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Reforming School Finance Systems to Achieve Equity in Funding Education

Yousef Awwad

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Reforming School Finance Systems to Achieve Equity in Funding Education

by

Yousef Awwad

A dissertation to be submitted in partial fulfillment of the requirements for the degree of

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in
Leading and Learning

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School of Education

2018
Reforming School Finance Systems to Achieve Equity in Funding Education

by

Yousef Awwad

This dissertation is completed as a partial requirement for the Doctor of Education (EdD) degree at the University of Portland in Portland, Oregon.

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Abstract

Taxpayers in Oregon provoked change in school finance policy by passing Measure 5, which cemented the ground for legislators to reform school finance. Measure 5 was aimed at restricting increases in local taxes while shifting most of the burden of schools’ funding to the State. The purpose of this quantitative study of a 20-year time period of school funding was to determine the impact and effectiveness of passing Measure 5 and school finance reforms on the equity of funding. All 197 school districts’ financial relevant data for 1995, 2000, 2005, 2010, and 2015 were collected and adjusted for the consolidation and splitting of districts, if necessary. Then data were analyzed to determine the impact on funding and equity using descriptive analysis and five equity measures; Coefficient of Variation, Federal Range Ratio, Gini Coefficient, McLoone Index, and Correlation Coefficient. Funding, in general, was increased in Oregon, but when adjusted for inflation, it declined. The findings of this study concluded that horizontal equity, which is non-differentiated per-pupil funding, improved from 1995 to 2015. However, evidence showed that vertical equity, which considers additional per-pupil funding needs, such as that for adequately serving special needs students or English Language Learners, worsened for the same period. The findings of this study were consistent with other studies (Driscoll & Salmon, 2008; Ko, 2006) regarding school funding in Missouri and Virginia.
Keywords: Measure 5, horizontal equity, vertical equity, equality in educational opportunity, equity measures, school finance system, foundation program formula.
I dedicate this study to my mother and my kids. My mother Fatima worked tirelessly to raise me and my eight siblings. She loved us unconditionally and helped us navigate a path that often seemed difficult and hard but with her love and kindness, I saw the light that led me to hope and success.

My kids, Nadia, Omar and Ali. Because of you, I strive to be the best. Because of you I have hope. Because of you I stay strong, because of you, I was able to do things I never dreamed of doing.

To my mother and children: I Love you! and Thank you!
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Chapter 1: Introduction

Against the backdrop of increasing property taxes and inequitable system of tax levies, Oregon voters put on the ballot and passed Measure 5 in 1990. Measure 5 is a landmark voters’ initiative that amended the Oregon Constitution and changed school districts’ funding dramatically. Measure 5 specifically puts a cap on property taxes of $15 per $1,000 assessed value starting in the 1991-1992 school year with a gradual reduction to $5 per $1,000 assessed value by the 1995-1996 school year (OR. Const. art. XI, § 11). While it aimed at reducing increases in property taxes, it also reduced school districts’ funding substantially. To cover a portion of school districts’ lost revenues, legislators increased the State’s share of school districts’ funding from the general fund (Waters, Holland, & Weber, 1997). In their support of Measure 5, proponents led by chief petitioner Don McIntire said, they were frustrated with the Legislature’s inability to act on local property taxes and school finance and they wanted to limit increases in taxes for local taxpayers and move the responsibility of schools’ funding to the State. Opponents, such as The League of Women Voters of Oregon Urges a NO Vote, cautioned against passing the measure due to the negative impact on school districts (Oregon Encyclopedia, 1990). Despite efforts to clarify that Measure 5 could reduce school districts’ budgets, the Measure passed, and it caused serious reductions in school districts’ funding.

Prior to Measure 5, school districts relied heavily on local property taxes, which allowed wealthy districts to levy more money than poor districts, thus created
an inequity of funding among school districts (Oregon Legislature, 2014). The effect of this financial inequity was visible in the educational program offered by wealthier school districts compared with those offered by poorer school districts. In this atmosphere, the Oregon Legislature saw an opportunity to reform school finance by introducing and voting for SB 814 in 1991 which resulted in creating the Equalization Formula (Oregon Legislature, 2004). In enacting the formula, the Legislature hoped to achieve equity in Oregon’s school finance system. Their intent to create an equitable and fair system was unambiguous in the report of the Task Force on School Funding which stated: “The SSF Distribution Formula is the statutory definition of fairness applied to the financial needs of school districts” (Oregon Legislature, 2014, p. 8).

Discussion about equity had been in legislators’ circles since 1978, but these discussions did not have enough momentum to come to fruition prior to Measure 5’s approval (Oregon Legislature, 2014). Legislators’ concerns regarding equity were likely stirred and amplified by educational and parents’ advocates’ outcry. Educational leaders and parents’ advocates sued the State alleging inequity in educational opportunities among students because of the disparity in schools’ funding. Their efforts to convince the court with their equity argument failed. This is evident in Olsen v. Oregon (1976), where the plaintiff sued the state for violating the Oregon Constitution, specifically, Article I, the protection clause, and Article III, the uniform system of common schools. Article I in the Oregon Constitution says, “No law shall be passed granting to any citizen or class of citizens privileges, or immunities, which,
upon the same terms, shall not equally belong to all citizens” (OR. Const. art. I, § 20). 

Article III, in the Constitution reads, “The Legislative Assembly shall provide by law for the establishment of a uniform, and general system of Common schools” (OR. Const. art. III, § 3). The plaintiff alleged that the ability of wealthy districts to levy considerable amount of money for their local schools created an unfair situation for students in less privileged school districts where students in privileged schools had more access to educational opportunities than the others. The plaintiff felt that this situation violated the equal protection and the uniform clauses in the Oregon Constitution. In discussing its decision, the Oregon Supreme Court suggested that the plaintiff allegation can be summed as follow: Reliance on property taxes produced disparity in funding among school districts, which resulted in “unequal educational opportunities” among students in Oregon. The court agreed with the plaintiff’s allegation philosophically but disagreed with it legally. Even though the court acknowledged the existence of disparity in funding, the court did not find Oregon in violation of the equal protection clause (Olsen v. Oregon, 1976). In its ruling, the court said that the State had no obligation to guarantee equal funding for all school districts if it provided students with a basic level of education. The court’s ruling went on to say, disparities in funding were expected in education in a similar manner as those that existed in other public services such as the fire departments and police services.

Equity or equality in funding are interchangeable terms used by advocates to attain equality in educational opportunity. People were simply asking the State
through the court to make available to students; an equal opportunity so they can succeed in schools and life. To get equal access to educational opportunities, advocates asked the court to remove barriers that hinder some students’ efforts while giving others some more advantages. The focus here was not on mental or cognitive barriers but financial, systematic, and material barriers.

Garms and Smith (1970) were first to discuss the concept of “Equality in Educational Opportunity.” The authors defined the term equality in educational opportunity as offering a program of education that achieves an opportunity of equal outcomes to students regardless of their needs. Grams and Smith explained that equality can be accomplished by including other factors such as poverty level in a funding formula. What Garms and Smith advocated for was the “Vertical Equity.” Vertical equity requires funding school districts an unequal amount per student to cover costs associated with different needs such as poverty level and special education. To explain vertical equity, it is easier to demonstrate with an example. Assume, school (A) has two students, Mike and Jack. Mike is a student with a disability and requires more assistance than Jack due to his disability. In this instance, school (A) will receive more funding for Mike than for Jack to compensate for the additional resources needed to accommodate Mike’s disability.

In passing Measure 5, advocates recognized that going to voters can be, at times, very effective to get things done, especially when legislators or the court do not listen to their plea. This was evident in the 2016 ballot that included several K-12
educational measures. The biggest one was Measure 97, which called for amending the Oregon tax law to increase sales taxes on corporations (Oregon Secretary of State (2016a). Per the Oregon Legislature (2016), if the measure passed, it would have generated more than $6.1 billion in revenues for 2017-2019 biennium, but the measure failed. Voters seemed more open to pass initiatives if they did not have to pay for them. For example, they voted for Measure 98 that required school districts to offer career and technical education, bilingual programs, and dropout prevention programs to improve high school graduation rates (Oregon Secretary of State (2016b). Not identifying how to pay for Measure 98 meant that the Legislature had to prioritize and find a source of funding within the budget to pay for it. The governor’s 2017-2019 biennium budget included one year and one-time funding for Measure 98, but it is not clear how the States will pay for Measure 98 in the future or sustain funding for any new programs. While the State might not pay to implement Measure 98 in future budgets, school districts would still be required to provide services and programs required by the measure. Measure 98 represent one example of a mandate that may never be funded. In another example of unfunded mandates, the State Legislature passed House Bill 3141 in 2007 mandating that school districts offer a specific number of minutes for physical education (PE) (Oregon Department of Education, 2017). Beginning in school year 2018-2019 schools would be required to offer students, in Grades K through 8, 150 minutes of PE per week. To offer PE, school districts ought to modify or add facilities to accommodate this type of activity that would cost
A significant amount of money, time, and efforts. Additionally, school districts would have to find and recruit qualified PE teachers to cover this requirement. The cost to pay for teachers and to modify facilities to make them PE ready could be very high. Besides cost, finding contractors and recruiting teachers takes time. In short, the requirements seemed prohibitive to school districts within the time frame required to comply. Luckily the Legislature gave districts a relief by passing Senate Bill 4 to defer the implementation of House Bill 3141 (Oregon Legislature, 2017a). While the Legislature postponed implementation, districts were not relieved of the requirements completely because they were still required to hire and train a new cadre of specialized teachers in PE to meet these new requirements in future years and to make significant changes in facilities with no additional funding. In the PE case, school districts received a temporary relief, but lack of funding continues to be a major concern for educational leaders. Concerns about lack of funding were highlighted by the State’s own commission. The State of Oregon needs about $9.97 billion to achieve its goals in offering quality education for 2017-2019 biennium (Oregon Legislature, 2018). In their recent budget proposal, the State Legislature proposed $8.2 billion in funding for the 2017-2019 biennium (Oregon legislature, 2017a). These measures seemed to capture the public interest in what they perceived as educational programs and services that do not exist in schools today at the level they deemed appropriate. This study did not analyze those measures but only used them to support equity-related discussions, and it was focused on Measure 5 and school finance reforms.
Statement of the Problem

According to the Oregon Department of Revenue (2009), Measure 5 passed in 1990 to limit tax rates on property owners. Specifically, it limited taxes that school districts can levy to no more than $5 per $1000 of property assessed value. Prior to Measure 5, each district levied the amount needed based on its budget and could increase the tax rate by 6% without voters’ approval. Because each district levied taxes based on its budget, the amount of taxes levied varied from one district to another (Oregon Legislature, 2014). This variation in levying resources created inequity in funding among school districts. According to the Oregon Legislature (2014), school districts in a lower socioeconomic geographical area could not levy the same amount of money that wealthier school districts could levy. Even if they levied higher tax rates, they would still not levy equal amounts of money because they have a lower base of assessed values in a lower socioeconomic geographical area. According to the Oregon Department of Revenue (2009), value assessment is a mechanism used by county assessors to establish a property value for tax purposes.

