentration grant eligible districts compare pre- and post-LCFF?	Descriptive statistics - table of dollar mounts at 25th, 50th, 75th percentile; independent sample t-tests Inferential statistics - independent-samples t-tests

[a]2012-2013 amounts adjusted to 2018 dollars

Limitations

The researcher has made the assumption that data within the current study compiled from the California Department of Education (CDE) and from agencies using CDE data, are reliable and valid. Given their use in state and federal reporting systems, the researcher believes such the assumption of strong internal validity in the collected data is warranted. The external validity of the data is strong in that the sample size is large and comprises greater than 90% of the available universe of data in both years of the study. The results are considered representative of California school districts. Data are specific and unique to California and it is not expected that findings from the study would be generalizable across states. As noted by Alexander (2003), state or district data may

mask large disparities among institutional settings. The demographic composition of individual schools across a district may vary considerably, and district-level data are not assumed to be reflective of school-level data. As such results are not generalizable down to the level of school site.

Researcher's Positionality

The researcher is a public school administrator in a mid-sized North California urban school district and by dint of her position is among that class of maintainers necessarily required for the perpetuation of the public school system. As such, the researcher both identifies with and rejects as reductive Apple's (2017) assertion that the current neoliberal education structure includes, "a particular fraction of the professional and managerial new middle class who have occupied positions within the state…who are committed to the ideology and techniques of accountability, measurement, and "the new managerialism" (p. 150). As a matter of reality, the students, parents and families with whom the research interacts daily, look pragmatically towards education as a primary means to advancement. Further the researcher identifies with many of the students in being immigrant, growing up in relative poverty and being the first in her family to attend college.

Absent radical answers in pursuit of transformative remedies, is the administrator as researcher now become impotent? Gramsci, as articulated by Apple (2018), provides guidance:

> When Gramsci (1971) argued that one of the tasks of a truly counter-hegemonic education was not to throw out "elite knowledge" but to

> reconstruct its form and content so that it served genuinely progressive social needs, he provided a key to another role "organic" and "public" intellectuals might play…..We can give back these skills by employing them to assist communities and movements in thinking about this, learning from them, and engaging in the mutually pedagogic dialogues that enable decisions to be made in terms of both the short-term and long-term interests of the dispossessed. (p. 80)

The researcher thus self-identifies as a "public" intellectual and practical expert on how funding is affecting the day-to-day and cumulative experience of students, and particularly the experience of students in poverty, EL students and students of color. Embracing agency, the researcher agrees with Dumas (2009) when, speaking to the practical (urgent) exigencies of education reform he concludes, "that disenfranchised and devalued communities have immediate needs that are most realistically addressed through affirmative remedies" (p. 101).

Summary

In this chapter, the researcher has presented on the proposed methodology including integrating the methodological approach with the theoretical framework and the researcher's positionality. The population of interest and population sample have been reviewed, and the variables for analyses, have been described. Detailed information on the research design and data analysis procedures has been provided. Finally, limitations of the research have been reviewed.

CHAPTER FOUR: RESULTS

Overview

This study is designed to examine how student groups are being included in the LCFF as a measurement of recognition justice and to determine if the weighted student formula being implemented through the LCFF is resulting in distribution justice measured by greater resource support of LCFF-identified student groups. A critical quantitative approach comprising a combination of descriptive and inferential statistics is used. Analyses of the composition of district-level LCFF-funding eligibility categories by student FRMP eligibility, EL status, and for African-American students are conducted. The composition of district-level LCFF allocation and the other three funding resources are also compared pre- and post-LCFF, to determine if there have been changes in per-student funding levels consistent with the intent of the formula. Finally, the relationship of groups targeted for LCFF supplemental funding to actual district-level funding pre- and post-LCFF are examined to identify if and to whom the LCFF model provides an increase in funding relative to the former funding model.

This chapter includes a description of the results of the various analyses as they relate to the three research questions. Research question one investigates recognition justice by naming and measuring district level student demographic categories as targeted groups within the LCFF. Recognition justice as parity of participation for LCFF targeted groups, is measured by comparing the district level number of students in each of the targeted groups to the district's unduplicated pupil count. Findings, as expanded on and discussed below, include the identification of the FRMP-eligible group as the key LCFF allocation determinant under the new formula (recognition justice); and the related

exclusion of EL status as counting towards formula implementation (recognition injustice).

Research question two measures distribution justice by comparing pre- and post-LCFF dollar allocations. Distribution justice is met when concentration grant eligible districts are allocated greater funding than non-eligible districts; and when the funding gap between concentration grant eligible and non-eligible districts continues or changes to favor concentration grant eligible districts post-LCFF. The latter is also considered a measure of progressive funding. Findings show that per student district level funding as increased significantly post-LCFF. Data evidencing distribution justice includes greater LCFF and Federal allocations to districts with higher concentrations of targeted students, specifically FRMP-eligible students. Post-LCFF changes in funding gaps between concentration grant eligible and non-eligible districts indicate a pattern of progressive funding (distribution justice) in favoring concentration grant eligible districts. The Other State allocation however is reduced post-LCFF and appropriates greater reductions in concentration grant eligible districts compared to non-eligible districts, indicating a measure of regressive funding (distribution injustice). This is inconsistent with the intent of the LCFF and somewhat problematic given both the LCFF and Other State resources come from the State.

Research question three examines pre- and post-LCFF funding data specific to the demographic groups of interest (FRMP-eligible, ELs and African-American students) Findings are consistent with those of research questions one and two. Post-LCFF, funding increases significantly for each group. Greater allocations for concentrations of ELs and African-American students are contingent on an overlap with FRMP-eligibility. Both the

LCFF and Federal allocations favor concentrations of targeted students consistent with distribution justice. Those of the Other State and Local allocations favor concentration grant non-eligible districts and are considered to be funding regressive (distribution injustice). All findings are reviewed and discussed in detail below.

Research Question One

RQ1. How are school districts in California defined in terms of student demographic categories identified in the LCFF 2017-2018?

The LCFF determines funding allocation based on district-level student characteristics and the first of the three research questions asks how school districts in California are defined in terms of student demographic categories identified in the LCFF 2017-2018. Specifically, data on district-level enrollment of FRMP-eligible students and of ELs are examined as both groups are targeted for supplemental grants in the LCFF, and a concentration of supplemental grant eligible students over 55% of total district enrollment triggers an LCFF concentration grant allocation. Data on African-American students are also examined as consideration of race is relevant to the issue of equity in funding, although race is not identified as a category for funding allocation purposes under the LCFF.

Research question one is designed to examine the recognition justice within the new formula. Recognition justice as the affirmation of specific identity is measured by the naming of a student demographic category as a targeted group within the LCFF. Recognition justice as parity of participation is measured by comparing the district level number of students in each targeted groups to the district's unduplicated pupil count. Key findings show that the targeted group defined by FRMP-eligibility is the defining factor

in LCFF implementation. Both affirmation of identity and parity of participation are confirmed for FRMP-eligible students. While EL status is legitimized via identification as a targeted group, EL standing not count as a determinator in resource allocation due to the unduplicated count provision of the new formula. Parity of participation for ELs under the new formula is denied. With regard to African-American students, the results show that poverty as a student characteristic is not a reliable substitute for race with the formula. African-American students are afforded neither identity affirmation or parity of participation under the LCFF. Results are discussed in detail below.

How are school districts defined by the percentage of FRMP-eligible students under the LCFF 2017-2018?

The first sub-question asks how school districts in California are defined by the percentage of FRMP-eligible students in 2017-2018 under the LCFF. The LCFF provides for supplemental funding for each FRMP-eligible student and for a concentration grant allocation in districts with 55% or greater FRMP-eligible enrollment. The data show that FRMP-eligible students comprise 60.34% of total enrollment across California for districts in the study 2017-2018. As shown in *Figure 6*, poverty as a student characteristic is found in all districts and, while skewed towards higher proportions of total enrollment, follows a fairly normal distribution across the state. Table 12 provides a breakdown of distribution by number and proportion, of districts and of students, across percentile ranges. The largest category, 81-90%, includes the Los Angeles Unified School District (LAUSD) with a count of over half a million FRMP-eligible students (503,682). Greater than three quarters of 2017-2018 FRMP-eligible students (86.51%) are in concentration-grant eligible districts. *Figure 7* shows the

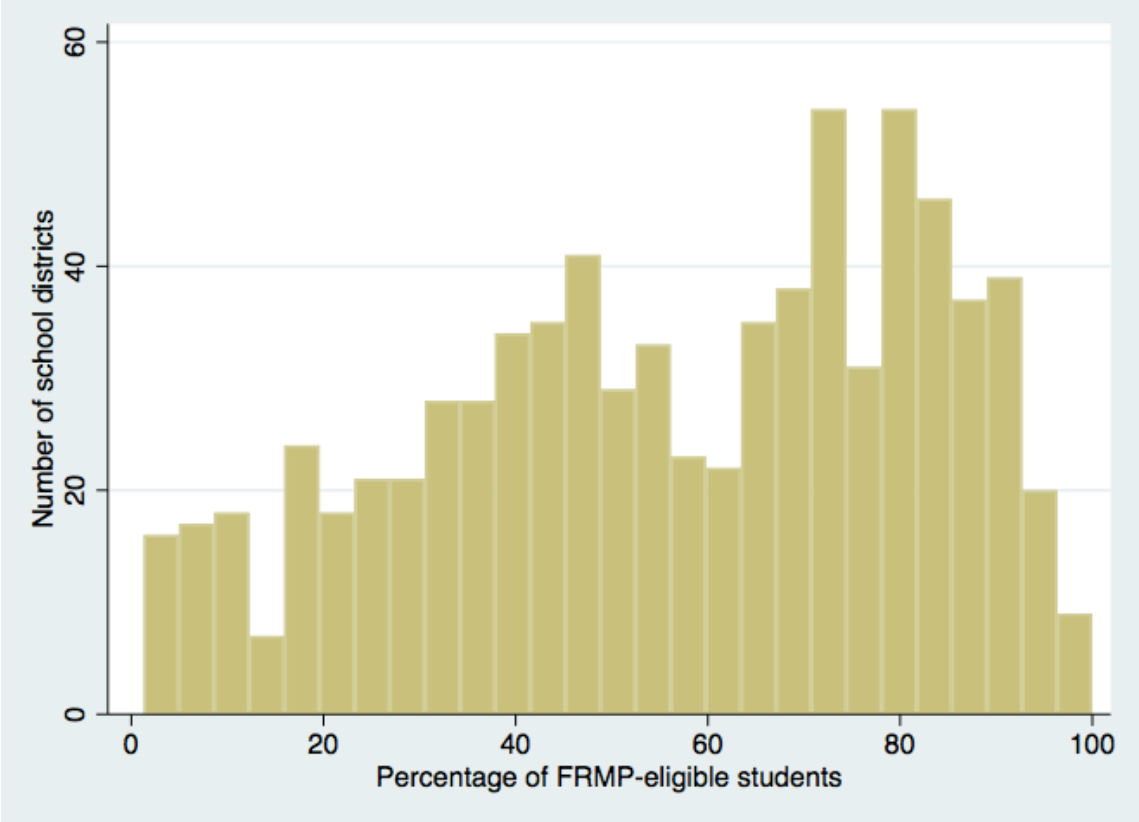

Figure 6. Distribution of FRMP-eligible students across 778 school districts in California 2017-2018.

Table 12

Enrollment of FRMP-Eligible Students in California Districts 2017-2018[a,b,c]

FRMP-elig. as percentage of total district enrollment	0-10	10-20	20-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
# of districts	40	46	52	83	96	76	87	116	219	52
% of all districts	5.14	5.91	6.68	10.67	12.34	9.77	11.18	14.91	28.15	6.68
# of FRMP-eligible	10901	45671	81587	173217	241116	319290[d]	535869	516213	1381630	100233
Percentage of all FRMP-elig.	0.32	1.34	2.39	5.09	7.08	9.37	15.73	15.16	40.57	2.94

[a]Total number of districts 778
[b]Total number of FRMP pupils 3,405,727
[c]Total district enrollment 5,644,353
[d]147,077 of this student group (29 districts) are in districts with 55% or greater of FRMP-eligible student enrollment

high correlation (r=.97) between the percentage enrollment of unduplicated pupil count students and FRMP-eligible students, indicating that FRMP-eligibility is essentially driving concentration grant allocation under the LCFF. That is, as the unduplicated pupil count allows supplemental-grant students to be counted in *either* EL or FRMP-eligible category rather than in both, the high correlation between FRMP-eligibility and the unduplicated pupil count indicates that FRMP-eligibility is the likely assigned category. This issue is further discussed below. Lastly, the data show that 13.49% of FRMP-eligible students are in districts that do not receive any concentration grant funding.

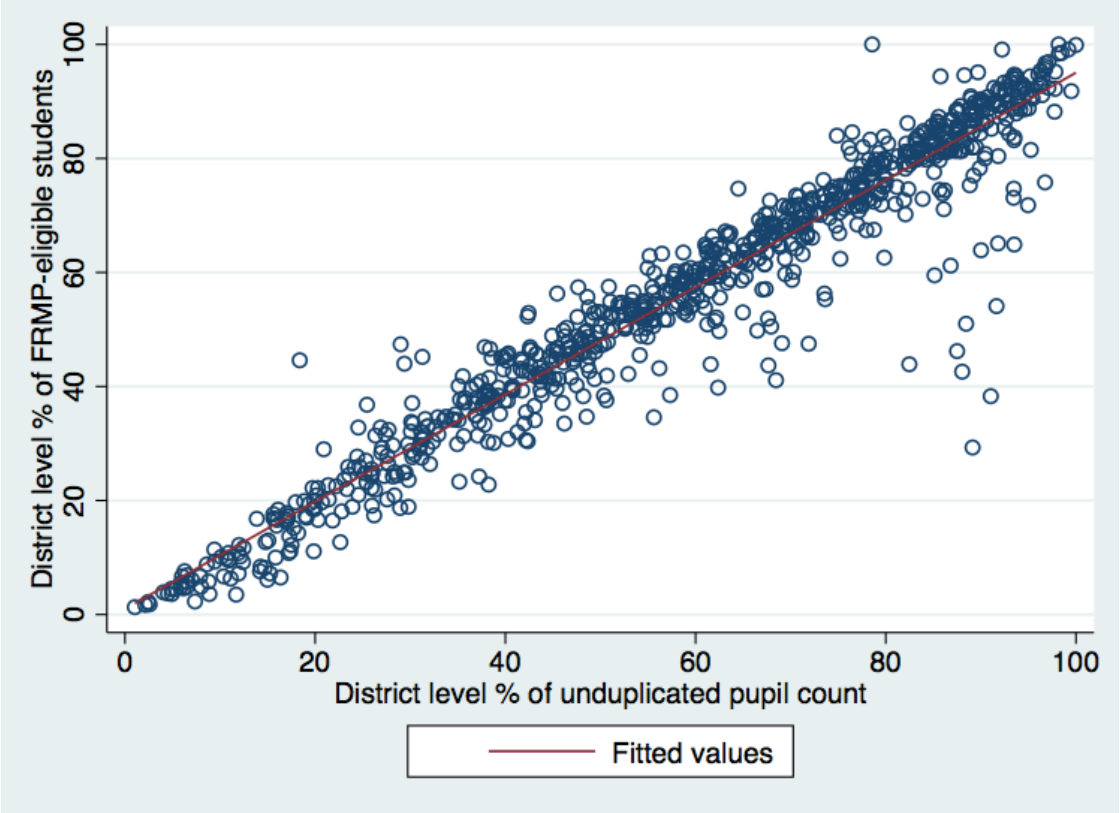

Figure 7. Correlation between the unduplicated pupil count and FRMP-eligible students across school districts in California 2017-2018.

As detailed in Table 13, the majority of FRMP-eligible students, as with the state's population in general, are concentrated in larger urban districts. The ten districts with the most FRMP-eligible students listed in Table 13 comprise 26.98% of the total group. Unified school districts have the highest average proportion of FRMP-eligible students at 58.51%. Elementary districts are at 55.72% and high school districts average 49.50%.

Table 13

Districts with highest number and concentration of FRMP-eligible students in California School Districts 2017-2018[abc]

Districts with the most FRMP-eligible students 2017-2018				Districts with the highest concentration of FRMP-eligible students 2017-2018			
	District, County	# of FRMP	% of FRMP		District, County	# of FRMP	% of FRMP
1.	Los Angeles Unified, Los Angeles	503,682	81.1	1.	Di Giorgio Elementary, Kern	211	100
2.	San Diego Unified, San Diego	74,957	59.3	2.	Gazelle Union Elementary, Siskiyou	26	100
3.	Fresno Unified, Fresno	64,363	87.6	3.	Vineland Elementary, Kern	732	99.9
4.	Long Beach Unified, Los Angeles	49,956	66.9	4.	Mendota Unified, Fresno	3443	99.1
5.	San Bernardino City Unified, San Bernardino	46,822	88.3	5.	Round Valley Unified, Mendocino	459	99.1
6.	Santa Ana Unified, Orange	42,729	80.4	6.	Parlier Unified, (Fresno)	3,421	98.5
7.	Oakland Unified, Alameda	37,348	74.4	7.	Terral Bella Union Elementary, Tulare	920	98.4
8.	Elk Grove Unified, Sacramento	34,107	53.9	8.	Strathmore Union Elementary, Tulare	797	96.9
9.	Stockton Unified, San Joaquin	32,574	79.8	9.	Golden Plains Unified, Fresno	1,698	96.7
10.	Sacramento City Unified, Sacramento	32,513	69.8	10.	Pixley Union Elementary, Tulare	1,072	96.1

How are school districts defined by the percentage of ELs under the LCFF 2017-2018?

The first part of sub-question two asks how school districts in California are defined by the percentage of ELs 2017-2018 under the LCFF. As explained below, the findings show that district-level EL enrollment does not have any influence on concentration grant allocation. As with FRMP-eligible students, the LCFF provides for supplemental funding for each EL and for a concentration grant allocation in districts with 55% or greater EL enrollment. The data show that EL students made up just over one fifth (20.66%) of total student enrollment in the 778 districts in the study during the 2017-2018 school year. As shown in *Figure 8*, in the bulk of school districts ELs comprise under 40% of total student enrollment, with the largest proportion of districts (305) having a 10% or smaller EL population. Table 14 shows more detailed data on the distribution of EL students. The data provide some evidence that simply averaging percentage figures (proportions of enrollment rather than enrollment numbers) from across districts in California is problematic in some contexts in that smaller districts provide a disproportionate influence. While the mean number of ELs across all districts is 1,498 students, the median is only 349 (not reported in Table 14). Although ELs falling in the category of 0-10% of district enrollment in Table 14 make up only 6.11% of all ELs, they represent 39.20% of all districts. Similarly, in the 21-30% category, 42.11% of EL student enrollment comes from only 16.97% of districts, with LAUSD alone providing 12.28% of total ELs across the state. This limitation in the research is further discussed in Chapter Five.

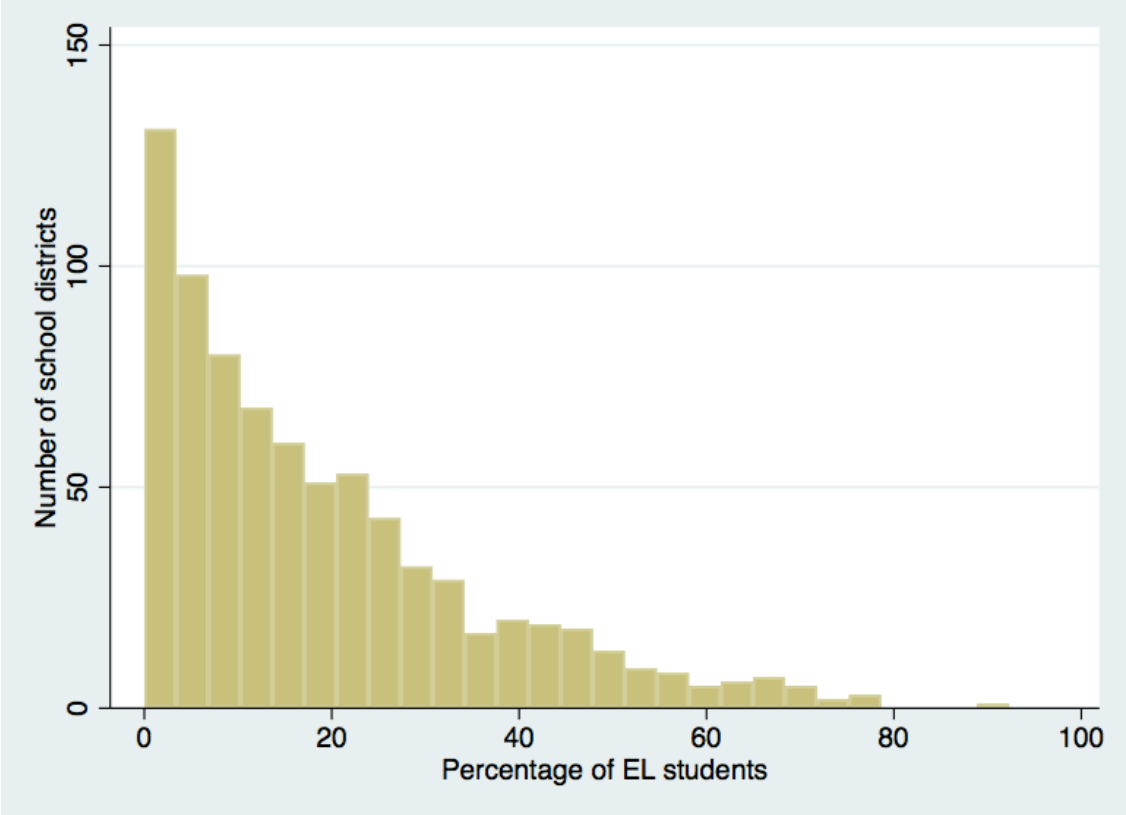

Figure 8. Distribution of EL students across 778 school districts in California 2017-2018.

Table 14

Enrollment of English Learner Students in California School Districts 2017-2018[abc]

EL percentage of total district enrollment	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Number of districts	305	175	132	63	55	23	18	6	0	1
Percentage of all districts	39.20	22.49	16.97	8.09	7.07	2.96	2.31	0.77		
Number of ELs	71308	273740	502737	184668	83786	48635[d]	22470	8731	0	12
Percentage of all ELs	6.11	23.47	43.11	15.84	7.18	4.17	1.92	0.74		

[a]Total number of districts 778
[b]Total EL students 1166087
[c]Total student enrollment 5644353
[d]26609 of this student group (12 districts) are in districts with 55% or greater EL enrollment

As detailed in Table 15, the majority of ELs similar to FRMP-students, are concentrated in larger urban districts. Districts with the largest and most disproportionate percentage of ELs are generally in more rural settings. Consistent with EL reclassification increasing by grade level, elementary districts have the largest proportion of ELs (20.01%) compared to secondary districts (9.36%). Unified school districts have an average of 19.59% EL enrollment. A very small percentage of EL students (.05%) are enrolled in districts comprising 55% or greater of EL students required for district concentration grant eligibility. Of the 36 districts in that group, the EL count is greater than the FRMP- eligibility count in only four. That is to say, only four districts out of the

total 778 in the study apply the EL count towards the unduplicated pupil count (concentration grant eligibility). Given combined enrollment in the four districts totals

Table 15

Districts with Highest Number and with the Highest Concentration of English Learner Students in California School Districts 2017-2018[abc]

Districts with the most ELs 2017-2018				Districts with the highest concentration of ELs 2017-2018			
	District, County	# of ELs	% of ELs		District, County	# of ELs	% of ELs
1.	Los Angeles Unified, Los Angeles	143196	23	1.	Laguna Joint Elementary, Marin	12	92.3
2.	San Diego Unified, San Diego	28,544	22.6	2.	Terra Bella Union, Tulare	712	77.4
3.	Santa Ana Unified, Orange	20,575	38.7	3.	Alisal Union, Monterey	6,981	76.2
4.	San Francisco Unified, San Francisco	16,869	28	4.	San Ardo Union Elementary, Monterey	80	76.2
5.	Garden Grove Unified, Orange	15,752	36.5	5.	Chualar Union, Monterey	247	74.8
6.	Oakland Unified, Alameda	15,666	31.2	6.	Luther Burbank, Santa Clara	374	72.3
7.	Fresno Unified, Fresno	15,082	20.5	7.	Pleasant View Elementary, Tulare	337	71.1
8.	Long Beach Unified, Los Angeles	14,561	19.5	8.	Earlimart Elementary, Tulare	1,259	68.7
9.	San Bernardino City Unified, San Bernardino	13,498	25.5	9.	El Nido Elementary, Merced	114	68.7
10.	West Contra Costa Unified, Contra Costa	10,711	33.8	10.	Traver Joint Elementary, Tulare	148	68.5

1,384 students, a negligible number as a proportion of total state enrollment comprising 5,644,353 students, the 2017-2018 allocation of the concentration grant to districts under

the LCFF does not pertain to district-level EL enrollment.

The relationship between EL and FRMP-eligible students

The second part of the sub-question two examines the relationship between the percentage of EL students and of FRMP-eligible students. Although both groups receive a supplemental grant under LCFF, the data have shown that due to the unduplicated pupil count, EL enrollment alone is unlikely to meet the 55% level threshold for concentration grant allocation. As illustrated in *Figure 9*, many ELs are enrolled in districts with a high

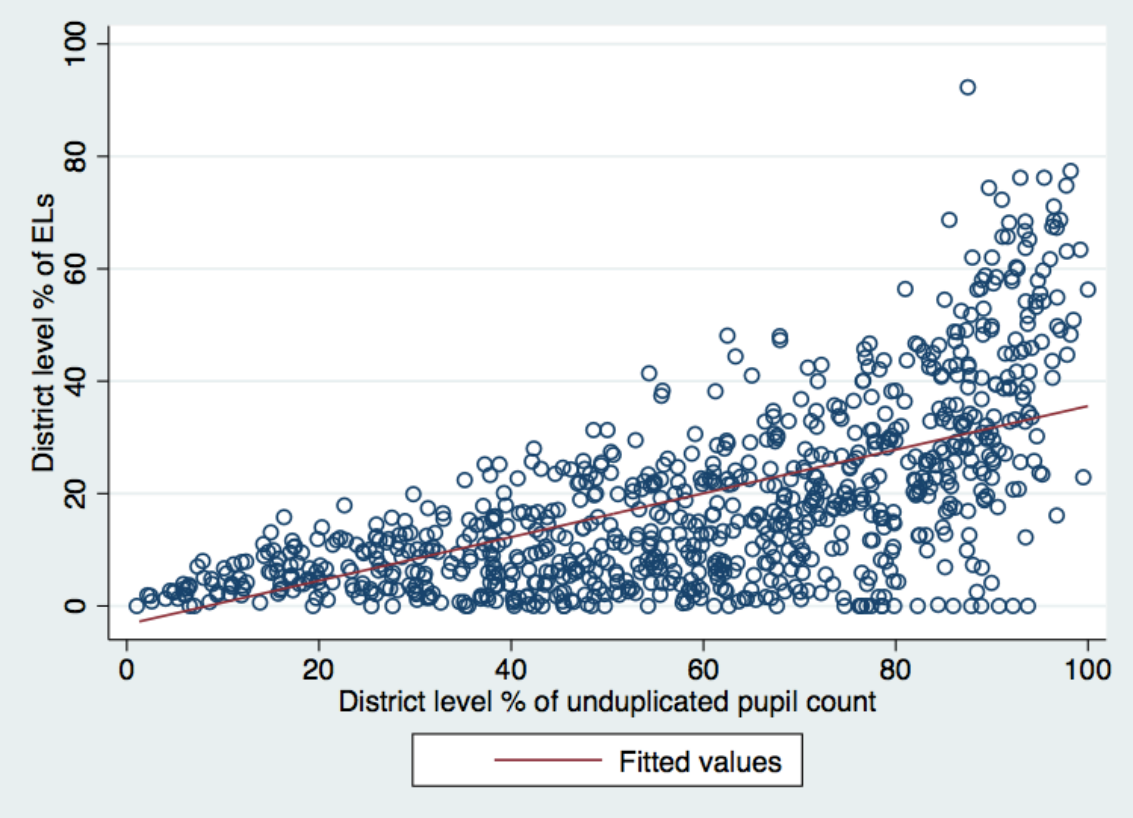

Figure 9. Correlation between the unduplicated pupil count and EL enrollment across school districts in California 2017-2018.

proportion of unduplicated pupil count students (r=.64). Consistent with previous findings that high proportions of ELs are economically disadvantaged (California

Department of Education, 2018c, Hill, 2012, p. 2), many ELs are enrolled in districts with a high proportion of FRMP-eligible students (r=.58). Indeed, the data show that 79.17% of ELs are in districts that receive a concentration grant allocation. As the LCFF uses an unduplicated pupil count meaning students, for funding allocation purposes, may only be counted in one group, the high proportion of ELs in concentration grant eligible districts is indicative that many ELs as expected, meeting FRMP-eligibility criteria. As it pertains to a funding determinant, this overlap of categories is somewhat problematic in that learning needs for students in poverty and for students who are ELs are separate and different.

How are school districts defined by the percentage of African-American students 2017-2018?