In addition to having lower property values, some districts also had a larger number of properties that were exempt from property taxes. Proponents of Measure 5 argued that relying on the local property tax system pre-Measure 5 created an unfair environment where the rich could levy more taxes than the poor. As a result, this created inequality in funding and an unfair taxing system which put the burden on
local property owners to fund schools rather than on the State (Oregon Encyclopedia, 1990).

After passing Measure 5, school districts in Oregon argued that the state did not fund K-12 education adequately. This became clear when school districts took their concerns to court. In Pendleton School District v. Oregon (2008), the plaintiff argued that the State did not comply with the Oregon Constitution in providing adequate funding for school districts (OR. Const. art. III, § 3). The Constitution reads: “The Legislative Assembly shall provide by law for the establishment of a uniform, and general system of Common schools.” The court disagreed with the plaintiff and held that the Constitution did not have the word “adequate,” and it only included the requirements of providing common schools, which the court interpreted to mean a mere basic right to education. As evident by Pendleton School District v. Oregon, neither advocates, nor school leaders believed that the State funded school districts adequately. The Legislature’s actions to create the equalization formula may have failed to achieve the equity they desired to accomplish, but it continued to pressure legislators to prioritize education funding. This study of 20-years of school funding that examined five-year intervals attempted to determine the impact of Measure 5 on the policy to fund school districts equitably and financially.

**Purpose of the Study**

The purpose of this quantitative study of a 20-year time period of school funding is to determine the impact and effectiveness of passing Measure 5 and school
finance reforms on the equity of funding. The purpose statement was investigated by analyzing the funding of all school districts in the State of Oregon. The study was concerned only with revenues in the general fund accounts where the State School Fund Grants are deposited. The study covered the period from 1995 to 2015 in five-year intervals to ensure there were sufficient data and timelines to compare funding. Additionally, having access to revenues and other relevant information of the whole population of school districts provided an opportunity to perform financial and statistical analysis to provide evidence that support this research.

Research Questions

Oregon policies post Measure 5 were intended to provide equity in funding for students across the State of Oregon regardless of individuals’ wealth within the district. This study attempted to answer the following research questions:

1. How did the equity of funding change over time from 1995 to 2015, following the implementation of Measure 5 in 1991?

2. To what extent was funding school districts in Oregon equitable, as measured by a variety of equity methods?

Significance

This study put Measure 5 in a historical context that showed why Measure 5 passed. It also synthesized research relevant to the funding concepts of equity, adequacy, and equal opportunity. Additionally, this study provided a summary of events that led to reforming school finance in the United States. More importantly, the
purpose of this quantitative study of a 20-year time period of school funding is to determine the impact and effectiveness of passing Measure 5 and school finance reforms on the equity of funding. While the focus is on the State of Oregon, this research intended to provide a foundation to analyze equity of funding both horizontally and vertically that can be used for research nationally. It also provided a context for policy development that can be applied to affect policy making elsewhere.

It is also important to point out that many of the studies that measured horizontal equity used the analyses of the Coefficient of Variation, the Federal Range Ratio, the Gini Coefficient, the McLoone Index, and the Correlation Coefficient. This study attempted to use these measures to test for both horizontal and vertical equities. Kelly (2015) and Ko (2006), indicated that horizontal equity can be reasonably achieved when the outcome of the units of analysis are almost close to being equal, while vertical equity is achieved when the outcome of the units of analysis are unequal. This study is based on a theoretical assumption that achieving horizontal equity is the opposite of vertical equity (Garms & Smith, 1970; King, Swanson, & Sweetland, 2005; Levacic, 2008; Musgrave, 1961). According to Escue (2012), financial equity and adequacy are two concepts of school funding that contradict each other. Accordingly, if the measure determined that horizontal equity exists, it would be reasonable to assume that there is little to no vertical equity.
**Definition of Terms**

Measure 5: voters’ initiative to amend the Oregon Constitution to cap tax levies to $5 per $1,000 property value approved in 1990.

Proposition 13: Voters’ initiative to limit local property taxes in California that shifted funding from local taxpayers to the State approved in 1978.

The Equalization Formula: The State of Oregon’s funding instrument which includes a base level amount and additional weights for specific categories, such as special education, poverty, and English Language Learners. SB814 was approved to create the Equalization Formula in 1991.

Assessed value: Property value which the county assessor deems an appropriate base for the taxing authority to levy taxes.

Equality in Educational Opportunity: Equal access to education regardless of race, wealth, or any other characteristics.

Equity: Adequate and fair.

Horizontal Equity: Allocating an equal amount of resources among the recipients regardless of their needs.

Vertical Equity: Allocating an unequal amount of resources among the recipients deemed adequate based on their different needs.

Adequacy: Is synonymous with the word sufficient or enough.

Quality Education Commission (QEC): The commission’s purpose is to determine the amount of money that is adequate to fund the cost of the state’s Quality Education Model
Quality Education Model (QEM): A research and data-based instrument to assess educational practices and determine the appropriate cost of funding to meet Oregon’s educational objectives.

School finance system: A combination of rules, regulations, policies, state aid, and local resources to finance schools

Foundation Program/Formula: Foundation programs are a formula-based funding scheme which calculates the minimum amount of money considered sufficient to fund school districts regardless of the wealth of their local districts. Once the amount is determined, each district levies resources based on its local tax rate to pay for a portion of the total amount; then the balance is funded by the state.

Summary

Supporters of Measure 5, considered the increase; in property tax rates and the reliance on local property taxes; unfair. So, they initiated and put Measure 5 on the ballot in 1990 to ease the burden of escalating property tax rates and to shift the responsibility of schools’ funding to the State. Prior to passing the Measure, local property owners experienced variations in local property taxes based on each school district’s budget. The variations in funding created inequity in educational program offering by districts, where wealthier districts offered richer programs than poorer districts. Legislators seized the opportunity and attempted to transform school finance in Oregon by passing SB 814 in 1991. The public seemed unhappy with legislators’ efforts and continued to argue for more funding, this was apparent in several attempts
to put measures on the ballot and court cases. This study will not analyze these measures, but it will focus on Measure 5 and its impact on reforming school finance. The purpose of this quantitative study of a 20-year time period of school funding is to determine the impact and effectiveness of passing Measure 5 and school finance reforms on the equity of funding.
Chapter 2: Literature Review and Theoretical Framework

Concerns about school finance and educational funding had been in discussion since the mid-1800s. This chapter begins with covering the impact of the state’s role on funding education; then it explores the concept of the equal protection clause in the U.S. Constitution. In addition to covering the argument using the equal protection clause, this chapter discusses inequity and inadequacy allegations based on states’ constitutions, and it addresses school finance and the different funding formulas, some of which emerged in response to issues of equity. Then the chapter discusses Measure 5, an Oregon initiative that was put on the ballot by the voters to force the policy makers to act on property taxes and the funding of schools. And finally, this chapter explores the impact of deficit thinking on providing equal educational opportunity.

State’s Role and Litigation Impact on Funding Education

According to Augenblick, Myers, and Anderson (1997), states’ role in education began when the colonies became states. At the time, states’ policies were merely to allow local communities to establish schools with little or no financial support. Over time, states’ influence on education increased, and policies were developed to allow schools to tax property to fund education. In the mid-1800s, states took on a more active role in education and started to include an educational clause in their constitutions. In the first quarter of the 20th century, states were busy developing funding systems to fund education, and today every state has a state’s school funding system of some sort that covers most of the cost of school districts’ operations in the
United States (Augenblick, Myers & Anderson, 1997; Guthrie, 2008; Verstegen & Jordan, 2009; Westberg, 2013). It is estimated that individual states and local revenues cover more than 90% of the cost of operating schools in the United States with about 10% funded from federal sources (Guthrie, 2008). The fact that states fund most of the cost to educate students emphasizes the importance of school finance reforms on states’ level and the role that states play in the policy of school finance equity. According to Baker and Corcoran (2012), a school finance system is defined as a combination of rules, regulations, policies, state aid, and local resources to finance schools to meet educational goals in an equitable and adequate manner for all students. In other words, school finance systems are a structure that governs schools’ funding to meet the intended objectives for all students equitably. Despite having an educational clause in most states’ constitutions, advocates in almost every state have challenged their states’ funding systems in court for being inequitable or inadequate. In their court filings, advocates cited the violation of states’ educational clauses as the grounds for their lawsuits. The state’s role is critical in providing equity in education for all students, because states play a large role in controlling and regulating school districts’ funding. Therefore, states should recognize that students come to schools with different levels of resources and different support systems at home. Generally, students who have a high level of a support system at home, could perform at a higher level than students with little or no support at home. To give students equal opportunity, schools would need to fill the gap and provide support to students at
different levels of support. Cubberley (1905) appeared to be ahead of his time when he argued that it is the state’s responsibility to create appropriate educational requirements for local communities. He argued, local communities should be able to provide the funding to pay for these requirements; but when they do not have the money, the state should intervene and provide the assistance needed to pay for them. Baker and Corcoran (2012) agreed with Cubberley and argued that equity can be both equal and unequal. The concept of equity may have its roots in public finance, in discussing *Approaches to A Fiscal Theory of Political Federalism*, Musgrave (1961) explained “It is necessary to distinguish between (1) objectives relating to problems of "horizontal equity" or the principle that equals should be treated equally, (2) objectives relating to "vertical equity" or the requirement of differential treatment of unequal, and (3) efficiency objectives” (p. 117). Being both can be puzzling and confusing. To help understand this, Baker and Corcoran (2012) explained that school districts should receive an equal amount of funding unless there are specific needs that require differentiation, such as a high poverty level or students with disabilities.

As early as the 1900s, legislators showed interest in addressing equity of funding in schools (Baker & Corcoran, 2012). Their interest in equity suggested that legislators had been concerned about the disparity in funding and its impact on students’ education. This is evident in the scholarly work of Cubberley and others in his era, and the wide adoption of equalization formulas in the 1920s (Guthrie, 2008). When efforts appeared to fail to achieve equity, advocates attempted to force equity
reforms by going to court. In the late 1960s and early 1970s, advocates sued many states for relinquishing their responsibility to provide an equitable school finance system that guaranteed an equal educational opportunity for all students (Baker & Corcoran). Baker and Corcoran suggested that advocates not only argued for having an equal funding system, but they also wanted a system that acknowledged differentiation of funding based on students’ needs. Specifically, they argued that students with disabilities or from low socioeconomic areas should receive additional funding. Efforts in court to achieve equity in the 1960s and 1970s had mixed outcomes, and it will be discussed later in this chapter. The pressure to reform school finance systems in the 1970s and 1980s continued to mount on state governments (Augenblick, Myers, & Anderson, 1997; Baker & Corcoran, 2012; Dishman & Redish, 2010; Sweetland, 2015). In their efforts to reform school finance, advocates went to court in three phases. In phase one, they alleged that states violated the U.S. Constitution by not providing students with equal access to educational opportunities. In phase two, they argued that states violated their own constitutions by allowing disparity in funding among school districts. In phase three, they protested the states’ violation, of their own constitution, for not funding school districts adequately.