The third sub-question asks how school districts in California are defined by the percentage of African-American students 2017-2018 under the LCFF. The data show that African-American students make up 5.52% of 2017-2018 enrollment across the state for districts in the study (311,370 students). The vast majority of districts (656 - 84.32%) have 5% or less African-American students enrolled, with 116 districts (14.91%) having no African-American students at all. Eighty-two percent (256,734 students) of all African-American students are enrolled in the remaining 122 districts and as shown in *Figure 10*, the bulk are in districts where they make up 5-10% of the total student population. Table 16 shows that district enrollment of greater than one-fifth African-American students is a rarity and only one district (Emery Unified, Alameda County), has

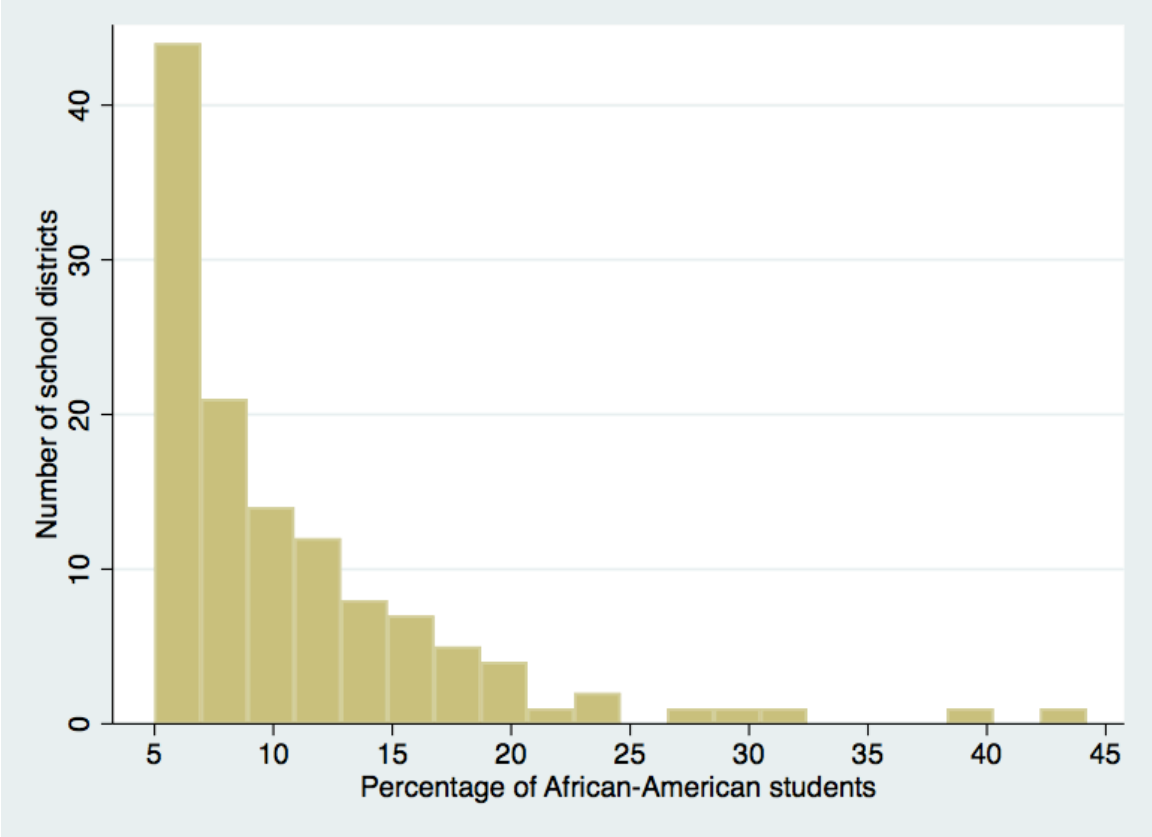

Figure 10. Distribution of African-American students above 5% of total enrollment across school districts in California 2017-2018.

greater than 40% (44.2%) African-American students. As shown in Table 17, the majority of African-American students are concentrated in larger urban districts and the ten districts with the most African-American students listed in Table 17 comprise 36.15% of all African-American students.

Table 16

Enrollment of African-American Students in California School Districts 2017-2018[abc]

African-American students as % of total district enrollment	0-10	11-20	21-30	31-40	41-50
Number of districts	731	38	6	2	1
Percentage of all districts	93.96	4.88	0.77	0.26	0.13
Number of AA	186815	91342	27341	5,767	305
Percentage of all AA students	60.00	29.33	8.78	1.85	0.10

[a]Total number of districts 778

[b]Total number of African-American pupils 311370

[c]Total student enrollment 5644353

Table 17

Districts with highest number and concentration of African-American students in California School Districts 2017-2018[abc]

	Districts with the most African-American students 2017-2018				Districts with the highest concentration of African-American students 2017-2018		
	District, County	# of AA students	% of AA students		District, County	# of AA students	% of AA students
1.	Los Angeles Unified, Los Angeles	50,557	8.1	1.	Emery Unified, Alameda	305	44.2
2.	Oakland Unified, Alameda	12,196	24.3	2.	Inglewood Unified, Los Angeles	4,848	40.1
3.	San Diego Unified, San Diego	10,634	8.4	3.	Mojave Unified, Kern	919	32.4
4.	Long Beach Unified, Los Angeles	9,537	12.8	4.	Lancaster Elementary, Los Angeles	4,534	29.8
5.	Elk Grove Unified, Sacramento	7.606	12	5.	Vallejo City Unified, Solano	3,917	27.1
6.	Sacramento City Unified, Sacramento	7,330	15.7	6.	Antioch Unified, Contra Costa	4,222	24.5
7.	San Bernardino City Unified, San Bernardino	6,185	11.7	7.	Oakland Unified, Alameda	12,196	24.3
8.	Fresno Unified, Fresno	5,971	8.1	8.	Eastside Union Elementary, Los Angeles	755	22.2
9.	San Francisco Unified, San Francisco	5,078	8.4	9.	Hawthorne, Los Angeles	1,717	20.5
10.	West Contra Costa Unified, Contra Costa	5,066	16	10.	Adelanto Elementary, San Bernardino	1,740	20

The relationship between African-American students and FRMP-eligible students

The second part of the sub-question three examines the relationship between the district level percentage of FRMP-eligible students and of African-American students. Milner (2013) suggests that the study of race as a factor in education outcome has been avoided by supplanting race with socio-economic status in much of the research. Although African-American students have academic outcomes similar to EL and FRMP-eligible students, they are not identified for supplemental funding eligibility under the LCFF. This question considers how likely it is for African-American students to be enrolled in districts with FRMP-eligible students. As the LCFF has avoided the matter of race as it relates to equity in education funding, it is of import to determine if African-American students are receiving funding benefit based on the LCFF poverty status of the district in which they are enrolled.

The correlation between the district-level percentage of African-American students and the unduplicated pupil count as a percentage of district enrollment students is weak (r=.15). As shown in *Figure 11*, African-American students are enrolled across districts along the continuum from 0-100% of unduplicated count enrollment. The data also indicate that 17.75% of African-American students are enrolled in districts that do not receive a concentration grant allocation. The findings indicate that FRMP-eligibility at the district level should not be considered a proxy for LCFF supplemental funding for African-American students.

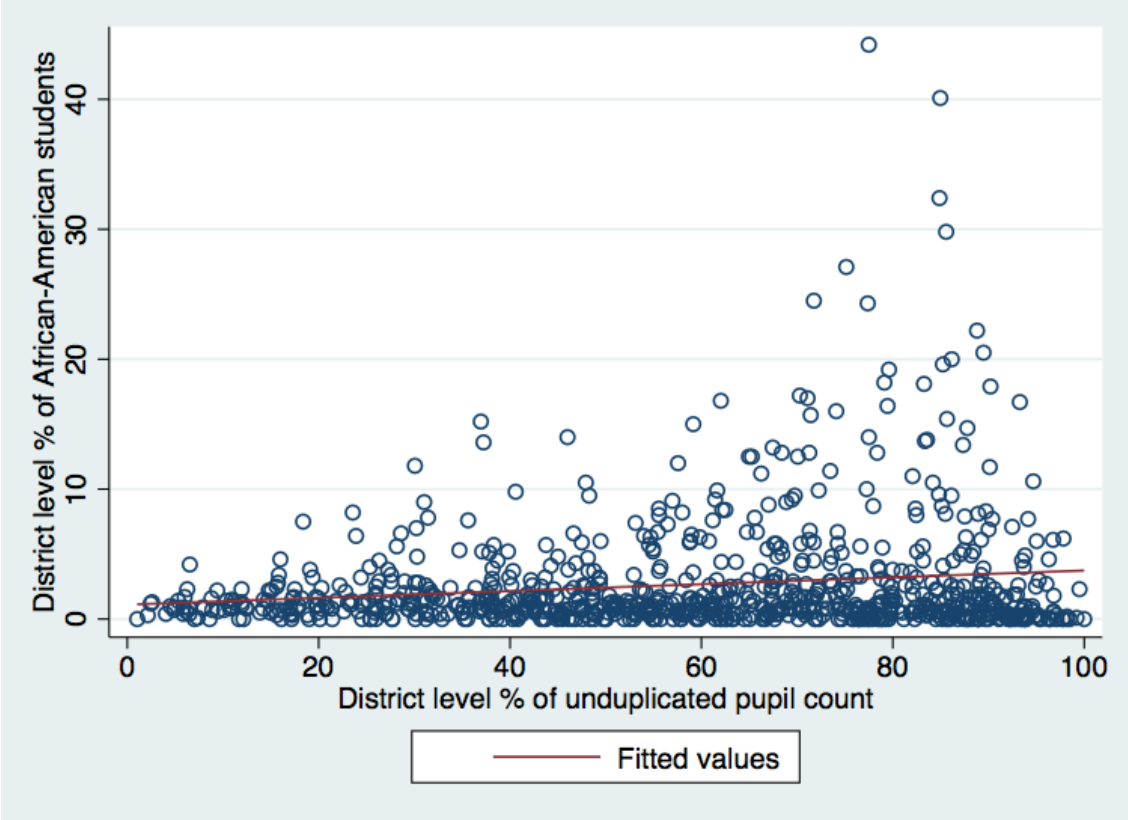

Figure 11. Correlation between the unduplicated pupil count and African-American students across school districts in California 2017-2018.

Research Question Two

RQ2. How does the district-level per-pupil composition of LCFF, Other State, Federal, and Local funding compare pre- and post-LCFF (2012-2013 and 2017-2018)?

Research question two examines and compares district level per-pupil funding data pre- and post-LCFF for evidence of distribution justice, met when concentration grant eligible districts are allocated greater funding than non-eligible districts. A second measure of distribution justice is examined in research question two by comparing the funding gap as a percentage of the lower allocation, between concentration grant eligible and non-eligible districts, pre- and post-LCFF. A post-LCFF gap increase in allocations

favoring concentration grant eligible districts, or gap decrease in allocations favoring non-eligible districts, are both indicative of distribution justice.

Although the LCFF funding allocation is the primary funding resource for school districts across California, total district funding per student includes monies from three additional sources - Other State funding, Federal funding and Local funding. Measuring the comparative effect of the new formula on targeted student groups includes consideration of the weighted funding allocation *and* of potentially regressive or progressive allocations from other resources. The latter can include relative changes in funding for targeted groups or relative changes in funding for non-targeted groups. Accordingly, a pre- and post-LCFF comparison between allocated dollar amounts is conducted to examine how LCFF monies compares to the former Revenue Limit allocation (the allocation from the previous funding model that equates to the LCFF allocation) ; and to determine if Other State, Federal, and Local funding, remain at the same levels post-LCFF across the 778 districts in the study.

Given the intention of the LCFF is to provide targeted funding to identified student categories and with specific provision within the formula to support concentrations of those students, comparisons between the old and new funding model are also made between non-eligible and concentration grant eligible districts. Finally, analyses of funding gaps between non-eligible and concentration grant eligible districts *within* each year (2012-2013 and 2017-2018) are compared *between* both years to determine if funding gap differences pre- and post-LCFF indicate that the new model is increasing the redistribution of funding to support targeted groups as intended. For ease of comparison between funding dollar amounts in both years of interest, the Consumer

Price Index (CPI) inflation calculator is used to convert January 2013 dollar amounts to January 2018 dollar amounts for all analyses (Bureau of Labor Statistics, 2019).

Key findings from research question two show that per student district level funding has increased significantly post-LCFF. Independent of dollar amount increases, evidence of the LCFF as a progressive funding model (distribution justice) include greater LCFF allocation to districts with higher concentrations of targeted students, specifically FRMP-eligible students, as compared to districts with lower numbers of targeted students. Distribution justice for students in poverty under the new model is thus confirmed. The Federal allocation, although reduced post-LCFF, follows a similar progressive pattern, appropriating comparatively more dollars for concentration-grant districts. The Other State allocation is reduced post-LCFF with some evidence of regressive funding in applying greater reductions to concentration grant eligible districts compared to non-eligible districts. This is at odds with the intent of the LCFF and of interest given both allocations come from the State. Local funding follows a similarly regressive distribution. Both the Other State and Local funding are thus indicative of distribution injustice. All results are examined in detail below.

How does district level total funding per-pupil compare pre- and post-LCFF?

The first sub-question compares district level total funding per student pre- and post-LCFF (2012-2013 and 2017-2018). *Figure 12* shows the 2012-2013 distribution of total funding per student in the 778 school districts included in the study. Although the bulk of districts are concentrated in the $7000-$11,000 range, total per-pupil funding levels vary substantially across the state. While the difference between the lowest and highest funded district remains large in 2017-2018, overall funding across districts has

clearly increased significantly as shown in *Figure 13*. As the LCFF ensures a basic minimum funding level, none of the 778 districts in the study receives extremely low per-pupil funding relative to other districts. In the current sample, only 4.37% of districts (38) receive less than $10,000 per-pupil and the lowest per-pupil funded district is well above the $9000 mark ($9,242). Although the majority of post-LCFF districts are concentrated between the $10,000-$15,000 range, some districts do receive considerably greater funding due either to a state-determined need such as additional transportation costs for

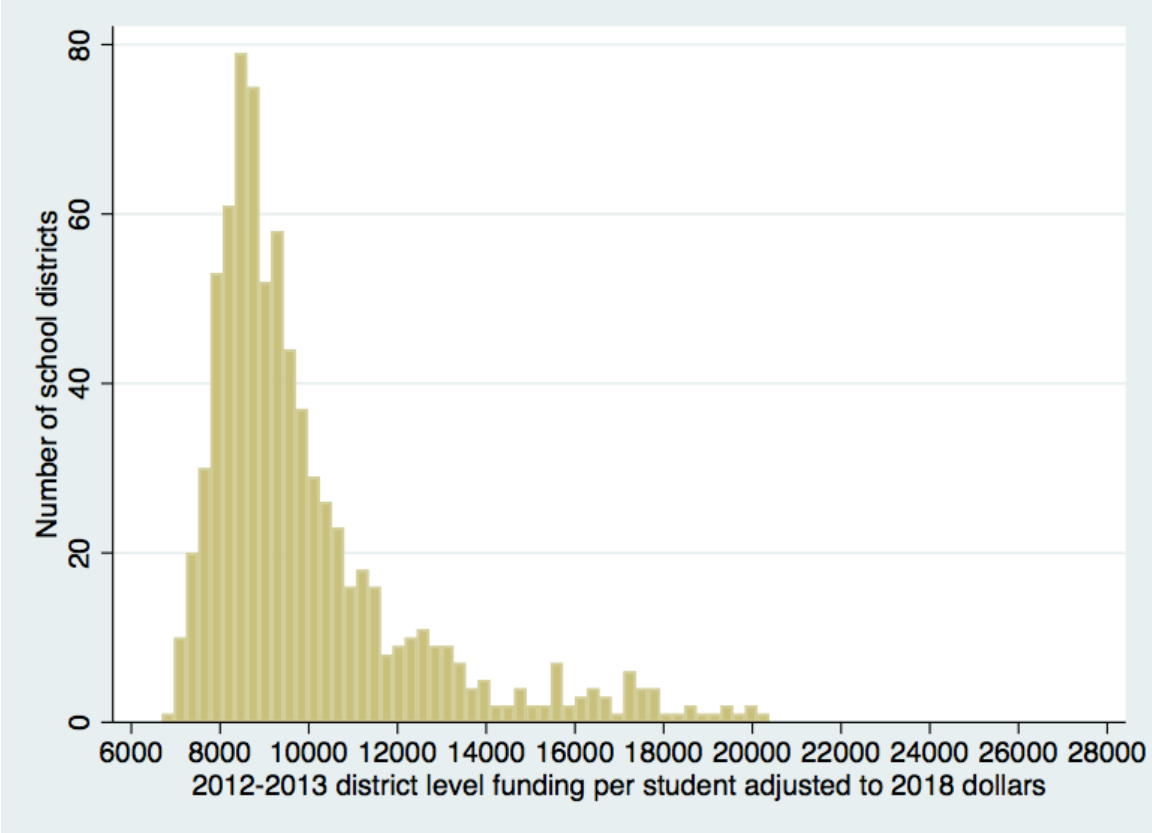

Figure 12. Distribution of total per student funding across 778 school districts in California 2012-2013 converted to 2018 dollars.

rural districts and costs related to being a small district. Additionally, some "basic aid" districts are able to independently raise local or federal resources in excess of their state-determined LCFF allocation and are entitled to keep the excess revenue. In the current sample 32 districts are allocated greater than $20,000 per student.