**Equal Protection Clause and the United States Constitution**

According to the Fourteenth Amendment, citizens of the United States are protected by law and should be treated equally in the states in which they live (U.S. Const. am. XIV, § 1). The essence of the 1960s equity argument was that, students’
funding varied greatly from one district to another; those in less privileged schools received less funding than those in more affluent neighborhoods. This disparity in funding is what educational advocates described as a violation of the equal protection clause in the U.S. Constitution. According to Augenblick, Myers, and Anderson (1997), the equity argument in the 1960s did not prevail because education was not considered a basic right in the U. S. Constitution; and, therefore, the Fourteenth Amendment was not violated. This was evident in San Antonio Independent School District v. Rodriguez (1973), where the plaintiff argued that the Texas education system violated the U. S. Constitution because it allowed for disparity in funding between rich and poor districts. The U.S. Supreme Court opined that Texas did not violate the Fourteenth Amendment, because education is not a fundamental right specifically stated in the U.S. Constitution like the right to vote or the right to free speech. According to Gillespie (2010), the U.S. Supreme Court appeared to acknowledge that the U.S. Constitution might support the notion that providing for “some identifiable quantum of education” should be guaranteed by Texas; but because the plaintiff did not ask the court to rule on the adequacy of education in Texas, the U.S. Supreme Court did not render an opinion about it. Rendering an opinion declaring that education is not a basic right under the U.S. Constitution seemed consistent with the court ruling in Brown v. Board of Education. In Brown v. Board of Education (1954), plaintiffs from different states alleged that the segregation of Black students from White students violated the equal protection clause in the U.S.
Constitution. The court agreed with plaintiffs and ruled that segregation by having separate facilities was unconstitutional. In explaining its ruling though, the court explained that success in life is dependent on making educational opportunity available to all students equally, but education is not protected basic right under the U.S. Constitution. (Cornel University Law School, 2016).

**Equity Allegations Based on States Constitution**

When advocates failed to persuade the court with their argument for equity using the U.S. Constitution, they went to court alleging that inequity in school finance caused unequal educational outcomes, which violated states’ constitutions. According to Augenblick, Myers, and Anderson (1997), between 1971 and 1983 the state court system saw a surge in litigations in the United States where advocates argued that educational funding is not equitable. The outcome of these allegations was mixed. In some states, such as California, Arkansas, and Wyoming, courts ruled against states and determined that the school finance system was unconstitutional. In other states, such as Ohio, Michigan, and Oregon, courts ruled in favor of states and determined that the state school finance system is constitutional. Most notably was Serrano v. Priest (1971), where the supreme court of California concluded that California’s school finance system violated the State equal protection clause in the California Constitution. The court explained the violation was due to wealth discrimination as evident by the disparity in funding among school districts and the effect it had on offering equality in educational opportunities to students in California.
In Oregon, the plaintiff sued the State of Oregon for violating the Oregon Constitution, Article I, the protection clause (OR. Const. art. I, § 20), and Article III, the uniform system of common schools (OR. Const. art. III, § 3). But the ruling by the Oregon supreme court was not supportive of the plaintiff view. The supreme court in Oregon disagreed with the plaintiff and ruled in favor of the State in Olsen v. Oregon (1976). Regardless of the outcome of these litigations and whether the ruling was in favor or not, according to Augenblick, Myers, and Anderson (1997), two noticeable changes emerged. First, the total education funding especially the state’s portion for school districts increased. Second, the local control over the amount that can be levied by school districts was decreased. One might add a third, reforming school finance systems including the renaissance of the foundation formulas.

As the argument for equity appeared to be unsuccessful and educational advocates became more concerned about lack of adequate resources to address students’ educational needs based on students’ distinct needs, the focus in litigation shifted from an equity-based argument to an adequacy-based argument.

**States’ Funding of Education is Inadequate**

According to Dishman and Redish (2010), by the late 1980s, litigants argued that states’ obligations to fund education adequately was a constitutional responsibility. This argument not only proved to be more successful than the equity argument, but Dishman and Redish suggested, it also helped states better articulate their role to fund education in states’ constitutions. Rose v. Council for Better
Education, (1989) is considered a pivotal case in the adequacy sphere of school finance. In Rose v. Council, the supreme court of Kentucky decided that the school finance system in Kentucky violated section 183 of the Kentucky Constitution by not instituting “an efficient system of common schools throughout the commonwealth.”

Litigations continued through the 1980s and 1990s arguing for adequacy. According to Dishman and Redish (2010), in 1989-1990 major rulings by five states’ high courts triggered significant changes in school finance. For example, in Wyoming, the court ruled that the legislature ought to provide funding to meet the basic educational standards as determined by legislators. Similarly, in Missouri the court ruled that the state funding system was not constitutional because it did not provide equal opportunity to achieve educational outcomes for all students (Ko, 2006). According to Ko, the national data at the time showed that Missouri was the worst state in the United States in providing equitable resources to school districts. In response to the court order, the Missouri Legislature adopted the Outstanding School Act in 1993 to establish a new funding formula that ensured equity in funding (Ko, 2006). The old system of funding was dependent on local property taxes, and each district levied taxes to fund its schools based on its budget, which created an inequity based on wealth. Districts in wealthy neighborhoods were able to levy more than those in depressed economic conditions. Under the new system, the state created a formula where districts across the state received equalized funding based on certain factors such as Average Daily Attendance (ADA). Using measures of equity including the
Coefficient of Variation, the Federal Range Ratio, the Gini Coefficient, and the McLoone Index, Ko concluded in his study that Missouri improved equity in funding after 10 years of enacting the new law and increased the overall funding for education. Ko did not go into details to show what other factors were included in the formula besides Average Daily Attendance. Reducing disparity in funding among districts meant that horizontal equity improved, but it is unclear whether it was adequate to fund school districts in Missouri.

As litigations over equity were argued in courts, states’ legislators attempted to adopt finance systems to respond to litigations and show that they were actively working to resolve inequity concerns. Research indicates that the pressure to reform school finance systems to provide adequate education increased in the 1970s and 1980s (Augenblick, Myers, & Anderson, 1997; Baker & Corcoran, 2012; Dishman & Redish, 2010; Sweetland, 2015).

Whether litigation caused legislators to implement change in school finance systems to be more equitable or adequate is debatable, but reforms continued to take place in many states. For example, in the State of Virginia, the Legislature instituted a formula of funding to equalize funding and shift it from localities to the State. According to Driscoll and Salmon (2008), the State of Virginia instituted a finance system based on the foundation program formula to achieve equity in its school finance system. In their study of the Virginia school finance system Driscoll and Salmon utilized the McLoone Index, the Gini Coefficient, the Federal Range Ratio,
and the Coefficient of Variation to measure equity. In the 30-year period covered by this study, the state saw improvement in horizontal equity initially; however, a decline in equity started to happen after one decade of implementation. In Texas, the State uses a foundation formula to ensure that all school districts receive an equitable amount per student regardless of the wealth of the district. This is done while taking into consideration that student needs vary. For example, the formula provides for additional weights that results in additional funding for students with special needs or English Language Learners (Rolle & Jimenez-Castellanos, 2014). Texas maintains a policy of financial equity and equality to educate students. It appears that Texas is focused on horizontal equity rather than vertical equity. Research indicates that Texas failed to fulfill this policy by allowing school districts to levy and keep their local property taxes, which created horizontal inequity and disparity among school districts. Wealthy districts can provide resources and services that other non-wealthy districts cannot provide (Rolle & Jimenez-Castellanos, 2014).

In summary, Sweetland (2015) explained that school finance litigations in the United States came through the court in three “waves.” In the first wave, advocates went to court to claim that education is a basic right based on the Fourteenth Amendment and, accordingly, all students should have equal rights. In the second wave, advocates protested inequity in funding between districts which violated students’ rights for equal opportunity. In other words, states should spend equal amount of money per student on schools regardless of the school districts’
neighborhood wealth. In the third wave, the focus was on adequacy and vertical
equity, where advocates claimed that states are responsible for providing adequate
school finance system that meets the different needs of students, which was alleged as
a violation of states’ constitutions.

**Funding Finance Systems: Equity and Adequacy**

Litigation over adequacy and equity took place in 45 states over the last 40
years (Glenn, 2009). And it is clear from the previous section that these litigations had
an impact on reforming school finance in the United States. Over the years, funding
policies in the United States shifted from one extreme to another. In the early days,
regulating educational funding consumed the policy debate in most states. Later, the
policy shifted to focus on both regulating educational funding and funding school
districts adequately and equitably.

In response to mass education systems, governments and states took on the role
of establishing funding systems to replace old ones. According to Westberg (2013),
old systems were largely funded by churches and philanthropists. Schools existed as
early as when states were first established in the 1800s. States’ contributions to fund
education were very limited in these early days. But as populations and demands on
education systems grew, and cost of education increased, the need for states to
contribute additional funding was inevitable. Over the last 60 years, education costs
increased significantly, Guthrie (2008) estimated the cost of education in the United
States at about $3.3 billion per day, and it was mostly funded by state and local
property taxes. In more recent reports, The U.S. Department of Education, National Center for Education Statistics (2017) reported that public schools spent about $634 billion in 2014 when adjusted for inflation in 2016, or about $11,222 per student, 80% of which spent on teachers’ salaries. Expenditures in 2014 were 5% higher than 2004 when adjusted for inflation. Per the U.S. Department of Education report, federal resources represented 9% of the total revenues generated by public schools, states resources represented 46%, and local resources represented 45%. This growth in the cost of school finance and the need for equity and adequacy demanded new and more sophisticated financial systems.

**Funding systems.** Funding systems are not new phenomena; scholars began designing formulas to account for differences in wealth of local communities as early as the 1920s (Baker & Corcoran, 2012). Verstegen and Jordan (2009) found that there were four types of finance formulas: (a) Foundation Programs; (b) District Power Equalization System; (c) Full-State Funding Model; and (d) Flat Grants. Not only were there different formulas, the application and funding per student varied greatly from one state to another.

According to Guthrie (2008), the work of Cubberley and others in the beginning of the 20th century influenced the evolution of equalization funding formulas across the United States. Augenblick, Myers, and Anderson (1997) implied that the reemergence of funding formulas was due to two reasons. First, the process of shifting policies in education’s funding from local control to states’ control. Second,
legislators recognized the need for differentiation in funding among students.

Augenblick, Myers, and Anderson (1997) explained that funding formulas come in different forms. The most widely used one in the United States is the foundation program (Verstegen & Jordan, 2009). The essence of the foundation program is to ensure that all school districts receive a minimum amount of money per student, regardless of its ability to levy local property taxes. Local taxes can cover a portion of the required amount, and the state covers the remaining from its general fund.

Under this type of model, allocations are made to local school districts in inverse proportion to local taxpaying ability. According to Walker (1977),

In theory, more state funds flow to "poor" districts than to "wealthy" districts.

The most commonly used model for apportioning state funds is the Strayer Haig model (Strayer & Haig, 1923), especially as amplified by Mort (1924). In the Strayer-Haig-Mort equalization scheme the cost of the foundation program, which the state legislature chooses to support, is computed; from that cost is deducted the amount of funds the local district can raise through a required minimum tax effort. The difference becomes the state allocation to the district.

(p. 12)

Stated simply, Foundation programs are a formula-based funding scheme which calculates the minimum amount of money considered sufficient to fund school districts regardless of the wealth of their local community. Once the amount is
determined, each district levies resources based on its local tax rate to pay a portion of the total amount; then the balance is funded by the state.

Before the foundation programs reemerged, states used a "Flat grant" method where they distributed a flat amount per educational resource. An example of educational resource is a student or teacher. In addition to the flat amount, school districts levied an amount of money from local property taxes or received additional contributions from their community. Flat grant funding favored wealthier districts and allowed them to generate more funding than poorer ones. According to Augenblick, Myers, and Anderson (1997), after passing the federal Elementary and Secondary Education Act in 1965, states used the flat grant to pay for categorical programs such as special education or textbooks. Some states used a “Reward-for-Effort” approach where the state would allocate a bigger amount per educational resource to poor schools while allowing each district the discretion to determine how much money it could levy in taxes from its local communities. Other states combined different methods and created a hybrid approach or a tiered method. In the tiered method, states enforced the foundation for a tier 1 and then allowed school districts to tax an additional amount at a higher rate in tier 2. In the tiered method, states provided an overall limit on tax rates for the combined tiers. Arguably, the Oregon system of financing schools can be explained by the tiered system where the basic formula funding is tier 1, and the local option is tier 2. Oregon funding will be discussed in much more detail below.
While many of those systems began surfacing since the beginning of the 20th century, several systems still exist today across the United States. According to Ladd and Fiske (2008), “The United States is one of only a handful of nations that rely upon a decentralized administrative and financing model rather than a national or central governmental system, to operate and govern education” (p. 7). For example, in most states, Foundation Programs are based on a revenue limit where an amount is levied from local taxes, and the remaining amount is funded by the state. Those formulas are built on an equalization concept to fund school districts an equal amount per student regardless of the wealth of the respective community. For example, assume there are two districts; District A and District B that have 10 students each. Both are funded using an equalization formula that limits their revenues to $5,000 per student from both state and local property taxes. School District A is less affluent than School District B and generates $10,000 in local taxes. School District B generates $30,000 in local taxes. Based on the equalization formula, both districts will be limited to receive (10*$5,000) or $50,000 in revenues from both sources of funding. Accordingly, School District A will receive ($50,000 - $10,000) or $40,000 in state funding while School District B will receive ($50,000-$30,000) or $20,000 in state funding. Using the equalization formula ensured that both districts receive an equal amount of money per student regardless of their local property tax bases. This is designed to prevent inequality in funding among school districts. However, equalization of funding was not enforced, because many states provided an exception to override their budget
limits. Districts could seek approval from their local taxpayers to levy additional local property taxes to pay for additional programs (Augenblick, Myers, & Anderson, 1997). For example, in 1999, Oregon legislators enacted laws that allowed public schools to seek local voters’ approval to levy additional taxes above the amount determined in the equalization formula to pay for additional programs in their local schools. This mechanism is referred to as Local Option (Oregon Legislature, 2017d). This exception appeared to cause inequality in funding among school districts where districts in more affluent neighborhoods get more funding than those in less affluent neighborhoods. In a small number of states, school districts are funded using state dollars or grants. Very few states use a District Power Equalizing System that guarantees equity for taxpayers by limiting the rate taxed to taxpayers with the difference made up with the state’s money. This system favored wealthy districts and allowed for funding differentiation (Verstegen & Jordan, 2009).

To address the needs of underserved students, English Language Learners, or special education students, some used weights to increase school districts’ funding. This approach is intended to solve the equity issue. For example, in England a Need-Based School Funding Formula is used to fund schools (BenDavid-Hadar & Ziderman, 2011). This type of formula uses weights such as poverty level, language proficiency, and special education needs. Using weights allow for differentiation based on needs. According to BenDavid-Hadar and Ziderman (2011), a needs-based formula is considered an improvement over a traditional formula that fund schools an
equal amount per student with no differentiation. A needs-based formula is a synonym to *Weighted Students Funding Method* (Ladd & Fiske, 2011) that is used in other countries such as the Netherlands, England, and Australia. Rolle and Jimenez-Castellanos (2014) traced the origins of the weighted funding method to the work of Mort (1924) and Mort and Reusser (1951).

Research indicated that in England, the Netherlands, and Australia, the funding system is structured to fund schools directly rather than funding through school districts; the latter is the model used in the U.S. By funding schools directly, these countries can target the local community’s needs much more precisely. By going to schools rather than going to districts, the government eliminates the middleman and ensures that resources intended for localities are not comingled in a large school district system. According to Bandaranayake (2013), funding schools directly allows the school’s management flexibility, and it is a fairer system to fund schools, because it meets students’ and equity’s need. Bandaranayake agrees that the funding formula system is not perfect, and it does not address certain factors such as school capacity and students’ socioeconomic and cultural backgrounds.

**Funding formula to achieve equity.** In the 1980s, countries around the world put formula-based funding to use in response to emerging neoliberal ideals and to address the lack of equality in funding. The concept of *equality in educational opportunity* was first discussed by Garms and Smith (1970). Garms and Smith defined the term equality as offering a program of education that achieves an opportunity of
equal outcomes to students regardless of their needs. The authors explained that equality can be accomplished by including factors such as the poverty level in the funding formula. Garms and Smith seemed to advocate for the vertical equity model. Vertical equity requires funding school districts an unequal amount per student to cover costs associated with additional needs, such as poverty level and special education.

In addition to differentiation in funding, vertical equity promotes adequacy. According to King, Swanson and Sweetland (2005), adequacy is sufficiency. Levacic (2008) agreed with this definition and explained, to judge whether things are adequate, one must assess whether it achieved its educational goals for all students. Levacic went further to say that it is difficult to assess adequacy when it pertains to students with special needs.

According to King, Swanson, and Sweetland (2005), adequacy can be measured financially using the econometric approach by determining the cost of organizing an educational system that achieves a desired outcome over a specific period. The cost will vary from one district to another and from one student to another based on each student’s characteristics. This definition focused on unequal input that leads to equitable output. Adequacy can also be defined using the successful school approach. According to King, Swanson, and Sweetland (2005), the successful school approach defined adequacy based on the level of funding that successful districts receive to offer an acceptable educational outcome, then uses this level as the
minimum to fund all school districts, including poor ones. The logic behind this approach is that if wealthy schools can succeed at this level of funding, then this level of funding should be determined to be sufficient for any other school to succeed. This approach does not take into consideration other factors such as students’ backgrounds, home support, poverty level, and other student characteristics that could affect the amount needed for schools to support those students.

Neoliberals advocated for a business model that focuses on reducing costs while improving efficiency in the education marketplace (Hursh, 2008). Neoliberalism appeared with the Reagan administration to transform public education by adopting an economic approach to supply the economy with skilled workers to compete at the international level. According to Hursh, neoliberal ideals linked the competition on the global stage economically to the necessity of reforming education objectives. Neoliberals saw the current system of education as inefficient due to public schools’ monopoly. Accordingly, they promoted choices such as charter schools and vouchers systems to allow for competition in the marketplace. Hursh explained that neoliberals endorsed the use of choice as a strategy to promote equity and eliminate racial discrimination in schools. Hursh suggested that neoliberals’ endorsement of choice was nothing but a vehicle to reorganize education and reduce funding. Hursh and others criticized these neoliberals’ reforms because they shifted the focus of education from the notion of democratic citizenship to a notion that emphasized
According to Hursh (2008) and Taubman (2009), some people might see value in these reforms because they provided standards that can be costed out, which could give state governments the amount needed to adequately fund education for all students, including ones with a disability and in low income schools (Baker, Sciarra, & Farrie, 2012). According to King, Swanson, and Sweetland (2005), adequacy was tied to *No Child Left Behind*, and it assumed that school districts had sufficient resources to create an educational environment where teachers could deliver quality instruction to help students achieve proficiency or higher levels of achievement on states’ standardized testing. King, Swanson, and Sweetland inspected the concept of adequacy using three different lenses. First, from a public policy lens, the national goal is set to ensure that all students must meet a high score on states’ assessments of specific state standards. In other words, using policy to affect the outcome in students’ learning by influencing the input in funds paid to schools. This can be accomplished by calculating the cost of educating students to complete a certain level of learning to determine the adequate funding. Second, from a judicial lens, adequacy means that “all students should have access to equal, efficient, and adequate educational opportunities” (King, Swanson, & Sweetland, 2005, p. 3). In other words, students, regardless of race, color, or income level, should have equal access to resources. Third, from an equity lens, adequacy can be argued as providing "greater degree of
In other words, inequity is the fact that students are unequal, and their needs vary, and therefore to provide adequacy, one must acknowledge that they are unequal. Escue argued that financial equity and adequacy are two concepts of school funding that contradict each other. Like other scholars, Escue associated horizontal equity with being equal.