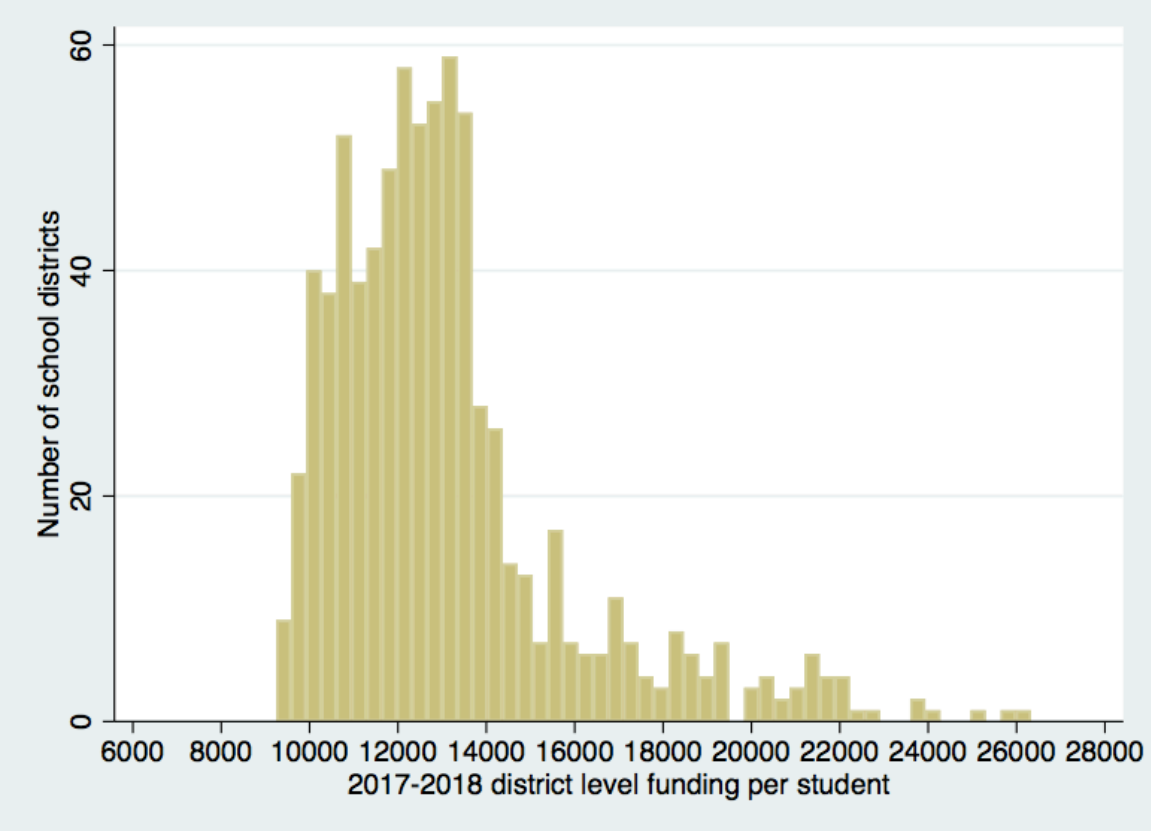

Figure 13. Distribution of total per student funding across 778 school districts in California 2017-2018.

Table 18 provides more detailed information on per-pupil funding pre- and post-LCFF across all districts in the study, and shows the contributions from the four primary funding sources and the per-pupil funding totals. As noted above and consistent with

Table 18. *District Level Per-Pupil Funding Comparison 2012-2013[a] and 2017-18 Dollars (N=778)*

	2012-2013 adjusted to 2018 dollars				2017-2018			
	Range % of total revenue	Mean % of total revenue	Range $ amount	Mean $ amount (*SD*)	Range % of total revenue	Mean % of total revenue	Range $ amount	Mean $ amount (*SD*)
Total revenue			6,690-20,383	9,960 (2,456)			9,242-26,326	13,129 (2,797)
Revenue Limit/ LCFF[b]	30.31-89.66	65.97	4,906-18,275	6,513 (1,682)	48.05-91.69	78.19	7,542-21,974	10,201 (2,038)
Other state revenue	.51-41.88	17.50	69-6,489	1,733 (798)	0-35.47	9.04	0-7,800	1,178 (479)
Federal revenue	0-39.75	7.53	0-7,092	785 (669)	.55-32.50	5.08	65-6,867	684 (563)
Local revenue	.14-45.09	8.88	11-7,634	928 (896)	0-42.00	7.69	0-9,971	1,066 (1,079)

[a] 2012-2013 amounts adjusted to 2018 dollars
[b] Prior to the LCFF distribution model, Revenue Limit funding, a combination of state and local property taxes, was the primary funding stream from the state. As such, Revenue Limit funding is a proxy for the LCFF allocation.

previous research, the 2012-2013 Revenue Limit allocation is considered comparable to the LCFF allocation. Standard deviations for amounts in both years indicate considerable variability, most particularly in Federal and Local allocations. Variation in the LCFF allocation may be a reflection of the continuum of funding per the formula, with districts receiving additional supplemental funding of 20% over the base amount for each formula-eligible student. In districts with concentrations of supplemental grant eligible students over 55%, a further allocation of 50% over the base is given for each additional supplemental eligible student. Comparing both years, the LCFF per-pupil allocation represents an increase over the Revenue Limit amount both in dollars, $10,201 compared to $6,513, and as a proportion of total funding per student, 78.19% compared to 65.97%. The Local fund dollar amount also increases, $928 per student to $1,066, but decreases as a proportion of total per student funding post-LCFF, 7.69% compared to 8.88%. Of interest, both Other State and Federal allocations show a decrease post-LCFF. Notwithstanding that decreases from Other State, Federal and Local funding streams as respective proportions of total per-pupil funding, are expected given the comparative increase of LCFF monies over the Revenue Limit amount, decreases in actual dollar amount allocations could impact the LCFF appropriation. Funding decreases between both years of interest are discussed below.

How does the district level per-pupil allocation from the four funding resources compare pre- and post-LCFF?

The second sub-question compares allocations between both years from all four funding resources. In consideration of the LCFF concentration grant provision, districts in both years are divided into two groups, those that are not concentration grant eligible

(*n*=354) and those that are concentration grant eligible (*n*=424). As noted above, the 2012-2013 FRMP-eligible percentage level is considered a proxy for calculating the unduplicated pupil count in assigning districts to the concentration grant eligible category. *Figure 14* provides a visual on the pre- and post-LCFF composition of district level mean total per-pupil funding from the fours resources, with 2012-2013 amounts adjusted for inflation to 2018 dollars. Again, clearly overall per-pupil funding has increased significantly since the new funding formula was implemented. It appears that variation in funding totals across the three categories under comparison in *Figure 14* (all districts, concentration-grant eligible districts, non-eligible districts) has also increased, with the greatest difference being between 2017-2018 concentration-grant eligible districts and non-eligible districts. This provides some indication that the

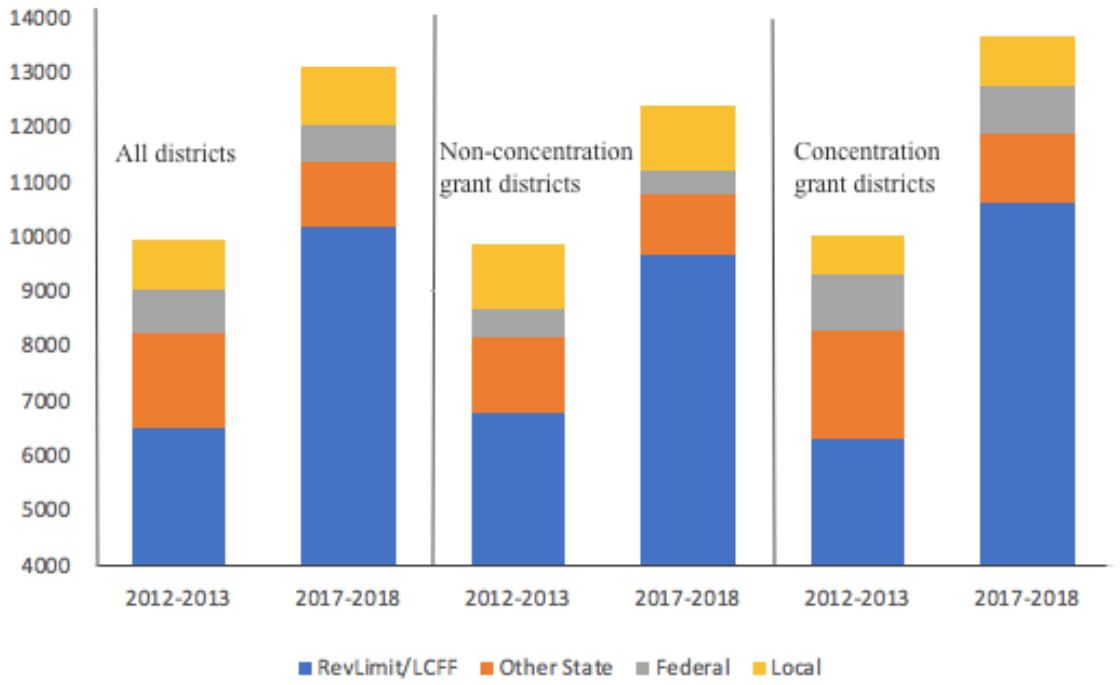

Figure 14. Composition of district level per-pupil funding by funding resource 2017-2018 and 2012-2013 (adjusted to 2018 dollars).

LCFF is working as intended to provide more resources to formula-identified student groups, and specifically to districts with concentrations of targeted students.

Table 19 details pre- and post-LCFF district level per student dollar amounts from each funding source in non-eligible and concentration grant eligible districts. In consideration of large variability in funding as indicated by the standard deviations noted in Table 18, data are given for funding levels each at the 25th, 50th and 75th percentile. However, unless otherwise noted, reporting below is on data at the 50th percentile. Funding differences detailed in the analyses as shown in Table 19, are calculated by subtracting the 2012-2013 allocation from the 2017-2018 allocation. A negative value indicates that the 2012-2013 allocation is greater and a positive value indicates the 2017-2018 allocation is greater.

Revenue Limit allocation (2012-2013) and LCFF allocation (2017-2018)

As shown in Table 19, the LCFF amount increased over the Revenue Limit allocation by $2,922 (49.39%) in concentration grant non-eligible districts and $4,189 (77.14%) in eligible districts. This remarkable increase in funding is primarily representative of the additional tax revenue directed to public education under Proposition 55 (2016); while patterns of distribution, for example, the difference in non-eligible and concentration grant eligible districts, are reflective of the new funding formula. Independent of the components of the new formula, the data show that the single greatest change pre- and post-LCFF is the general increase in State funding for public education. As noted above, although weighted funding is allocated for targeted groups through the LCFF, measuring the comparative effect of the new formula includes consideration of post-LCFF funding

Table 19. *District level differences in per-pupil funding by resource 2012-2013[1] and 2017-2018: All districts (N=778), non-concentration grant eligible districts (n=354) and concentration grant district (n=424).*

	Revenue Limit/LCFF ($)			Other State ($)			Federal ($)			Local ($)			Total ($)		
	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile
Non-concentration															
2012-2013	5,651	5,916	6,928	1,019	1,277	1,697	316	414	573	552	820	1,323	8,119	9,022	10,755
2017-2018	8,320	8,838	9,965	874	998	1,229	278	374	493	559	871	1,400	10,491	11,398	13,307
Difference	2,669	2,922	3,037	-145	-279	-468	-38	-40	-80	7	51	77	2,372	2,376	2,552
Concentration															
2012-2013	5,604	5,822	6,378	1,488	1,836	2,255	645	809	1,145	382	633	932	8,586	9,245	10,530
2017-2018	9,793	10,313	10,937	977	1,173	1,422	594	745	1000	436	693	1,059	12,248	13,088	14,090
Difference	4,189	4,491	4,559	-511	-663	-833	-51	-64	-145	54	60	127	3,662	3,843	3,560

[1] 2012-2013 adjusted to 2017-2018 dollars amount

[2] Difference refers to the difference between 2012-2013 and 2017-2018 dollar amounts

decreases from other resources for LCFF-targeted groups and funding increases for non-targeted groups, and vice-versa.

Other State allocation (2012-2013 and 2017-2018)

A paired-samples t-test confirms a statistically significant difference between the Other State funding level pre-LCFF (*M*=$1,734, *SD*=$798) and post-LCFF (*M*=$1,178, *SD*=$479) ; *t*(777)=-19.40, *p*=0.00. Table 19 data shows that the district level Other State allocation decreased across students post-LCFF, with the decrease being greater in concentration grant eligible districts ($663 - 36.11% decrease in Other State funding post-LCFF) as compared to non-eligible districts ($279 - 21.84% decrease in Other State funding post-LCFF). The noted gap between concentration grant non-eligible and eligible districts is addressed in the next subquestion below. In terms of negative impact on the LCFF allocation, the loss in Other State funding to concentration grant non-eligible districts equals 9.55% of the per-pupil revenue increase from the LCFF amount. In concentration grant eligible districts, that amount is equal to 14.76% of the additional per-pupil monies provided by LCFF. Both amounts represent levels of funding regressivity and the greater loss in concentration-grant districts indicates that concentrations of LCFF-targeted students are more negatively impacted by decreases in the Other State allocation amount.

Federal resource allocation (2012-2013 and 2017-2018)

The Federal allocation also decreases in 2017-2018 as compared to the 2012-2013 amount, albeit with a smaller impact given the Federal resource is less overall. A paired-samples t-test establishes that there is a statistically significant difference between the Federal funding level pre-LCFF (*M*=$785, *SD*=$669) and post-LCFF (*M*=$684,

SD=$563), *t*(777)=-8.12, *p*=0.00. As detailed in Table 19, the decrease in concentration grant non-eligible districts was $40 (9.66% decrease in Federal funding post-LCFF)), and concentration grant eligible districts was $64 (7.91% decrease in Federal funding post-LCFF). As with the Other State resource, this difference between the Federal allocation to non-eligible and concentration grant eligible districts is addressed in the next section of this chapter. Regarding the negative impact of decreased Federal funding on the LCFF amount, the average loss across all districts was equal to 1.37% of the LCFF allocation in concentration grant non-eligible districts, and 1.14% in eligible districts. While these percentages are small, they represent dollar amounts into the millions when applied to students across the state. For example, in the state's largest school system, LAUSD with 655,494 students, the loss in 2017-2018 Federal funding, measuring LAUSD conservatively as being at the 50th percentile in concentration grant eligible districts, is $41,951, 616.