Levacic (2008) agreed with the notion that achieving adequacy necessitates differentiations in needs and providing additional support. Levacic defined equity as being fair in distribution and utilization of educational funds. Like many other scholars, Levacic distinguished between horizontal equity and vertical equity using the concept of being equal or unequal. In his definition of horizontal equity, Levacic argued that the need for equal needs should be matched with equal funds to pay for it. In explaining vertical equity, Levacic explained that different needs require different level of funding. In discussing equity whether in the horizontal form or the vertical form, it is imperative to cite the efforts of Berne and Steifel. According to Ramirez, Siegrist, Krumholz and Rainey (2013), Berne and Stiefel (1984) were first to introduce the concepts of “horizontal equity” and “vertical equity.” For Berne and Stiefel, horizontal equity meant that similar districts are funded similarly, and vertical equity, meant that different districts are funded differently. Horizontal and vertical concepts of equity appeared to be rooted in the public finance theory, Musgrave (1961) discussed the concepts in his study of approaches to fiscal theories. Concepts of funding’s equity are widely accepted today among scholars and the courts in the
school finance discipline. According to Ramirez et al. (2013), fairness in school finance is a key metric to measure equity for school districts that have similar needs while allowing differentiations in funding for those districts that have distinctive qualities. Bandaranayake (2013) inferred that horizontal equity involved paying schools equal amounts per student regardless of needs, while in vertical equity, there were differentiations in distributions of funds. Bandaranayake (2013) explained that “vertical equity is the notion that students should be treated according to their different learning needs and characteristics” (p. 193). Garms and Smith (1970) introduced the concept of Equal Opportunity to fund schools based on outcomes and to pay for the cost of addressing students’ different needs. Baker, Sciarra, and Farrie (2012) defined adequate as “predictable, stable, equitable” (p. 1), and fairly distributed to schools to serve all students. They indicated that having an adequate system of finance that is fair is foundational to deliver high quality education to all students, because an adequate system accounts for additional needs such as low socioeconomic status. While Escue (2012) agreed that vertical equity promotes adequacy, she argued vertical equity is more complicated than horizontal equity because the value of being adequate is subjective and varies in its worth from one person to another. Escue explained that horizontal equity assumed that every student is equal, while vertical equity is the total opposite, considering that students are unequal. The premise of being unequal lies in the fact that students with special traits carry different weights than those without them. The challenge lies in implementing a system that is considered adequate and one
that provides additional resources for those who are not equal. According to Escue (2012), some pundits in school finance matters argued for more funding to support gifted students while others argued it is a characteristic matter that does not merit more funding, especially in states where the budget is constrained. Equity can also be judged by another lens, the ethical value lens. Equity in school finance policy does not only mean equal or unequal funding, but it could also embrace equal social, political, and economic status (King, Swanson, & Sweetland, 2005). The authors went further and explained that equity from an operational standpoint encompasses other factors such as a school’s environment and proper and just treatment of students in schools.

Garms and Smith (1970) appeared to agree. They argued that students who are not aligned with the dominant culture should receive more support. For example, immigrant students who are not accustomed to the United States may need additional help to make up for what is perceived gap in their knowledge to compete with other students who grew up in the United States.

The notion that some students need additional support because they are from different cultures can also be applied to poor students. Poor students typically lack financial means to obtain basic needs such as food and shelter, which could impede their ability to excel in school. Maslow explained in the theory of human needs, satisfying students’ basic needs of food and shelter is a prerequisite before students can move to the next level and be ready to learn. According to Maslow and Frager (1987), basic human needs can be categorized into five categories: physiological,
safety and security, belongingness, esteem, and self-actualization. Maslow argued that humans satisfy these needs in sequence. Maslow acknowledged that a person does not have to satisfy one need at 100% before he moves to the next level. The move to the next level is gradual and subtle where some may satisfy 85% of certain need while they are satisfying 10% of the next need. Maslow also explained that acquiring knowledge and learning could be categorized under self-actualization or self-esteem which supports the notion that the need to satisfy hunger is prerequisite to learning.

Finding a system that is both equitable and adequate while addressing social and other needs might be very complicated. It might be summarized best by Labaree (2013) as follows:

In a liberal economy, where a high degree of social inequality is the norm, people who enjoy social advantages are eager to preserve these advantages and pass them on to their children…when access to schooling increases, so does the stratification of schooling. More students come in at the bottom of the system to gain social access, and the system keeps expanding upward to preserve social advantage. Levels of education rise but social differences remain the same. We want a society that allows us to have things both ways – equality and inequality, access and advantage. (p. 1)

Being equitable and adequate while preserving advantages that the privileged ones have seems to be the crux of this matter. This might explain why some argued; adequate finance systems cause further segregation. Segregation is a term used to
describe separation of Black from White students. This was the underlying argument in Brown v. Board of Education (1954), where the plaintiff argued that Black students should be able to attend the same facilities as White students and that separate but equal is not constitutional. The court agreed with the plaintiff and ruled that separate but equal violated the equal protection clause in the Fourteenth Amendment of the U.S. Constitution. Ladd and Fiske (2011) showed evidence of segregation due to using a weighted student funding model in the Netherlands. They argued, providing additional revenues to schools that enroll higher rates of disadvantaged students could encourage enrolling more disadvantaged students if the cost to educate them was less than the revenues generated from enrolling them. *Improvement in the Educational Achievement Distribution* (IEAD) may solve this problem. IEAD was introduced by BenDavid and Ziderman (2011); in their view it provided two elements that improve achievement for poor schools and narrow the achievement gap between schools without reducing achievement in higher achieving schools. IEAD is a funding system that incorporates elements to address differentiation in students’ needs based on their academic starting point while adding an incentive to encourage further improvement in achievement for ones on a higher level of achievement. Under this model, schools with lower achievement receive larger budgets to address academic needs while preserving academic progress by adding incentives for schools that are already in a higher academic status. It is not clear how this model would be implemented in a constrained budget where resources are never unlimited. This model does not appear
to address other equity related concerns such as racism and discrimination which could affect academic progress.

BenDavid-Hadar and Ziderman (2011) suggested there is a positive correlation between the achievement gap and additional funding. Alexander and Wall (2006) agreed and suggested that the United States education’s finance system failed poor students and did not bear equitable funding to improve learning. According to Alexander and Wall (2006), the U.S. changed its focus and pivoted away from helping problem solve poor students’ challenges to a role focused on competing on the global stage and one that emphasized economic efficiency in educating students. The economic model did not give schools adequate funding for poor students because the focal point of the efficiency model is to reduce the cost per unit and to increase output through open market and competition. Alexander and Wall (2006) agreed with BenDavid-Hadar and Ziderman (2011) on advocating for increasing funding to schools to compensate for additional costs and to encourage schools to add financial resources to address students’ needs. Wenglinsky (1998) presented different view on the topic of funding and academic progress, in his view, research did not find a positive correlation between improved achievement and increased funding. Wenglinsky argued that there are three factors that affect academic progress: (a) targeted funding for instructional related resources is more critical than increasing funding overall, (b) focus resources on earlier years in student education, and (c) add
resources for 12th graders not to improve achievement but to improve students experience and reduce “within school disparities” (p. 280).

The impact of increased funding on achievement is important, but it is beyond the scope of this study. This study is more concerned with allocation of resources among school districts equitably and policy changes that impact equity. Unfortunately, there are reforms that could yield unintended consequences on students’ education. For example, in Oregon, a voter’s initiative caused a significant change in funding education even though proponents of the initiative may have been interested in controlling the increase in local property tax rather than reducing school districts’ funding. This initiative was called Measure 5, and it inspired significant financial policy that changed the amount of money school districts in Oregon receive and the way it is calculated.

**Initiative for Equity: Measure 5**

In 1990, frustrated taxpayers led efforts to approve Measure 5 which caused considerable reform in Oregon’s school finance. Their frustration could be sensed in the statement of support made by Don McIntire’s who is considered the father of Measure 5: “For the sixth consecutive time the Oregon Legislative Assembly has failed to deal with escalating property taxes and unequal school finance.” Measure 5 may have been influenced by Proposition 13 in California. Efforts to equalize funding in California started in 1970 (Canfield, 2013). Those efforts were in response to a lawsuit by a parent alleging that low wealth school district students did not receive
equal education opportunities, which violated the California Constitution. The court ruled in favor of the plaintiff and ordered the State to reform school finance. The Legislature reacted by creating a funding system that limited revenues, and eventually voters passed Measure 13 to limit local property taxes and shifted funding from local taxpayers to the State. It is not clear if the State actions improved the vertical equity in funding or not. Martin (2006) disagrees with the notion that litigation caused voters to pass Proposition 13 in 1978. In his research, Martin pointed out that critics argued that court efforts to equalize funding among school districts caused taxpayers to revolt demanding caps to their property taxes and to fight back against subsidizing school districts outside their neighborhoods. The notion that litigation caused taxpayers to rebel is known as the Fischel theory. According to Martin (2006), Fischel argued that Serrano v. Priest (1971) inspired taxpayers to revolt and vote for Proposition 13. Martin explained, Fischel claimed Californians agreed to property taxes when they perceived it to be a just and reasonable price to pay for their students’ public schools. However, after court intervention to mandate equalization of funding, Californians refused to subsidize public schools from other communities and therefore rebelled by voting for Proposition 13. After reviewing related literature, Martin said that the literature shows no evidence to support that proposition 13 passed in California in retaliation against Serrano v. Priest (1971). For example, in measuring the relationship of those who voted for Proposition 13 and those who had favorable views of equalization and support for Serrano, Martin found that those who voted for
Proposition 13 did not have positive view of equalization or linkage to the Serrano case.

In Oregon, much like in California, Measure 5 galvanized legislators to transform the funding system of school districts. Measure 5 specifically amended Article 9 (OR. Const. art. XI, § 11) by limiting taxes to $15 per $1,000 assessed value starting in 1991-1992 and lessening the amount to $5 per $1,000 assessed value by 1995-1996. The purpose of this amendment was to limit increases in property tax rates and to shift responsibility of schools’ funding from local property taxpayers to the State (Waters, Holland, & Weber, 1997). The era before approving Measure 5 witnessed great reliance on local property taxes with about two thirds of schools’ funding came from local property taxes. During this period, wealthy districts generated more money than poor districts, which gave them an advantage in offering more competitive educational programs and created inequity among school districts.

The Reliance on property taxes and inequity in schools’ funding was highlighted by Measure 5 proponents such as Measure 5 Provides Stable Funding for the Public-School System, an organization that supported the measure. In their statement of support of Measure 5, they said:

What makes the current system so "awful"? First, property taxes (the cruelest taxes of all) continue to grow at a rate far out-stripping the owner's ability to pay. Second, schools depend on property taxes for nearly two-thirds of their operating funds. When voters reject levies, schools must make drastic cuts,
sometimes affecting the quality of education, and nearly always causing tensions and demoralization among students, parents and staff. Third, this dependence upon property taxes creates an unfair (and perhaps, unconstitutional) inequality between affluent school districts and those districts with more modest assets or declining economic trends (State of Oregon, 1990, p. 34).