Local resource allocation (2012-2013 and 2017-2018)

Regarding Local resources, a paired-samples t-test shows a significant difference between the Local funding level pre-LCFF (*M*=$928, *SD*=$896) and post-LCFF (*M*=$1066, *SD*=$1079), *t*(777)=5.88, *p*=0.00. Post-LCFF, concentration grant non-eligible districts saw an increase of $51 (6.22% increase in Local funding post-LCFF), with eligible districts receiving an average of $60 more per student (9.48% increase in Local funding post-LCFF). The gap between the Local resource allocation to concentration grant non-eligible and eligible districts is examined in the next section of this chapter. Although these increases in some measure ameliorate against the Other State and Federal allocation losses, they do not fully compensate for the decreased revenue.

Post-LCFF total per pupil funding increases compared to the final year of the old funding formula balance out $2,376 (26.33% in total funding per student post-LCFF) in concentration grant non-eligible districts and $3,843 (41.57% total funding per student) in eligible districts. Total dollars lost from the LCFF allocation due to decreases in Other State and Federal amounts include $546 (18.69% of the LCFF allocation) in concentration grant non-eligible districts; and $648 (14.42% of the LCFF allocation) in eligible districts. These amounts are astronomical when applied to over half a million students enrolled in school districts across the state, running into billions of dollars annually.

How does the gap in district level per-pupil allocations between concentration grant non-eligible and eligible districts compare pre- and post-LCFF?

The findings above show post-LCFF dollar amount increases in the LCFF (compared to Revenue Limit), Local and total per student allocations; and dollar amount decreases of significance in the Other Local and Federal allocation amounts. This sub-question examines the distribution of those allocations pre- and post-LCFF. Table 20 details funding gaps for each resource between concentration grant non-eligible and eligible districts *within* each year of interest (2012-2013 and 2017-2018). Funding differences as detailed are calculated by subtracting allocations to non-eligible districts from allocations to concentration grant eligible districts. A negative value indicates that the non-eligible district receives greater funding and a positive value indicates the concentration grant eligible district receives greater funding. For the Revenue Limit and LCFF allocations respectively, this information is a gauge of distribution difference to non-eligible as compared to concentration grant eligible districts. Comparing the findings

Table 20. *District level per-pupil funding by resource non-concentration grant eligible districts (n=354) and concentration grant district (n=424), 2012-2013[1] and 2017-2018:*

	Revenue Limit/LCFF ($)			Other State ($)			Federal ($)			Local ($)			Total ($)		
	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile
2012-2013															
Non-concentration	5,651	5,916	6,928	1,019	1,277	1,697	316	414	573	552	820	1,323	8,119	9,022	10,755
Concentration	5,604	5,822	6,378	1,488	1,836	2,255	645	809	1,145	382	633	932	8,586	9,245	10,530
Difference[2]	-47	-94	-550	469	559	558	329	395	572	-170	-187	-391	467	223	-225
2017-2018															
Non-concentration	8,320	8,838	9,965	874	998	1,229	278	374	493	559	871	1,400	10,491	11,398	13,307
Concentration	9,793	10,313	10,937	977	1,173	1,422	594	745	1000	436	693	1,059	12,248	13,088	14,090
Difference	1,472	1,475	972	103	175	193	316	371	507	-123	-178	-341	1,757	1,690	783

[1] 2012-2013 adjusted to 2017-2018 dollars amount

[2] Difference refers to the difference between non-concentration district and concentration district dollar amounts

between both years indicates if funding gap differences pre- and post-LCFF redistribution in favor of targeted student groups and particularly of concentrations of those students. As above, in consideration of large variability in funding ranges as indicated by the standard deviations noted in Table 18, data are given for funding levels each at the 25th, 50th and 75th percentile.

Revenue Limit allocation (2012-2013) and LCFF allocation (2017-2018)

With regard to the Revenue Limit allocation, an independent-samples t-test confirms a significant difference between 2012-2013 Revenue Limit allocation to concentration grant eligible districts (*M*=$5,885, *SD*=$440) compared to non-eligible districts (*M*=$6,045, *SD*=$1,028), t(460)=-2.72, p =0.00. The data show that the 2012-2013 Revenue Limit allocation is less for concentration grant eligible districts over non-eligible districts and the funding gap, while initially small, increases as the allocation increases - $47 (.08% less) at the 25th percentile, $94 (1.61% less) at the 50th percentile, $550 (8.62% less) at the 75th percentile.

The 2017-2018 LCFF allocation marks a powerful reversal of the Revenue Limit trend, with an independent-samples t-test confirming a significant difference between the 2017-2018 LCFF allocation to concentration grant eligible districts (*M*=$10,377, *SD*=$1,241) as compared to non-eligible (*M*=$8,908, *SD*=$1,243), t(555)=19.50, p =0.00. Concentration grant eligible districts receive greater funding than non-eligible districts precipitating a positive funding gap of $1,472 (17.69% greater) at the 25th percentile, $1,475 (16.69% greater) at the 50th percentile, $972 (9.75% greater) at the 75th percentile. That is, the allocation gap under the new funding formula favors districts with concentrations of targeted students. This preference aligns with the intent of the LCFF to

provide additional resources to districts with a higher enrollment of supplemental-grant students.

Other State allocation 2012-2013 and 2017-2018

The Other State resource applies greater funding to concentration grant eligible districts compared to non-eligible districts in both years of the study. An independent-samples t-test shows a significant difference in the 2012-2013 Other State allocation to concentration grant eligible districts (*M*=$2,479, *SD*=$1,002) in comparison with non-eligible districts (*M*=$1,485, *SD*=$531), t(665)=17.67, p =0.00. As detailed in Table 20, the pre-LCFF Other State funding gap favors concentration eligible over non-eligible districts with a gap of $469 (46.02%) at the 25th percentile, $559 (43.77%) at the 50th percentile, and $558 (28.37%) at the 75th percentile. An independent-samples t-test confirms there is also a significant difference in the post-LCFF Other State allocation to concentration grant eligible districts (*M*=$1,580, *SD*=$438) compared to non-eligible (*M*=$1,220, *SD*=$329), t(768)=13.07, p =0.00. However, the positive funding gap does diminish post-LCFF, and the decrease is proportionately greater in concentration grant eligible districts: $103 (11.78%) at the 25th percentile, $175 (17.53%) at the 50th percentile, $193 (15.70%) at the 75th percentile. Thus, the post-LCFF general decrease in the Other State resource negatively offsets increases from the LCFF allocation in all districts, and the relatively greater reduction for concentration grant eligible districts means the LCFF allocation must work harder to compensate for Other State losses in districts with concentrations of targeted students.

Federal resource allocation (2012-2013 and 2017-2018)

The Federal resource also decreases in allocation amount pre- and post-LCFF but as with the Other State allocation, provides more revenue to concentration grant eligible districts over non-eligible districts in both years of the student. An independent- samples t-test confirms that pre-LCFF there is a significant difference in the Federal allocation to concentration grant eligible districts (*M*=$1,020, *SD*=$346) compared to non-eligible districts (*M*=$509, *SD*=$392), t(711)=19.09, p =0.00. Pre-LCFF the allocation to concentration grant eligible districts is twice that of non-eligible districts with positive funding gaps respectively of $329 (104.11%) at the 25th percentile, $395 (95.41%) at the 50th percentile, $572 (99.82%) at the 75th percentile. An independent-samples t-test confirms that post-LCFF there is also a significant difference in the Federal allocation to concentration grant eligible districts (*M*=$938, *SD*=$277) compared to non-eligible districts (*M*=$444, *SD*=$269),t(759)=25.16, p =0.00. Post-LCFF, the gap remains positive and increases slightly to $316 (113.67%) at the 25th percentile, $371 (99.20%) at the 50th percentile, $507 (102.84%) at the 75th percentile. This indicates that the Federal per-pupil allocation while reduced post-LCFF, does not disproportionately impact students targeted for additional resources under LCFF. The new allocation is "gap neutral" and while negatively affecting the LCFF dollar amount allocation does not alter its own pattern of distribution pre- and post-LCFF.

Local resource allocation (2012-2013 and 2017-2018)

An independent-samples t-test confirms a significant difference in the 2012-2013 Local resource allocation to concentration grant eligible districts (*M*=$528, *SD*=$516) as compared to non-eligible districts (*M*=$884, *SD*=$1,014), t(502)=-5.99, p =0.00. The

Local funding resource pre-LCFF allocates greater monies to concentration grant non-eligible districts over eligible districts with funding gaps respectively of $170 (44.50%) at the 25th percentile, $187 (29.54%) at the 50th percentile, $391 (41.95%) at the 75th percentile. Post-LCFF, the gap lessons but remains, with an independent-samples t-test confirming the gap as a significant difference in the 2017-2018 Local resource allocation to concentration grant eligible districts (M=$717, SD=$754) as compared to non-eligible districts (M=$1,967, SD=$1,348), $t(531)$=-4.35, p =0.00. Table 20 details respective negative differences between concentration grant non-eligible and eligible district Local resource allocations of $123 (28.21%) at the 25th percentile, $178 (25.68%) at the 50th percentile, $341 (32.20%) at the 75th percentile. The Local resource distribution is thus considered regressive both pre- and post-LCFF.

Research Question Three

RQ3. How does district-level per-pupil funding for EL, FRMP-eligible and African-American students compare 2012-2013 to 2017-2018?

Inequities in public education historically comprise both a demographic component such as student ethnicity/race or socioeconomic status, and a resource component related to funding allocation. Research question three examines both elements in comparing pre- and post-LCFF funding data for evidence of recognition and distribution justice. While the academic performance of targeted student groups is the most commonly applied metric in research addressing the efficacy of funding reform, this type of input-output analysis is incomplete absent consideration of the actual (re)distribution of resources. Research question three examines the relationship between district-level student demographic groups of interest and funding levels, pre- and post-

LCFF. Comparatively stronger relationships between targeted populations and resource levels are indicative of greater levels of funding progressivity and vice-versa (Chingos & Blagg, 2017). In consideration of the concentration grant allocated to districts with 55% or greater supplemental-grant eligible students, districts are grouped by concentration-grant status. Although particular attention is paid to the 2017-2018 LCFF allocation, the other three funding resources (Other State, Federal, Local) are included in consideration of their impact on the redistributive power of the LCFF amount, as detailed in Research Question Two. The first part of research question three compares dollar amounts in allocations for ELs, FRMP-eligible students and African-American students pre- and post-LCFF. The second part of this question examines funding gaps from each resource for the three demographic groups, between non-eligible and concentration grant eligible districts, *within* each year of interest (2012-2013 and 2017-2018). Comparing the findings between both years indicates if funding gap differences pre- and post-LCFF indicate that under the new formula, monies are redistributed in favor of FRMP-eligible, EL and African-American students or vice-versa.

Results from research question three largely mirror those of research questions one and two. Post-LCFF, funding is increased significantly for students in poverty, ELs, and African-American students respectively. However, greater LCFF allocations for concentrations of ELs and African-American students are dependent on each groups' overlap with FRMP-eligibility. The distribution under the LCFF and Federal allocations evidences funding progressivity (distribution justice) in favoring concentrations of targeted students. Conversely, the Other State and Local distributions favor concentration grant non-eligible districts are considered to be funding regressive (distribution injustice).

All findings are discussed in detail below. Consistent with previous research, the 2012-2013 Revenue Limit allocation is considered comparable to the LCFF allocation. Similarly, the 2012-2013 FRMP-eligible percentage level is considered a proxy for calculating the unduplicated pupil in assigning districts to the concentration grant eligible category. To allow comparison between both years, the Consumer Price Index (CPI) inflation calculator was used to change 2012-2013 dollar amounts into 2017-2018 dollar amounts for all calculations.

How does district-level per-pupil funding for EL, FRMP-eligible and African-American students compare pre- and post-LCFF?

The first sub-question asks how district level per-pupil funding for EL, FRMP-eligible and African-American students compares between 2012-2013 and 2017-2018. Levels of funding from all four funding categories are gathered for 2012-2013 and 2017-2018 for all districts, concentration grant-eligible districts and non-eligible districts. As noted above, for ease of comparison between dollar amounts in both years of interest, the Consumer Price Index (CPI) inflation calculator is used to convert January 2013 dollar amounts to January 2018 dollar amounts. *Figure 15* provides side-by-side comparison of the makeup of total student funding from the four funding per demographic category 2012-2013 and 2017-2018. The mean allocations per student across the state is included as a reference. All groups appear to receive greater per pupil funding post-LCFF, with greater LCFF over Revenue Limit allocations, and an apparent decrease in Other State funding.

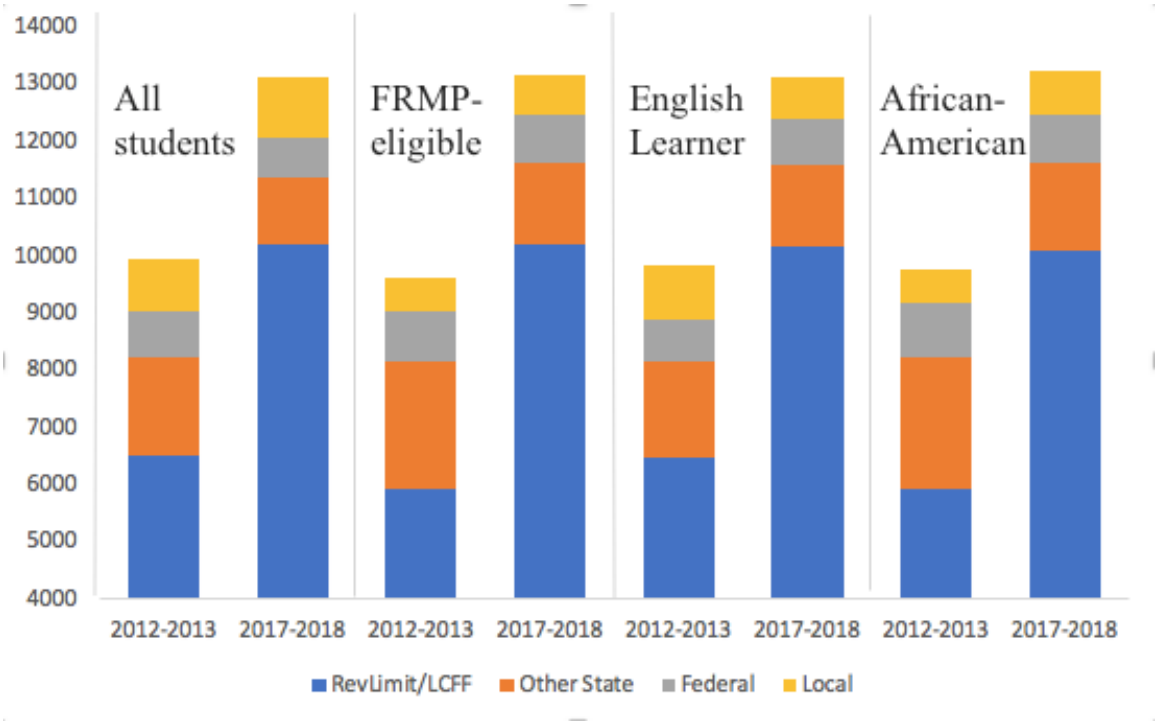

Figure 15. Composition of district level per-pupil funding for all students, FRMP-eligible students, English Learners and African-American students, by funding resource 2017-2018 and 2012-2013 (adjusted to 2018 dollars).

Table 21 shows the district-level per-pupil mean allocation and standard deviation from each funding resource for both years in the study. The data confirm that the 2017-2018 LCFF allocation, Local funding allocation, and total funding amount per pupil, are greater than the 2012-2013 amounts for all groups. The increase in LCFF over Revenue Limit averages $4,247 (71.39%) for FRMP-eligible students, $3,709 (57.31%) for ELs, and $4,198 (70.94%) for African- American students. These increases are primarily representative of a general increase in the State allocation for public education post 2012-2013, independent of the new funding formula. The LCFF allocation is less than the post-LCFF increase in per-pupil total funding amount for all of the demographic categories in Table 21, indicating a decrease in other resources is detracting from the LCFF amount.

Specifically, the average per-pupil total amount is $709 (16.69%) less than the LCCF allocation for FRMP-eligible students ($3,538 compared to $4,247); $402 (10.84%) less than the LCCF allocation for ELs ($3,307 compared to $3,709); and $702 (16.72%) less than the LCCF allocation for African-American students ($3,496 compared to $4,198) for African-American students.

Examination of the Other State and Federal resources shows that both decreased in allocation amount post-LCFF, explaining the difference between the LCFF allocation and per-student total amount noted above. The post-LCFF Other State allocation decreased by $762 (34.54%) for FRMP-eligible students, $257 (15.31%) for ELs, and $811 (34.85%) for African-American students. It is of interest to notice that while per-pupil Federal allocations to the FRMP-eligible and African-American groups are cut by one third post-LCFF, the reduction for ELs is proportionately less than half of that amount (15.31% compared to 34.54% and 34.85%).Similarly, the per-pupil Federal allocation to ELs increases slightly $51 (6.75%) post-LCFF, while declining for the other two groups, by $81 (8.94%) for FRMP-eligible students and $83 (8.90%) for African-American students. The decreases work against the intent of the new formula allocation to provide greater resources to FRMP-eligible and EL students.

Table 21. *District level differences in per-pupil funding by demographic characteristic and funding resource 2012-2013[1] and 2017-2018 (N=778)*

		LCFF/Rev. Limit ($)		Other State ($)		Federal ($)		Local ($)		Total ($)	
Demographic Characteristic	Year	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
FRMP-eligible	2012-13	5,949	698	2,203	950	906	410	564	514	9,621	1,373
	2017-18	10,196	1,057	1,441	434	825	355	697	731	13,159	1,667
	Difference	4,247		-762		-81		133		3,538	
EL	2012-13	6,472	1,680	1,679	707	755	630	923	912	9,829	2,327
	2017-18	10,181	1,078	1,422	424	806	342	727	769	13,136	1,662
	Difference	3,709		-257		51		-196		3,307	
African-American	2012-13	5,918	605	2,327	1,011	933	398	588	656	9,766	1,489
	2017-18	10,116	1,023	1,516	442	850	334	779	899	13,262	1,741
		4,198		-811		-83		191		3,496	

[1] 2012-2013 adjusted to 2017-2018 dollars amount

[2] Difference refers to the difference between 2012-2013 and 2017-2018 dollar amounts

ELs recompense for comparatively greater post-LCFF Other State and Federal amounts by faring more poorly on the 2017-2018 Local allocation compared to FRMP-eligible and African-American students. The post-LCFF Local resource allocation decrease totals $196 (21.23%) to ELs while it increases by $133 (23.70%) to FRMP-eligible and $191 (32.48%) to African-American students. The increase mitigate against but do not compensate for decreases in the Other State and Federal amounts.

How does the gap between district level per-pupil allocations for EL, FRMP-eligible and African-American students differ between non-eligible and concentration grant eligible districts compare pre- and post-LCFF?

The findings above show post-LCFF dollar amount increases in the LCFF (compared to Revenue Limit) and total per student allocations for FRMP-eligible, EL and African-American students; and post-LCFF dollar amount increases in the Local allocation for FRMP-eligible and African-American students. The data show post-LCFF decreases in average Other State and Federal dollars to all three groups. This sub-question examines the distribution of the resource allocations to each group pre- and post-LCFF by examining the funding gaps within each year between the non-eligible and concentration grant eligible districts allocations; and comparing gaps between both years, 2012-2013 and 2017-2018. For the Revenue Limit and LCFF allocations respectively, this information is a measure of any distribution difference to non-eligible as compared to concentration grant eligible districts. Comparing the findings from the other resources indicates if funding gap differences pre- and post-LCFF redistribute in favor (or not) of LCFF-targeted student groups and of African-American students, and particularly of concentrations of those students.

In consideration of large variability in funding ranges as indicated by the standard deviations noted in Table 21, data are given for funding levels each at the 25th, 50th and 75th percentile. Unless otherwise noted, reporting below is on data at the 50th percentile. Independent-samples t-tests confirm as significant differences between allocations to concentration grant eligible and non-eligible districts from all four funding resources (Local Revenue/LCFF, Other State, Federal, Local), in both 2012-2013 and 2017-2018. The t-tests data is detailed in Appendix A.

As detailed in Table 22, the data show that the 2012-2013 Revenue Limit allocation is marginally greater for FRMP-eligible, EL and African-American students in concentration grant eligible districts over non-eligible districts; $35 (0.01%) greater for FRMP-eligible students, $24 (>0.00%) greater for ELs, and $40 (0.01%) greater for African-American students. The 2017-2018 LCFF allocation is $1,659 (18.99%) greater for FRMP-eligible students, $1,524 (17.25%) greater for ELs, and $1,728 (20.02%) greater for African-American students, in concentration grant eligible districts as compared to non-eligible districts. Keeping in mind that the LCFF is independent of actual state budget allocation to education, this percentage difference is evidence of the formula's intent to provide greater fiscal support to concentrations of targeted students, especially when compared to the 2012-2013 gap between concentration grant non-eligible and eligible district allocations.

While the Other State dollar amount allocation decreases for all groups post-LCFF, of greater interest, the gap between concentration grant non-eligible and eligible districts also decreases. This indicates that the distribution of Other State dollars post-LCFF is regressive in providing comparatively less funding to concentrations of LCFF-

Table 22. *District level per-pupil funding by demographic characteristic 2012-2013[1] and 2017-2018: Non-concentration grant eligible districts (n=354) and concentration grant district (n=424).*

	Revenue Limit/LCFF ($)			Other State ($)			Federal ($)			Local ($)			Total ($)		
Year/Demographic	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile	25%ile	50%ile	75%ile
2012-13 FRMP-elig															
Non-concentration	5,711	5,790	6,237	1,166	1,460	1,830	381	456	578	381	636	848	8,123	8,623	9,449
Concentration	5,738	5,825	5,872	1,581	2,096	2,781	709	925	1,269	244	374	679	8,684	9,487	10,552
Difference	27	35	-365	415	636	951	328	469	691	-137	-262	-169	561	864	1,103
2017-18 FRMP-elig															
Non-concentration	8,456	8,734	9,246	944	1,089	1,508	354	418	500	453	640	910	10,707	11,081	11,731
Concentration	9,934	10,393	10,951	1,111	1,505	1,938	686	843	1,233	309	564	754	12,582	13,359	14,382
Difference	1,478	1,659	1,705	167	416	430	332	425	733	-144	-76	-156	1,875	2,278	2,651
2012-13 EL															
Non-concentration	5,705	5,790	6,346	1,135	1,455	1,830	379	446	548	423	667	913	8,160	8,645	9,590
Concentration	5,718	5,814	5,872	1,625	2,096	2,781	713	949	1,269	244	400	680	8,648	9,468	10,517
Difference	13	24	-474	490	641	951	334	503	721	-179	-367	-233	488	823	927
2017-18 EL															
Non-concentration	8,443	8,834	9,246	953	1,122	1,508	342	405	494	462	658	941	10,727	11,081	11,732
Concentration	9,953	10,358	10,923	1,108	1,423	1,896	685	834	1,231	310	564	800	12,601	13,338	14,232
Difference	1,510	1,524	1,677	155	301	388	343	429	737	-152	-94	-141	1,874	2,257	2,500
2012-13 AA															
Non-concentration	5,703	5,787	6,001	1,052	1,482	1,830	362	417	548	367	650	925	7,943	8,488	9,192
Concentration	5,780	5,827	5,872	1,638	2,427	3,596	700	1,130	1,269	233	251	664	8,690	10,045	11,427
Difference	77	40	-129	586	945	1,766	338	713	721	-134	-399	-261	747	1,557	2,235
2017-18 AA															
Non-concentration	8,390	8,630	8,853	939	1,102	1,508	333	389	482	435	615	988	10,620	10,940	11,624
Concentration	9,854	10,358	10,951	1,175	1,680	1,971	714	910	1,233	309	564	814	12,633	13,369	15,195
Difference	1,464	1,728	2,098	236	578	463	381	521	751	-126	-51	-174	2,013	2,429	3,571

[1] 2012-2013 adjusted to 2017-2018 dollars amount

Note. "Difference" is difference in dollars between non-concentration and concentration grant districts

targeted students compared to the pre-LCFF amount. Specifically, FRMP-eligible students in concentration grant eligible districts received 43.5% ($636) greater funding compared to non-eligible districts pre-LCFF, and 38.20% ($416) greater funding post-LCFF. Similarly, the funding gap for concentrations of ELs compared to non-concentrations was reduced from 44.05% ($641) to 26.83% ($301); and from 63.76% (945) for African-American students to 52.45% ($578).

The loss in revenue to students in concentration grant eligible districts and for which the LCFF-allocation needs to compensate is cumulatively large across the state. For example, with regard to FRMP-eligible students in concentration grant eligible districts, if the Other State allocation at remained at pre-LCFF proportions, the 2017-2018 dollar amount difference between non-eligible and concentration grant eligible districts would be $474 per student instead of $416. This $58 difference adds up to over 1.5 billion dollars ($155,499,276) in lost revenue when applied to the 2,681,022 FRMP-eligible students in concentration grant eligible districts across the state 2017-2018.

Analysis of the Federal allocation gap between concentration grant non-eligible and eligible districts shows that although the proportional difference declined slightly between both years in the study for FRMP-eligible students, the allocation is essentially double in concentration grant eligible districts both pre- and post- LCFF (respectively 103% greater than non-eligible districts in 2012-2013 and 102% greater in 2017-2018). EL students in concentration grant eligible districts see a proportional reduction in the Federal amount from being 113% greater than non-eligible districts 2012-2013 to 106% greater in 2017-2018. African-American students in concentration grant eligible districts are subject to the greatest funding gap reduction pre- and post-LCFF, from a 2012-2013

Federal resource allocation of 171% of the concentration grant non-eligible district amount to 134% in 2017-2018.

The final funding source for discussion is the Local resource allocation. Pre-LCFF, FRMP-eligible students in concentration grant eligible districts were allocated 41.19% ($262) *less* than those in non-eligible districts. This gap decreases to 11.88% ($76) less in 2017-2018 indicating that Local resource funding post-LCFF, while continuing to favor students in concentration grant non-eligible districts, is less regressive in terms of support for concentrations of FRMP-eligible students. A similar trend is found for ELs with a pre-LCFF 55.02% ($367 more for non-eligible districts) difference between the non-eligible and concentration grant eligible districts decreasing to a post-LCFF gap of 14.29% ($94 more for non-eligible districts). For African-American students, the positive decrease in the funding gap is even more marked with students in concentration grant non-eligible districts receiving a 61.38% ($399) greater Local allocation pre-LCFF reduced to an 8.29% ($51) greater allocation post-LCFF. Thus, while the Local funding resource continues to be primarily funding regressive when examined in terms of the LCFF focus on providing greater support to concentrations of targeted students, it appears to be less regressive post-LCFF.

Summary

Chapter Four examined the composition of district-level LCFF-funding eligibility categories by student FRMP eligibility, EL status, and for African-American students; conducted a comparison between pre- and post-LCFF district-level allocations from the four funding resources; and analyzed the relationship of groups targeted for LCFF supplemental funding and of African-American students, to resource allocations pre- and

post-LCFF. The results indicate that the unduplicated count provision of the LCFF invisibilizes EL status at the district level in favor of FRMP-eligibility as a determinant of formula application. The LCFF allocation provides an increase in funding to all student groups in the study and consistent with the focus of new formula, increases are greatest in concentration grant eligible districts. The data show however that increased resources from LCFF allocations are tempered by decreases from the Other State and Federal resources and that concentration grant eligible districts are disproportionately negatively affected by these decreases. While Local funding has increased post-LCFF, it continues as it did pre-LCFF, to lend greater support to non-eligible over concentration grant eligible districts.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The current study examines the LCFF for evidence of support for targeted student groups (FRMP-eligible and EL students) and for African-American students by examining the instrumental application of the formula to determine beneficiaries and losers. This chapter reconsiders the results of the quantitative analysis from Chapter Four with attention to how funding reform under LCFF is situated within a larger historical social and political discourse, around equity and justice in education. Nancy Fraser's theory of a bifurcated recognition and (re)distributive justice is applied as a lens through which to examine the research results. Recognition justice is measured in two ways. The first, the affirmation of an identity, is measured by inclusion of an identified group within the new funding formula as a group targeted for additional resources. The second, recognition justice as parity of participation, is measured by comparing the proportions of targeted groups that make up the unduplicated pupil count, driving the supplemental and concentration grant allocations. A strong correlation between the two is indicative of the strength of the group as a funding determinator under LCFF and vice-versa. Distribution justice is measured via evidence of a progressive funding favoring concentrations of targeted groups as compared to non-targeted groups.

This chapter concludes with recommendations for future research and for policy consideration.

Research Question One Discussion

RQ1. How are school districts in California defined in terms of student demographic categories identified in the LCFF 2017-2018?

Research question one is focused on examining recognition justice within LCFF. Recognition justice, as the affirmation of specific identity via inclusion as a targeted group in the new funding formula, is afforded to FRMP-eligible students and to ELs. The new formula uses district-level data on targeted groups to determine how LCFF resources are distributed across the state. Recognition justice as parity of participation is measured by comparing the district level number of students in each targeted groups to the district's unduplicated pupil count. Results show that the FRMP-eligible group is working as the primary determinator of allocations and is afforded parity of participation in the formula as designed. Conversely, the data show that ELs do not count as a determinant for the LCFF appropriation. EL status does not drive funding and ELs are denied parity of participation under the LCFF. African-American students are denied both forms of recognition justice. Firstly, African-Americans are not identified as an LCFF targeted group and secondly, they are thus also denied opportunity to participate as a driver of funding allocation under new formula.