Opponents of Measure 5 argued that Measure 5 is not the answer and it would harm school districts financially. For example, The League of Women Voters of Oregon Urges a NO Vote on Ballot Measure 5. No, an organization that did not support the Measure, explained that Measures 5 would harm schools financially, and it would not protect schools against State cuts. In their statement of opposition, they said:

The Legislature might reduce or even eliminate the money it currently provides for schools and community colleges in order to replace lost school property tax revenue if no other revenue source is found. School operating revenue would be reduced. After 1995-96, the replacement requirement of Measure 5 will end. With a $5/$1,000 tax rate limitation for schools and no replacement revenue, most schools would not function. What happens to Oregon's children then? Replacing lost school property taxes with state funds won't protect schools (State of Oregon, 1990, p. 40).
Despite efforts to defeat the Measure, Measure 5 won by 52% of the vote. In passing Measure 5, opponents succeeded in shifting the burden of schools’ funding from the local taxpayers to the State. Shifting the responsibility of funding is evident in comparing the percentage of funds that school districts received from the State before and after Measure 5 passed. For example, the State of Oregon contribution to fund K-12 education increased from 30% pre-Measure 5 to about 67% of school districts’ funding for the 2017-2019 biennium (Oregon Legislature, 2017c). To absorb the increase in the State’s portion of the funding formula, the State relied largely on the General and Lottery Funds. Over the years, other funds were also used to fill the gap in the state budget such as revenues from the State timber tax, Common School funds, donations of Kicker Rebates, Marijuana tax resources, and Local Option Equalization grants (Oregon Legislature, 2017c).

While supporters of Measure 5 succeeded in limiting the tax rate to 5%, they soon discovered that the amount of property taxes continued to increase because of growth in property values. To contain increases in the amount of property taxes, voters put Measure 50 on the 1997 ballot. The official pamphlet read:

The measure establishes the maximum assessed value of property in this state for the 1997-1998 tax year as 90 percent of the property’s real market value in the 1995-1996 tax year and then limits any increase in maximum assessed value for tax years following 1997-1998 to three percent per year. (State of Oregon, 1997, p. 5)
Measure 50 succeeded and affirmed Measure 5 to limit the property tax rate to 5% per $1000 assessed value while the real market value of property is limited to grow at 3% annually above the 1997-1998 baseline. By doing so, supporters of Measure 50 ensured that both the amount and the tax rate on property taxes is contained.

According to the ballot when it passed, Measure 50 would reduce property tax revenues by $361 million in the 1997-1998 fiscal year and $443 million in the 1998-1999 fiscal year compared to what would have been collected under Measure 5. Measure 5 and Measure 50 proved to be very significant in its impact on revenues. To put things in perspective, the average tax rate per $1000 prior to Measure 5 averaged about $23 compared to about $12 in 2015 (Oregon Department of Revenue (2015). In other words, the impact of Measure 5 and 50 reduced the amount of property taxes by about 50% of the amount that taxpayers would otherwise have to pay. The impact on school districts revenue must have been great and it had to play a role in Governor Kitzhaber decision to support Measure 1 in 2000. Measure 1 amended the Constitution requiring Oregon Legislature to fund schools adequately to meet established quality goals by the law or explain why it cannot fund schools sufficiently. It was clear from those who supported the measure, that they were not pleased with the amount of funding allocated to school districts and complained that legislators did not make education a priority (State of Oregon, 2000). Since Measure 5 was approved in 1990, two voter initiatives surfaced on the ballot to increase revenues for school districts but

Oregon Legislature’s inability to fund school districts sufficiently might stem from the State reliance on property tax and income tax to fund its program and services. According to Oregon Legislature (2017e), Oregon’s property taxes ranked 18th and personal income taxes ranked 3rd as percentage of personal income in comparison with other states. To meet its obligations for public services and shortfalls during economic down turns, the state created the *Education Stability Fund* (2002) and the *Rainy-Day Fund* (2007) (Oregon Legislature, 2018). While creating these funds is helpful, it does not seem to be effective in addressing significant shortfalls during economic downturns such as the recessions in 2001 and 2009. Educational advocates continued to express their frustration with State legislators’ inability to fund education and for their reliance on a tax system that does not provide adequate funding. Most recently, educational advocates put Measure 97 on the ballot to change the sales tax system to generate additional funding for schools, but the Measure was defeated.

The Legislature in Oregon was not always inactive about school finance reforms, but they may not have had the right opportunity to advance them until Measure 5 passed. According to members of the task force which was assembled by the Oregon Legislature, legislators saw an opportunity after Measure 5 passed to unravel the unfairness in the Oregon system of funding school districts (Oregon Legislature, 2014). Advocates for education and educational leaders may disagree and
it was evident in Pendleton School District v. Oregon (2008). Within this context, the Oregon Legislature passed SB 814 in 1991 which resulted in amending Chapter 327 — State Financing of Elementary and Secondary Education (Or. Rev. Stat. § 327). By doing so, the Oregon Legislature sowed the seed for the equalization formula which is the outcome of the State School Fund Grants (Or. Rev. Stat. § 327.008) and the State School Fund Distribution Computations for School Districts (Or. Rev. Stat. § 327.013) (Oregon Legislature, 2014). These revisions and amendments in state statutes resulted in creating the State School Fund (SSF) Distribution Formula (Oregon Legislature, 2014), or as commonly known in Oregon, the Equalization Formula (Oregon Legislature, 2004). In enacting the formula, the Legislature hoped to achieve equity in the State’s school finance system. The equalization formula is based on foundation program formula where the state guarantees a minimum amount of money per student and pays for it using the amount of money generated by local property taxes to pay for a portion of the formula then the State pays the balance from the State general fund. Oregon equalization formula will be discussed in the next section.

**Oregon equalization formula.** The Oregon equalization formula is called the State School Fund (SSF) Distribution Formula. The formula was adopted in 1991 to fund school districts an equal amount per-student, acknowledging the need for additional support by designating added weights to fund additional needs such as being an English Language Learner (Oregon Legislature, 2014). English Language Learners are among many other categories where school districts receive additional
weights. For example, the Legislature designated among many factors, poverty, pregnancy, and special education as added categories for which school districts receive additional weights which yield more funding. See Table 1 below for a detailed listing of the additional weights in the equalization formula (Oregon Legislature, 2014).

In Oregon, the basis for funding is the Average Daily Membership (ADM) weight. The ADM equals a weight of one for every student enrolled for all instructional days offered by a school. For example, if student A is enrolled for 180 days in a school that offers 180 instructional days, student A’s enrollment equals 1 ADM. ADM is the basis for the State school funding formula which reads as follows (Oregon Legislature, 2014):

General Purpose Grant = (ADM weighted x [$4500 + ($25 x Experience Adjustment)]) x Funding Ratio.

In addition to the weights, the funding ratio is an important element in the formula, which is used to adjust funding distribution based on the appropriated amount by the Legislature. The funding ratio is a calculated ratio by the Oregon Department of Education and is used to adjust the funding formula to ensure appropriations are sufficient to cover funding among all school districts (Oregon Legislature, 2014). The ratio is simply dividing the amount of formula revenue available for distribution per ADM divided by the target amount.
To understand the funding ratio, one should review the Oregon Department of Education website for school district funding reports. To calculate the ratio. First, calculate the Amount of Revenue per ADM available for distribution using this formula:

\[
\text{Amount of Revenue per ADM} = \frac{(\text{Formula Revenue for Distribution} - \text{Transportation Grant})}{\text{ADMW}}
\]

Second, calculate the ratio using this formula:

\[
\text{Amount of Revenue per ADM} / \text{Target Amount per Oregon Statute}
\]

To demonstrate how the funding ratio works, review the State School Fund Estimate report dated November 30, 2017 from the Oregon department of education website (Oregon Department of Education, 2018). In the report, the formula revenue for distribution equals $5,662,198,198, Transportation Grant equals $208,980,473.30, Total ADMW equals 710,000, Target Amount per ADM is $4,500 per Oregon Statute.

\[
\text{Amount of Revenue per ADM} = \frac{$5,662,198,198 - $208,980,473.30}{710,000} = $7,681
\]

\[
\text{Funding Ratio} = \frac{$7,681}{$4,500} = 1.706,808,045.
\]

According to the Task Force on School Funding, the formula takes in consideration two additional factors, transportation and teacher experience (Oregon Department of Education, 2014). The transportation factor provides for 70% to 90% reimbursement of the cost of transportation reported by school districts. The teacher experience index formula is:
$25 X [district teacher experience average - state wide teacher experience average].

In addition to transportation and teacher experience, the state takes into consideration the amount of permanent taxes levied by each school district. The formula adjusts school district funding for local taxes to equalize funding, so per-student funding is equal regardless of school district wealth (Oregon Department of Education, 2014). In its 2017-2019 biennium budget, Oregon budgeted $12.2 billion with $8.2 billion allocated from State’s sources to fund education (Oregon Legislature, 2017c). The Legislature admitted that the funding formula may not necessarily translate into an equal achievement level, but it will offer an equal opportunity.
### Table 1

*Oregon State School Fund Distribution Formula*

<table>
<thead>
<tr>
<th>Category</th>
<th>Weight</th>
<th>Total Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Education</td>
<td>1.00</td>
<td>2.00</td>
</tr>
<tr>
<td>English Language Learner</td>
<td>.50</td>
<td>.50</td>
</tr>
<tr>
<td>Pregnant &amp; Parenting</td>
<td>1.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Student in Poverty</td>
<td>.25</td>
<td>1.25</td>
</tr>
<tr>
<td>Neglected and Delinquent</td>
<td>.25</td>
<td>1.25</td>
</tr>
<tr>
<td>Students in Foster Homes</td>
<td>.25</td>
<td>1.25</td>
</tr>
<tr>
<td>Elementary District Students</td>
<td>-.10</td>
<td>.90</td>
</tr>
<tr>
<td>Union High District Students</td>
<td>.20</td>
<td>1.20</td>
</tr>
<tr>
<td>Small School Students</td>
<td>Varies</td>
<td>Varies</td>
</tr>
</tbody>
</table>

School districts can generate more revenues if they qualified as small school districts. Oregon appropriate about five million dollars each biennium for Small School District Supplement Fund. In 2001, Oregon legislature created the small school supplement fund in recognition of the need to differentiate funding for small schools because they cannot generate enough funding to operate their schools based on their student enrollment (Oregon Legislature, 2001). The fund is used to allocate additional dollars for districts under 8,500 (weighted) students, with high schools’ enrollment
under 350 students for four grades and 267 for three grades. Currently, 84 school
districts out of 197 qualify (Oregon Legislature, 2017d).