The data indicate that the scale of poverty in districts across the state is massive and that FRMP-eligibility is the deciding factor in formula implementation both at the supplemental grant level and the concentration grant level, with the correlation between FRMP-eligibility and the unduplicated pupil count being r=.97. This finding is similar to data from Bruno's study of 2016-2017, (r=.99) (2018, p.18). The data show that FRMP-eligibility surpasses EL enrollment in all but four of the 778 districts in the study, 2017-2018. As the four districts enroll only .0002% of students in the study, EL status as a determining factor in LCFF allocation is essentially redundant due to the unduplicated pupil count provision. As an instrument of recognition and distribution justice, the new

formula accords FRMP-eligible students both justices; and the composition of the formula as determinant of funding distribution at the level of district, demonstrates pursuit of educational parity for students in poverty.

Regarding ELs, the data show that application of the formula invalidates an initial recognition justice, as EL status as a special group in need of additional resources within the formula is nullified as a funding distribution factor in favor of FRMP-eligibility, due to the unduplicated pupil count. Demographic data on enrollment for FRMP-eligible and EL students across the state for the years leading up to and since the implementation of the new formula, indicate that levels for both groups remain fairly stable for the five years pre- and post-LCFF (*Figure B1, Appendix B*). Specifically, EL and FRMP-eligible students consistently make up around 25% and 55% respectively of total State enrollment. Thus, LCFF architects designed the formula with sufficient knowledge to understand that application of the new formula would determine EL status to be subordinate to FRMP-eligibility for the purposes of funding allocation; and contrary to the purported focus of targeting additional resources for ELs under LCFF. While additional resources are allocated to ELs who are also identified as FRMP-eligible, the overlap between these groups is not absolute. Notwithstanding some benefit via FRMP-eligibility, EL students are not afforded an authentic recognition justice under the LCFF. The relationship between FRMP-eligible and EL groups is considered in greater detail below.

It is difficult to underestimate the phenomenal loss of targeted funding for ELs due to the unduplicated pupil count provision. Consider for example, the 2017-2018 K-3 appropriation for a student who is *both* FRMP-eligible and EL. Under the 2017-2018

LCFF model, all districts would be allocated $7,941 of base funding for the student plus $1,588 of supplemental funding (20% over base) due to the student FRMP-eligibility status. In concentration grant districts, an additional $3,970 (50% over based) would be allocated if the student is included in the count over the 55% concentration grant threshold for FRMP-eligible students. Total district appropriation for the student would thus be $13,499. Under the same model but with pupil counts being duplicated such that the appropriate includes both FRMP-eligibility and EL status, that sum potentially increases by 70.83% to $19,057. This amount includes an additional supplemental $1,588 due to student EL status, and an additional concentration grant allocation of $3,970 if the student is included in the count over the 55% concentration grant threshold for EL students. This example is not for the purposes of discussing specific dollar amount comparisons. Indeed, it is unlikely that concentration grant status could be duplicated as ELs rarely comprise 55% of pupil enrollment. Also, given the concentration grant counts only after the 55% of enrollment threshold is reached, that allocation averages out to about 22.5% per student in a district with 100% eligible students, rather than the 50% detailed above. The point is, notwithstanding the complications of a duplicated count, excluding ELs within formula calculations that do not account for supplemental grant eligibility in two categories, results in a tremendous and unjust funding disadvantage to districts with EL students.

Given EL status is rendered impotent under the current version of the LCFF, the examination of targeted LCFF apportionment to ELs is essentially a study in the intersection of poverty with EL status. The correlation between FRMP-eligibility and ELs in the current study is fairly high (r=.58), but of note is lower than in similar research by

Bruno using 2016-17 data (ELs and unduplicated pupil count $r = .72$) (2018, p.18), and lower than CDE reports indicating that 86% of enrolled ELs are also FRMP-eligible (California Department of Education, 2018c). Regardless of overlap, the research is clear that ELs require additional resources (Hill, 2012; Verstegen, 2017) and that, unlike the LCFF, such resources should be independent of funding weighted for students in poverty (Gandara & Rumberger, 2006). Thus, under the new formula, ELs are provisionally accorded some level of recognition justice as a student group deserving of additional resources to obtain equal educational opportunity, while substantively denied justice at the level of formula application and of the distribution of actual funds to districts. The distribution of funding does not provide targeted allocations in support of equal educational opportunity to this identified student group. Keeping in mind that in 2017-2018, 1,166,087 students were identified as EL, the scale of their omission from the benefits of the weighted funding is remarkable.

As discussed in the literature review, in the United States policy on language and education are typically an indication of a larger political conversation about immigration and identity. In response to national anti-immigrant sentiment and action, California voters passed Proposition 58 (2016) providing for ELs to learn English through multiple programs outside of English immersion classes; and the legislature passed Senate Bill 54 (2017), limiting how much local law enforcement can cooperate with federal authorities to enforce immigration law. Since 2017, many school districts have also passed board resolutions declaring districts and schools safe havens from deportation. It is disappointing that targeted funding for students who speak a primary language other than

English is not manifested through the application of the new formula, as the success of racist and anti-immigrant politics relies on student differences remaining unrecognized. However, the inclusion of ELs in the LCFF symbolically lends a measure of recognition to the group even while the lack of related funding renders such recognition, justice-deficient.

Although the LCFF successfully targets groups of FRMP-eligible students for additional resources and many of those students are also EL, the data on African-American students provide evidence that poverty as a student characteristic in the new funding formula, is not a reliable substitute for race. The data show that in 2017-2018 African-American students are poorly correlated with FRMP-eligibility (r=.15). This finding is consistent with Bruno's (2018) findings based on 2016-2017 data (r=.15) (p.18). Chapter Two discussed the absence of supplemental funding eligibility under LCFF for African-American students as being noteworthy given the sustained and pervasive failure within the public education system for African-American students. As the new formula is primarily focused on supporting districts with concentrations of students in poverty, further examination of how the formula supports African-American students requires disaggregation of district-level data at a level beyond the purview of this study.

Notwithstanding the need for further analysis of resource distribution under the new formula, the present results indicate that the LCFF places the focus of funding support for African-American students at the intersection of race and poverty. The success of this strategy depends on the efficacy of a funding reform policy focused on reducing socioeconomic segregation, in addressing unequal educational opportunities

based historically on racial segregation. It comes at the price of ensuring that racial and ethnic differences remain unrecognized, which is somewhat untenable given outcome measures under the new formula will ultimately default to the measurement of achievement gaps between students based on demographic category.

Research question two discussion

RQ2. How does the district-level per-pupil composition of LCFF, Other State, Federal, and Local funding compare pre- and post-LCFF?

Research question two examines distribution justice post-LCFF. Evidence of distribution justice includes concentration grant eligible districts being allocated greater funding than non-eligible districts; and post-LCFF changes in funding gaps between both types of district that favor concentration grant eligible districts. The results show that independent of the component parts of the new formula, the most obvious difference between both years is that the LCFF allocation represents a huge increase over the Revenue Limit amount, averaging $3,688 (56.62%) more per student 2017-2018 compared to 2012-2013. Given California has underfunded public education compared to other states since the 1970s, a doubling of the key state allocation under the LCFF is evidence of the legislature's commitment to better funded public education system.

Although an increase in funding associated with the LCFF allocation is an important positive and worthy of measurement, the primary focus of Research Question Two is to ascertain if the new formula signals distribution justice in terms of funding progressivity. Funding progressivity/ regressivity is measured by examining district-level per pupil apportionments from the four resources in non-eligible districts as compared to those in concentration grant eligible districts. That is, evidence for distribution (in)justice

attributable to the new formula can be examined by disaggregating and comparing the LCFF and other allocations, between non-eligible and concentration grant eligible districts for both years. The findings between both years indicate if funding gap differences pre- and post-LCFF show changes in resource (re)distribution in favor of concentration grant eligible districts (progressive) or not (regressive). Further confirmation of movement towards or away from funding progressivity post-LCFF, can be measured by comparing the gap between non-eligible and concentration grant eligible district allocations, pre- and post-LCFF.

Results show that the Revenue Limit, the primary state resource prior to LCFF, is funding regressive, allocating less in concentration grant eligible districts compared to non-eligible districts 2012-2013. The 2017-2018 LCFF allocation is a reverse, providing additional funding overall, with a proportionately greater amount to districts with concentrations of targeted (FRMP- eligible) students as compared to concentration grant non eligible districts. This marks the distribution of LCFF resources under the new formula as funding progressive. However, the mean increase in *total* per pupil funding amount under the new formula ($3,196) is less than the increase between the Revenue Limit and LCFF allocation ($3,688). This shows that other funding resources are contributing less post-LCFF and is sometimes indicative of funding regressivity as detailed below.

Other State and Federal resources are funding progressive both pre- and post-LCFF, as measured by each allocating greater resources to concentration grant eligible districts over non-eligible districts. Of interest, the Other State allocation decreases post-LCFF during a period of economic growth in California when state tax revenues

generally increased. This may indicate some compromise between budgeting at the State level for the LCFF and Other State allocations. Further investigation is necessary. Clarification is particularly needed as the decrease is greater in concentration grant eligible districts compared to non-eligible districts, making the cuts to funding from Other State resources regressive in nature. That is, while some portion of the LCFF allocation would go towards compensating for any decrease in the Other State allocation, the LCFF monies are required to work harder to make-up for the greater loss in concentration grant eligible districts. Thus, changes in the Other State allocation work against the equity focus of the LCFF resource distribution and districts with students identified for greater resources are more negatively affected by the allocation decrease than districts with fewer supplemental grant eligible students.

The Federal allocation also decreases post-LCFF. However, the pattern of distribution pre- and post-LCFF remains similar. That is, while the Federal per-pupil allocation is less 2017-2018, the reduction does not disproportionately impact students targeted for additional resources in concentration grant eligible districts. The difference in allocation between non-eligible and concentration grant eligible districts remains proportionately the same pre- and post-LCFF. Thus, the Federal allocation might be considered funding neutral, that is neither funding progressive or regressive. Of interest, distribution under the Federal allocation both pre- and post-LCFF generally aligns with the priorities of LCFF, in providing greater resources to districts with concentrations of targeted students.

Local Funding increased in concentration grant non-eligible and eligible districts post-LCFF, although the increases were not sufficient to compensate for losses in Other

State and Federal allocations. The allocations are funding regressive both pre- and post-LCFF, in applying more resources to non-eligible over concentration grant eligible districts. As with Other State funding, this means that some portion of the LCFF allocation is required to compensate for a smaller Local Funding allocation in concentration grant eligible districts, thereby diminishing the redistributive power of the LCFF. Of interest however, the funding gap between non-eligible and concentration grant eligible districts does decrease slightly post-LCFF (9.5% at the 50th percentile, $187 to $178). That is, there appears to be a slight decrease in regressivity as measured by the allocation gap between non concentration grant eligible and eligible districts.

In summary, results from Research Question Two show that the new formula distributes greater LCFF resources to districts with concentrations of targeted students compared to districts with fewer targeted students; and that the Federal allocation follows a similar model of distribution. Both distributions are funding progressive and represent a measure of distribution justice in allocating districts with concentrations of students in poverty greater fiscal resources. Both the Other State and Local allocations depress the redistributive power of the LCFF distribution in providing less resources to concentration grant eligible districts compared to non-eligible districts. This pattern of regressive funding working in favor of districts with fewer targeted students is representative of a distribution injustice.

Research question three discussion

RQ3. How does district-level per-pupil funding for EL, FRMP-eligible and African-American students compare 2012-2013 to 2017-2018?

Research Question Three expands on Research Question Two in continuing to examine district level per-pupil funding pre- and post-LCFF for evidence of funding progressivity and/or regressivity for other groups recognized in the LCFF. This further tests the redistributive justice impacts of LCFF on targeted student statuses. Similar comparisons are conducted, but are focused on an examination of funding allocations to each of the demographic groups of interest - ELs, FRMP-eligible and African-American students. Evidence of funding progressivity and regressivity is again explored, by examining findings related to district-level per pupil apportionments from the four resources to each demographic group, in both non-eligible and concentration grant eligible districts.

Results show that, consistent with a horizontal funding model, the 2012-2013 Revenue Limit applied similar amounts across each group, and also within each group, regardless of enrollment in concentration grant eligible districts or non-eligible districts. Post-LCFF, all groups received greater funding with the increase in LCFF allocation over the Revenue Limit amount averaging $4,247 (71.39%) for FRMP-eligible students, $3,709 (57.31%) for ELs, and $4,198 (70.94%) for African-American students. However, given the tremendous increase in education funding during the period of LCFF implementation, the increases noted here cannot be assumed to be a manifestation of funding progressivity under the new formula. That is, even apparent increases in funding can be regressive depending on the distribution across student groups. Comparison between pre- and post-LCFF distributions provide a clearer confirmation of funding trend including progressivity.

Consistent with findings in Research Question Two, the increase in the *total* per pupil funding amount (measured at the 50th percentile) is less than the increase between the Revenue Limit and LCFF allocation for all three groups, indicating a post-LCFF loss in revenue from other funding streams. African-American students are particularly affected, with the $1,688 increase between Revenue Limit and LCFF almost halved to a $872 increase in total funding post-LCFF. The difference is explained by decreases in the Other State and Federal resources. Cuts in the Federal allocation are focused on FRMP-eligible and African-American students, with EL students receiving a slight increase in Federal funding post-LCFF. However, the Local allocation to ELs decreased post-LCFF, while it increased for the other two groups.

Findings from Research Question Two provided information on the general progressive/ regressive orientation of post-LCFF allocations. To determine if changes in apportionments are indicative of progressive or regressive funding trends for FRMP-eligible, EL and African-American students, appropriations in each group for concentration grant eligible districts and non-eligible districts are compared. Of particular import, decreases in funding that disproportionately negatively affect concentration grant eligible districts as compared to non-eligible districts work against the focus of the LCFF and are considered to be regressive.

The Revenue Limit resource is funding regressive, allocating less in concentration grant eligible districts compared to non-eligible districts for EL, FRMP-eligible and African-American students, 2012-2013. The 2017-2018 LCFF allocation is a reverse, providing additional funding to all three groups, with a proportionately greater amount to districts with concentrations of targeted (FRMP- eligible) students as compared to

concentration grant non-eligible districts. This marks the distribution of LCFF resources under the new formula as funding progressive for EL, FRMP-eligible and African-American students enrolled in concentration grant eligible districts. However, based on results from Research Question One, EL and African-American student benefit is secondary to FRMP-status. That is, concentration grant eligible districts are determined based on 55% or greater enrollment of supplemental grant eligible students. However, due to the unduplicated count, FRMP- eligibility is the driver of the concentration grant eligibility determination.

Results on the Other State allocation from Question Three provide further confirmation that independent of a decrease in allocation this resource is funding regressive. That is, proportionately a greater amount is cut from the allocation to ELs, FRMP-eligible and African-American students in concentration grant eligible districts compared to non-eligible districts. As discussed above, this is at odds with the intent of the LCFF and works again the progressive benefit of LCFF funding districts with concentrations of LCFF-targeted students. While the Federal resource also decreases for all three groups, proportionate allocation remains funding progressive with concentration grant eligible districts receiving greater amounts than non-eligible districts both pre- and post-LCFF. However, the difference between the allocations to concentration grant eligible and non-eligible districts declines for EL and African-American students post-LCFF; and future allocations should be monitored for funding regressive tendencies. Finally, notwithstanding a post-LCFF increase, the Local funding resource is regressive for all groups both pre- and post-LCFF, allocating greater funding to non-eligible over

concentration grant eligible districts. The gap between the two decreases in favor of concentration grant eligible districts post-LCFF.

Summary

The research shows that the LCFF is working as an instrument of recognition and distribution justice in favor of students in poverty, with greatest benefit being provided to concentrations of poorer students. The formula is designed to accord ELs recognition status while discounting EL agency as determinant in resource distribution. Compared to the Revenue Limit amount, the LCFF appropriation doubles the per-pupil allocation, but benefit is tempered by decreases in Other State and Federal resources. Concentration grant eligible districts are disproportionately negatively affected by these decreases indicating a measure of funding regressivity. Similarly, although the Local resource allocation has increased post-LCFF, it continues as it did pre-LCFF, to provider greater monies to non-eligible over concentration grant eligible districts. Finally, targeted benefit to EL and African-American students is dependent on some intersection with FRMP-eligibility.

Recommendations

Recommendations based on the research findings are divided into two sections. The first section offers recommendations for building on the current study and suggests some areas of related research on the LCFF. The second section makes recommendations for policy review and revision in the area of public education funding reform.

Recommendations for future research

The current findings are representative of school-sites only to the extent that district-level demographic data and funding resource data are mirrored at the school-site

level. Future research on how *district* level data mediate between the LCFF allocation and *school* level demographics is recommended. Studies in two areas are especially warranted. The first is an examination of within-district level data so that student membership in multiple LCFF-targeted and non-targeted categories can be disaggregated. While the district level number or percentage of FRMP-eligible, EL and African-American students is identified in the current study, a greater understanding of how the new funding formula interacts with specific demographic categories requires analyses of more detailed datasets. This is of particular import to the evaluation of how African-American students may or may not be benefiting under LCFF.

The second area recommended for further investigation is an examination of how LCFF total allocation at the district level is apportioned by the district to the school site level; with particular attention to within district application of a progressive funding model consistent with the LCFF. Schools within the same district are often fairly segregated by race, ethnicity, and income. It is important to ascertain if district level distribution of funding is differentially driven by school site enrollment of LCFF-targeted groups. The distribution of funding to individual districts across the state is not prescriptive and analysis of data at the district level does not determine if funding intended to provide targeted services actually reaches supplemental-grant eligible students.

Future research should continue to monitor trends in funding from the various resources for evidence of funding progressivity and regressivity, and to determine if the data presented in the current study is part of a more stable trend for each of the funding sources. Determining the efficacy of the new funding formula requires consideration of

how the LCFF is mediated by progressive and regressive funding patterns over time. Careful attention should be paid to the disaggregation of increases and/or decreases in allocated dollars, from progressive and/or regressive funding practices.

Finally, current and future research on the relationship between the LCFF and student outcome measures such as high school graduation rates and achievement on state standardized assessments, must take into consideration the complexities of the LCFF distribution. Based on the results of the current research, correlational studies using *school* level data on LCFF allocation, student demographic, and academic outcomes, while methodologically complicated, may provide a reasonable measure of funding reform efficacy in California. However, researchers should note that using district level data for input-output analysis runs the risk of missing many of the nuances affecting funding allocations and related student benefit.

Policy recommendations

The key (and obvious) policy recommendation for all matters related to public education funding in California is that an increase in state budget allocation to education is necessary. Although this study documents the increase in allocation under the LCFF, funding per pupil in California was low to begin with as compared to other states. While improved post-LCFF, California is still somewhere between the bottom fifth and the middle (27th place) in per-pupil spending, depending on the metric being used. (Fensterwald, 2017, n.p.).

Data from the current study shows that unduplicated pupil count provision of the LCFF negates the independent EL tally as a factor in shaping formula distribution. Policy makers are advised to reconsider the unduplicated pupil count provision with a view to

having EL enrollment count towards the formula independent of EL student FRMP-eligibility status. The research is clear that interventions required to support ELs are independent of poverty status. Creating EL targeted funding is also necessary if measurement of LCFF efficacy is to include the educational attainment of EL students as a separate category.

Independent of state budget allocation, policy makers should investigate why the Other State allocation is currently working against progressive distribution under the LCFF, and endeavor to correct the regressive administration of the Other State allocation to districts with concentrations of LCFF-targeted students. Consideration of pre- and post-LCFF data on the Other State appropriation to further clarify trend(s) in the distribution may inform this examination.

Conclusion

Notwithstanding its many faults, the potential benefits of public education and the effect that education has on the quality of life, make the distribution of educational resources a matter of great social and economic justice. The LCFF is the first substantive finance reform measure in California specifically designed to differentially support students who have historically received less benefit from their education as compared to more privileged peers. As such, investigation into the efficacy of the LCFF as an agent of resource redistribution in support of students in poverty, English Learners, and African-American students, is an issue of both practical obligation and historic import. Results from the current indicate that the LCFF has had some success in its efforts to fund schools more progressively on the basis of student need, and particularly to provide additional resources to concentrations of students in poverty. Notwithstanding

recommendations to amend the unduplicated pupil count provision, the evidence suggests that new funding formula is working as an instrument of relevant recognition and distribution justice.

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APPENDIX A

Research Question Three - Independent Samples T-Tests

Independent-samples t-tests confirming as significant differences between allocations to concentration grant eligible and non-eligible districts from all four funding resources (Local Revenue/LCFF, Other State, Federal, Local), for EL, FRMP-eligible and African-American students, in both 2012-2013 and 2017-2018.

2012-2013 results

a. 2012-2013 FRMP-eligible students.

1. An independent-samples t-test confirming a significant difference between the 2012-2013 Revenue Limit allocation for FRMP-eligible students in concentration grant eligible districts (*M*=$5,884, *SD*=$449) as compared to non-eligible districts (*M*=$6,244, *SD*=$1,290), *t*(424)=-5.00, p =0.00.

2. An independent-samples t-test confirming a significant difference between the 2012-2013 Other Local allocation for FRMP-eligible students in concentration grant eligible districts (*M*=$2,358, *SD*=$956) as compared to non-eligible districts (*M*=$1,508, *SD*=$507), *t*(665)=15.83, p =0.00.

3. An independent-samples t-test confirming a significant difference between the 2012-2013 Federal allocation for FRMP-eligible students in concentration grant eligible districts (*M*=$988, *SD*=$370) as compared to non-eligible districts (*M*=$537, *SD*=$375), *t*(748)=16.80, p =0.00.

4. An independent-samples t-test confirming a significant difference between the 2012-2013 Local allocation for FRMP-eligible students in concentration grant eligible districts

(*M*=$520, *SD*=$443) as compared to non-eligible districts (*M*=$760, *SD*=$723), *t*(563)=-5.45, p =0.00.

b. 2012-2013 EL students

1. An independent-samples t-test confirming a significant difference between the 2012-2013 Revenue Limit allocation for EL students in concentration grant eligible districts (*M*=$5,844, *SD*=$433) as compared to non-eligible districts (*M*=$4,338, *SD*=$1,415), *t*(408)=19.28, p =0.00.

2. An independent-samples t-test confirming a significant difference between the 2012-2013 Other Local allocation for EL students in concentration grant eligible districts (*M*=$2,361, *SD*=$928) as compared to non-eligible districts (*M*=$1,479, *SD*=$503), *t*(673)=16.83, p =0.00.

3. An independent-samples t-test confirming a significant difference between the 2012-2013 Federal allocation for EL students in concentration grant eligible districts (*M*=$998, *SD*=$259) as compared to non-eligible districts (*M*=$492, *SD*=$341), *t*(769)=23.50, p =0.00.

4. An independent-samples t-test confirming a significant difference between the 2012-2013 Local allocation for EL students in concentration grant eligible districts (*M*=$533, *SD*=$466) as compared to non-eligible districts (*M*=$804, *SD*=$711), *t*(588)=-6.15, p =0.00.

c. 2012-2013 African-American students

1. An independent-samples t-test confirming a significant difference between the 2012-2013 Revenue Limit allocation for African-American students in concentration grant

eligible districts (*M*=$5,884, *SD*=$423) as compared to non-eligible districts (*M*=$6,082, *SD*=$1,102), *t*(440)=-3.19, p =0.00.

2. An independent-samples t-test confirming a significant difference between the 2012-2013 Other Local allocation for African-American students in concentration grant eligible districts (*M*=$2,504, *SD*=$1000) as compared to non-eligible districts (*M*=$1,491, *SD*=$530), *t*(665)=18.04, p =0.00.

3. An independent-samples t-test confirming a significant difference between the 2012-2013 Federal allocation for African-American students in concentration grant eligible districts (*M*=$1,024, *SD*=$343) as compared to non-eligible districts (*M*=$501, *SD*=$354), *t*(473)=20.81, p =0.00.

4. An independent-samples t-test confirming a significant difference between the 2012-2013 Local allocation for African-American students in concentration grant eligible districts (*M*=$517, *SD*=$502) as compared to non-eligible districts (*M*=$923, *SD*=$1,064), *t*(482)=-6.59, p =0.00.

2017-2018 results

a. 2017-2018 FRMP-eligible students

1. An independent-samples t-test confirming a significant difference between the 2017-2018 LCFF allocation for FRMP-eligible students in concentration grant eligible districts (*M*=10,440, *SD*=$754) as compared to non-eligible districts (*M*=$9,181, *SD*=$1,458), *t*(507)=14.69, p =0.00.

2. An independent-samples t-test confirming a significant difference between the 2017-2018 Other Local allocation for FRMP-eligible students in concentration grant eligible

districts (*M*=$1,499, *SD*=$435) as compared to non-eligible districts (*M*=$1,201, *SD*=$333), *t*(770)=10.81, p =0.00.

3. An independent-samples t-test confirming a significant difference between the 2017-2018 Federal allocation for FRMP-eligible students in concentration grant eligible districts (*M*=$914, *SD*=$322) as compared to non-eligible districts (*M*=$457, *SD*=$230), *t*(758)=23.02, p =0.00.

4. An independent-samples t-test confirming a significant difference between the 2017-2018 Local allocation for FRMP-eligible students in concentration grant eligible districts (*M*=$656, *SD*=$665) as compared to non-eligible districts (*M*=$868, *SD*=$936), *t*(621)=-3.57, p =0.00.

b. 2017-2018 EL students

1. An independent-samples t-test confirming a significant difference between the 2017-2018 LCFF allocation for EL students in concentration grant eligible districts (*M*=$10,430, *SD*=$732) as compared to non-eligible districts (*M*=$9,243, *SD*=$1,551), *t*(483)=13.22, p =0.00.

2. An independent-samples t-test confirming a significant difference between the 2017-2018 Other Local allocation for EL students in concentration grant eligible districts (*M*=$1,478, *SD*=$430) as compared to non-eligible districts (*M*=$1,211, *SD*=$326), *t*(769)=9.84, p =0.00.

3. An independent-samples t-test confirming a significant difference between the 2017-2018 Federal allocation for EL students in concentration grant eligible districts (*M*=$906, *SD*=$304) as compared to non-eligible districts (*M*=$428, *SD*=$166), *t*(676)=27.79, p =0.00.

4. An independent-samples t-test confirming a significant difference between the 2017-2018 Local allocation for EL students in concentration grant eligible districts (*M*=$691, *SD*=$748) as compared to non-eligible districts (*M*=$862, *SD*=$831), *t*(718)=-2.99, p =0.00.

c. 2017-2018 African-American students

1. An independent-samples t-test confirming a significant difference between the 2017-2018 LCFF allocation for African-American students in concentration grant eligible districts (*M*=$10,377, *SD*=$745) as compared to non-eligible districts (*M*=$8,908, *SD*=$1,243), *t*(555)=19.50, p =0.00.

2. An independent-samples t-test confirming a significant difference between the 2017-2018 Other Local allocation for African-American students in concentration grant eligible districts (*M*=$1,580, *SD*=$437) as compared to non-eligible districts (*M*=$1,220, *SD*=$327), *t*(767)=13.12, p =0.00.

3. An independent-samples t-test confirming a significant difference between the 2017-2018 Federal allocation for African-American students in concentration grant eligible districts (*M*=$938, *SD*=$277) as compared to non-eligible districts (*M*=$444, *SD*=$269), *t*(758)=25.16, p =0.00.

4. An independent-samples t-test confirming a significant difference between the 2017-2018 Local allocation for African-American students in concentration grant eligible districts (*M*=$717, *SD*=$754) as compared to non-eligible districts (*M*=$1,067, *SD*=$1,348), *t*(531)=-4.35, p =0.00.

APPENDIX B

Demographic data on enrollment for FRMP-eligible and EL students across the state for the years leading up to and since the implementation of the new formula, indicate that levels for both groups remain fairly stable for the five years pre- and post-LCFF

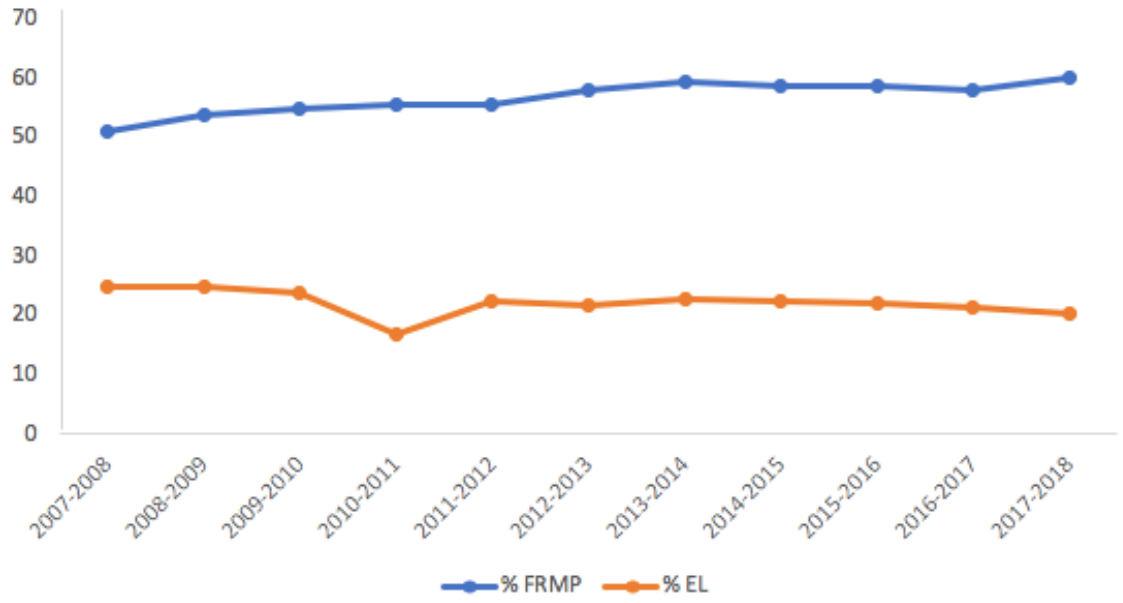

Figure B1. Percentage of total enrollment of FRMP-eligible and EL students pre- and post-LCFF (2012-2013)