Research revealed that foundation formulas are popular because they guarantee
a minimum level of funding assumed to be adequate to cover the cost of education
(Augenblick, Myers, & Anderson, 1997; Baker & Levin, 2014). Oregon equalization’s
formula, is like formulas found in other states, it allocates a minimum amount per
student then increases the funding using additional weights associated with students’
needs. (Augenblick, Myers, & Anderson, 1997) suggested that the component of the
foundation formula should be assessed to determine that they are selected based on
sound research and justified basis to meet its educational objectives and the cost of
student needs. In Massachusetts, the department of education reviews three major
factors in determining the additional increase to education funding; inflation factor,
wage increase index and student enrolment (Massachusetts Department of Education,
2018) Massachusetts efforts seemed to pay off as the state ranked one of the top
districts in providing adequate funding to schools (Baker, Sciarra, Farrie, Johnson, &
Luhm, 2017). In Oregon, in its report to the Legislature, the Task Force on School
Funding 2013-2014 indicated that the weights and the target amount in the formula
were determined based on research at the time of adopting the formula (Oregon
Legislature,2014). But it appears that neither the target amount nor the weights were
revisited since adopting the formula in 1991 to ensure they are still adequate. the
Funding Panel Report to the Quality Education Commission highlighted the need to
establish performance goals and examine each weight category in the equalization formula and update them to ensure the weights allocated are based on research (Oregon Department of Education, 2002). Research indicated that costing each weight category and determining the base amount to fund educational goals adequately is difficult and is mostly theoretical. According to (Augenblick, Myers, & Anderson, 1997):

Legislatures, by their nature, do not normally begin by setting goals, assessing needs, and calculating the cost of achieving those goals. As one observer noted,

Legislatures, after all, are accustomed to deciding how far to go in pursuing a particular policy aim on the basis of available resources, competing demands for them, and often inarticulate judgments about societal priorities."3 In other words, legislators divide the state's available tax revenues among all the state's endeavors on the basis of political negotiations. (p. 74)

In other words, the amount of money that is available to state legislators is the main driver of funding education rather than educational objectives and students’ educational needs. In fact, research indicated that categorical weights and funding formulas were not based on research and it is typically below the estimated cost needed to provide the appropriate support needed. For example, cost studies of funding programs for at risk students revealed that low income students are funded on average an additional 15% to 25% of funding per student but the cost averaged
between 139% to 310% of the average regular student’s cost (Alexander & Wall, 2006). In Summary, Alexander and Wall provided three conclusions regarding established funding formulas: (a) Cost differentials used in funding formulas were not based on research or actual cost, (b) Weights used were insufficient to help low income students, and (c) because cost of educational programs are driven by the percentage of low income students in schools, the quality of educational programs for low income students varied from one school to another. Alexander and Wall suggested that lack of knowledge and acknowledgment of students’ need by policy makers continued to hinder efforts to fund education adequately. To determine the effectiveness of the policy adopted by Oregon legislators to fund education, the policy should be analyzed. According to Dunn (2004) “Policy analysis is a problem-solving discipline that draws on theories, methods, and substantive findings of the behavioral and social sciences, social professions, and social and political philosophy” (p. 1). Policy analysis covers five relevant questions. First, what type of problem are you trying to solve? In this case, Measure 5 passed by Oregon voters which resulted in limiting tax levies by school districts. School districts’ funding is at risk of losing a significant amount of funding due to lost levies. Second, can you identify two or more options to solve the problem? Legislators can fund the lost revenues to school districts due to Measure 5’s impact, or they can choose to change the way schools are funded. Oregon legislators chose the latter. Third, what are the results of using each option? By reimbursing school districts for lost revenues from lost levies, this could cause a
major shift of revenue loss from local taxpayers to the state, which may not result in equitable distribution of funding to school districts. Oregon legislators choose to create an equitable funding formula to ensure equity in distribution of money to school districts. Fourth, do the results show evidence to solve the problem? Analyzing distribution of funding to school districts before and after passing measure 5 can provide an indication as to whether equity is achieved or not. Fifth, if other options applied, what results should we expect in the future? Further analysis of other option would need to be identified and analyzed.

**Equal Educational Opportunity and Deficit Thinking**

It can be argued that offering an equal amount of money per student to school districts may not necessarily translate into an equal educational opportunity. As it was believed by the members of the Oregon legislative task force; there were other factors that affect learning. Garms and Smith (1970) declared that even if districts achieved equity in funding, other non-financial factors such as the quality of teachers, low socioeconomic backgrounds, instability in households, and uneducated parents, are among many other factors that impact students’ learning, achievement, and create a deficit situation for students. If students come from a deficit situation, students need additional support and attention to make up for this deficit. Students who are hungry may not be ready to learn until they eat. Students who live in an unstable household, need assurance and comfort to be ready to learn. This does not mean these students are not capable intellectually to learn, but it does mean that other factors impede their
ability and distract them from learning. Garms and Smith said that students with
deficits should be offered programs based on their needs so that they can achieve at
the same level as students without those deficits. According to Ylimaki, Brunderman,
Bennett, and Dugan (2014) “deficit thinking refers to culturally neutral gaps in
learner’s knowledge, belief systems, and skills” (p. 34).

Bourdieu (1986) reasoned that students’ achievement varies due to lack of
cultural capital between students who come from different social classes. This could
be interpreted to say that families’ lack of cultural capital is the reason why their
students are not achieving at the expected level in schools. In addition to cultural
capital, Bourdieu claimed that the concept of capital has three dimensions. One
dimension is economic and can be translated into money and worth. The second
dimension is social. Bourdieu explained that social capital can be monetized based on
social status where the social status can yield power and influence which could be of
value for some people. The third dimension is cultural which can be materialized into
wealth by putting financial value on achieving certain educational status.

Bourdieu argument is probably the most basic challenge for schooling students
in the United States. His argument might fit an environment where people are
homogenous and not as diverse as the populations of the United States.

Yosso (2005) seemed to acknowledge this diversity and disagreed with
Bourdieu’s negative view. Yosso insisted that students from different classes can bring
something of value to the table. Yosso (2005) explained that those who believe in
deficit thinking blame minority students and their families for their poor performance at school due to: (a) lack of cultural capital that other students have; and (b) lack of support by students’ parents and families who do not value education. In Yasso’s view, these assumptions about minorities are racial and often result in depriving other students from opportunities to benefit from rich and diverse culture that community of color bring to school. Schools might lose sight of this opportunity and try to force a dominant’s cultural knowledge on minorities because schools may believe it’s the only culture that is considered valuable for the society.

In explaining deficit thinking, Yasso asserted that the horizontal equity is ineffective when it comes to students from different cultural backgrounds or races. Providing the same education without acknowledging students’ cultural differences will not yield similar outcome.

Teaching is an art. Teachers are like artists, who bring different colors to life in their artwork. Teachers can draw from a rich variety of funds of knowledge about their students’ everyday lives, which may include the family’s trade, business, rural origins, and other things that impact student lives. According to Gonzales et al. (2005), when teachers become familiar with students’ life, it becomes a very enriching experience for them which results in better interaction with students. In visiting students in their homes, Gonzales et al. claimed that teachers can learn more about their students and their culture which allows them to strengthen their relationships, thus they can better reach the students and teach them. With this knowledge, teachers can connect subjects
taught in class to things they learned about the students in home visits. As a result, teachers can improve students’ learning.

This argument is not exclusive and is inclusive of other matters such as race. Bifulco (2005) argued that student achievement is a good indicator for equity in rendering educational services if no other factors exist. He argued, however, that humans come with different characteristics and backgrounds both socially and intellectually that affect the services they receive. In his view, delivering quality education that is equal to all students is complicated because they are delivered mostly by teachers, and people who are inherently different. People come from different races and cultures which make their knowledge different, and accordingly the system of education is required to mold teachers into a system of education that can address all students’ needs. Mehta (2013) suggested that the fault is in the system of education itself. To achieve better outcomes in our schools, the focus should first be on the education system. Mehta suggest that the key challenge that faces education is the bureaucratic system that education is evolved around.

Mehta (2013) insisted that both advocates and legislators alike are looking at the problem from the wrong lens. Mehta believes that education problems stem from the system of education. He explained that the system of education should be compared with other professions such as the medical field. In his view education should evaluate the system of recruiting teachers to study education, the system of acquiring the knowledge given to them, the system of sustaining this knowledge and
keep improving it, and finally the system of holding teachers accountable to ensure that they adhere to their professional responsibility in educating students. Mehta implied that because the education funding is low, teacher pay was low relative to other professions and if it was not for the union it would have been even lower. This may have contributed to the bureaucracy in the education system.

According to Garms and Smith (1970), most states in the United States adopted a system of funding that includes local taxes supplemented by state aid money to equalize funding. States supplemented local efforts to mitigate the impact on local taxpayers and to equalize local tax levies among school districts. The purpose of equalization in this context is to attain “equity of educational opportunity.” Garms and Smith suggested that the concept of equalization in most states is not achievable, because schools provide students with a basic educational program in exchange for local taxes that may not be adequate. According to Compton and Thompson (2011), policy makers dictate their objectives to enhance equity or adequacy through legislations that governs the state education finance system for schools.

Some argued that cost is higher when students are a minority, according to Baker and Green (2009), "it costs more to achieve desired educational outcomes in school districts where larger shares of the student population are Black" (p. 316). The authors argued segregation policies drive cost higher and that balanced integration and race-neutral policies drive costs down while achieving better educational outcomes. While Baker and Green’s focus in this study was on segregation policies of Black
Americans, the study showed similar results for Hispanic students and students who are not proficient in English. Thus, the research showed great interest in the concepts of equity and adequacy from a litigation and a philosophical standpoint. There were also some that focused on equity from an expenditures standpoint, but far fewer studies focused on revenues to determine equitable distribution of resources (Driscoll & Salmon, 2008; Ko, 2006; Escue, 2012).

**Summary**

Litigations over equity in schools’ funding began by challenging states on the ground of the equal protection clause in the U.S. Constitution. Most notably in Brown v. Board of Education, the U.S. supreme court ruled in favor of plaintiffs and agreed that segregation is unconstitutional but explained that education is not a fundamental right in the U.S. Constitution. Advocates did not win by arguing that inequity violated the U.S. Constitution or states’ constitutions, but they made more progress by arguing for adequacy.

The 1970s and 1980s witnessed an increase in allegations on the premise of violating education clauses in states’ constitutions. While some courts found some states were guilty of violating the educational clause, many others ruled that states operated within their constitutional authority. In states where the constitution was violated, courts mandated them to reform their financial system. Augenblick, Myers, and Anderson (1997) summarized the impact of litigations in tow noticeable changes. First, the total education funding and state’s portion for school districts increased.
Second, the local control over the amount that can be levied by school districts was decreased. In addition to those two changes, one might add a third, reforming school finance systems including the renaissance of funding formulas. After litigants failed to challenge both the U.S. Constitution and states’ constitutions based on equity, they attempted to challenge states over the notion of adequacy. While adequacy-based allegations garnered more support in court than equity allegations, they proved hard to quantify and implement.

Between 1970s and 1990s, voters were fed up with legislators and decided to take matters into their own hands through voters’ initiatives. California passed Proposition 13, and Oregon passed Measure 5. Both transformed the property tax system in their perspective states. In Oregon, after passing Measure 5, legislators instigated financial reforms and instituted equalization formula based on foundation programs to fund school districts equitably or, so they promised. In their system’s reforms, legislators developed a two-tiered approach to finance education. The equalization formula guarantees equal distribution of resources in tier 1, while districts can levy additional resources above the formula in tier 2 provided voters’ approval. Oregon is not alone in its efforts to reform school finance. We have seen this in other states such as California with proposition 13 and Missouri. For example, the Missouri Legislature adopted the Outstanding School Act in 1993 to establish a new funding formula that ensured equity in funding due to inequity concerns (Ko, 2006).
As indicated earlier funding formulas existed in the United States as early as the turn of the century (Baker & Corcoran, 2012). According to Verstegen and Jordan (2009), today, four types of finance formulas are used across the 50 states in the US: (a) Foundation Programs; (b) District Power Equalization System; (c) Full-State Funding Model; and (d) Flat Grants. The Foundation programs are the most used ones in the United States, and they are attractive to achieve equity.

Equity and adequacy are widely discussed as concepts of equity. Equity is the state of being equal and is also known as horizontal equity. Adequacy is the state of being sufficient, or unequal, and is also known as vertical equity.

The purpose of equity is to give all students access to equal educational opportunity.
Chapter 3: Research Methods

States across the United States struggled with the notion of equity for many years. While initiation to tackle this matter may start in court or simply by going to the ballot, legislators are the ones that must create a policy to address these concerns by adopting laws and regulations. This study, therefore, analyzed funding level data of school districts in Oregon to determine the equity of funding. This chapter discussed the methodology of this study, including the purpose, research questions, research design, populations, instrumentations, research procedures, and data analysis.

Purpose of the Study

The purpose of this quantitative study of a 20-year time period of school funding is to determine the impact and effectiveness of passing Measure 5 and school finance reforms on the equity of funding. The purpose statement was investigated by analyzing the funding of all school districts in the State of Oregon. The study was only concerned with revenues in the general fund accounts where the State School Fund Grants are deposited. The study covered the period from 1995 to 2015 to ensure there are sufficient data and timelines to compare funding and show financial and statistical analysis to provide evidence that support this research.

Research Questions

Measure 5 implementation provides equity in funding for students across the State of Oregon regardless of individuals’ wealth within the district. This study attempts to answer the following research questions:
1. How has the equity of funding changed over time from 1995 to 2015, following the implementation of Measure 5 in 1991?

2. To what extent is the funding in Oregon equitable, as measured by a variety of equity methods?

This study put Measure 5 in a historical context that showed why Measure 5 passed. It also synthesized research relevant to the concepts of equity, adequacy, and equal opportunity in relation to school funding. More importantly, this research aimed to provide answers to questions related to equity of school district funding in the state of Oregon and help both advocates and policy makers understand the impact of policies such as Measure 5 on reforming finance policies.

**Research Design**

In conducting this longitudinal quantitative research, the study relied on school district level data collected by the Oregon Department of Education. This study was guided by two main studies: the study on the impact of the equity formula on school finance equity in Missouri by Jang Wang Ko published in 2006 and Driscoll and Salmon’s study on the State of Virginia’s equity school finance reforms in 2008. Consistent with those two studies, several measures of equity and statistical analysis were performed. The reason statistical analysis made sense for this research is because it allowed for analysis of trends and correlation to compare data over a period and showed whether equity is achieved based on the changes in policies.
Populations

Consistent with Driscoll and Salmon (2008) study of equity in Virginia, this study was completed using a five-year interval of data starting with 1995 until 2015. In the Driscoll and Salmon Study, the authors selected subjectively intervals of different years to complete their equity study in their 30-year study of the school finance system in Virginia. In this study a five-year interval was decided subjectively to gather sufficient data that cover the 20 years period for this study. After deciding on a five-year interval of data, and receiving Institutional Review Board approval for this study, public information request was submitted by August 1, 2017. The request for data was made by an email to the Director of School Finance at the Oregon Department of Education. The data request included: school districts by name, districts’ county, Average Daily Membership, total Equalization Funding Formula revenues and per student revenues for each district in 1995, 2000, 2005, 2010, and 2015. The data were largely public information and available to any citizen by going through the public information request process. Emails and phone calls were used to follow up and ensure clarity for the data received. The Director of School Finance provided the requested information in a series of emails due to the large size of the data. The data provided by School Finance included all 197 school districts data as requested and for all five years, 1995, 2000, 2005, 2010, and 2015. In conducting the study on all school districts, this eliminated the need for sampling and ensured that all districts were represented in the data analysis. Average Daily Membership, total

**Instrumentation**

Consistent with other research (Driscoll & Salmon, 2008; Escue, 2012; Ko 2006; Ramirez et al., 2013), basic descriptive statistics were used to analyze equity which included the mean and standard deviations. To measure equity, the study focused on five widely used measures: (a) the Coefficient of Variation, (b) the Federal Range Ration, (c) the Gini Coefficient, (d) the McLoone Index, and (e) the Correlation Coefficient. Those five measures were widely used to measure equity (Driscoll & Salmon, 2008; Kelly 2015; Ko, 2006). In determining methods of equity, Escue (2012) explained that horizontal equity recognizes that every student is equal, but vertical equity is the opposite of horizontal equity and recognizes that students are unequal, and accordingly required unequal funding. Research showed that vertical equity is the opposite of horizontal equity, while horizontal equity indicates equality, vertical equity indicates inequality (Garms & Smith, 1970; King, Swanson, & Sweetland, 2005; Levacic, 2008; Musgrave, 1961). The premise of being unequal lies in the fact that students with special traits carry different weights than those without them, therefore, vertical equity is evident when the analysis yields unequal amounts per student funding. Accordingly, it is logical to assume that horizontal equity and vertical equity are mutually exclusive. Therefore, if the study found evidence of horizontal equity, it was concluded that vertical equity was small or absent.
Below is a description of the five measures of equity utilized in this research.

**Coefficient of variation (CV)** is a measure of variation, and it is calculated by dividing the standard deviation by the mean, and it has a value between 0 and $\infty$ (Ko, 2006; Kelly, 2015).

$$CV = \frac{\text{the Standard deviation of per student funding}}{\text{the Mean of per student funding}}$$

According to Garms (1979) the greater the value of the coefficient of variation, the greater the inequality. For example, assume in 2005 the standard deviation of a school district’s per-student funding is 1000, and the mean is 5000, CV equals 0.20. This indicates that two-thirds of the districts per student funding is within -0.20 of the 5000 and +0.20 of the 5000. Mathematically this looks as follow

$$CV = \frac{1000}{5000} = 0.20$$

Data Range = \{5000 + (5000 \times .20)\}, \{(5000 + (5000 \times -.20)\} = or a range of 6000 and 4000 where two-thirds of the data falls between 6000 and 4000.

**Federal Range Ratio** is the result of dividing the Restricted Range by the 5th percentile. (Ko, 2006). According to Kelly (2015), the Federal Range Ratio eliminates the impact of outliers on the results and it has a value between 0 and $\infty$ (Kelly, 2015).

$$\text{Federal Range Ratio} = \frac{\text{value at 95th} - \text{value at 5th}}{\text{value at 5th}}$$

According to Driscoll and Salmon (2008), smaller value of Federal Range Ratio indicates that horizontal equity is positive. Ko, 2006 indicated that higher value of FRR indicates higher value of inequality or vertical equity.
**Gini Index.** According to Gini coefficient (2013), the Gini Index is a measure of variance, created by Corrado Gini (1884-1965). The Gini Index ranges between 0 and 1. In measuring income disparity, 0 indicates that everyone has the same income and 1 indicates that one person has all the income (Gin Coefficient, 2007).

In measuring inequity, Driscoll and Salmon and Ko, 2006 indicated that the greater the value of the Gini Coefficient the greater the value of inequity. The Gini is defined as

\[ \frac{A}{(A+B)} = 1 - 2B \text{ formalized axes} \]

**The McLoone Index** is a measure of equity and is calculated by aggregating the ratio of each value at or below the median to the number of all values multiplied by the median of all values. The McLoone Index ranges between 0 and 1.

The McLoone Index = \( \sum \text{(value at or below median)} \div (\text{number of values at or below median} \times \text{Median of all values}) \)

According to Ko (2006), the McLoone Index increases as equity increases. In a data set that has a McLoone Index of 1, there is perfect equity, and everyone achieved the median level of financing. According to Kelly (2015), the McLoone Index limitation is that it only focuses on data at or below the median, and therefore it should be used with other measures such as the Coefficient of Variation.

**Correlation Coefficient (CC)** determines if there is a relationship between two variables and the strength of this relationship. According to Kelly (2015), the value of CC ranges between -1 and +1 where -1 represents a perfect negative or
inverse relationship, and +1 represents a perfect positive relationship, while 0 indicates no relationship. The CC will be utilized to measure the relationship between funding per student and change in ADM in school districts. A positive relationship between change in ADM and funding indicates an increase in funding when the number of students increases in a school district. In terms of vertical equity in distributing funding, the increase in students should be associated with an increase in funding.

**Research Procedures**

In conducting this study, the Oregon Department of Education (ODE) provided specific data sets for the following years: 1995, 2000, 2005, 2010, and 2015. The data sets included (a) revenues from the general fund, specifically the total Equalization Formula revenue which includes the general-purpose grant and transportation revenues, (b) and total enrollment defined as the Average Daily Membership or ADM. Focusing on revenues made more sense, considering the difficulty in validating expenditures in districts; this made funds comparable from one district to another. Oregon did not develop a uniform budget and accounting system until 1999 based on HB3636 which passed in the Legislature in 1997 (Oregon Legislature, 1997). Even with developing a uniform budget and accounting system, school districts continued to code expenditures differently, which caused concerns regarding the accuracy and the validity of coding. These concerns were highlighted in passing House Bill 3499 in 2015 which required the Oregon Department of Education to convene an advisory
committee to help develop rules to guide districts in coding English Language Learners related expenditures and reporting to the state (Oregon Legislature, 2015a).

Once the Oregon Department of Education provided the requested data, per student funding was calculated by dividing the general-purpose grant by ADM for each year and each school district. School districts’ data were consolidated and combined to provide a set of data that is comparable in all years. Some school districts merged over the years and appeared as one entity in 2015 but appeared as multiple entities in prior years. Others appeared as one entity in previous years then it split and appeared as multiple entities in 2015. This study followed similar process used by Ko (2006) and Driscoll and Salmon (2008) by establishing 2015 as the baseline year. Then school districts’ student counts and revenues were reconfigured and consolidated for each year examined between 1995 to 2015 to mirror and match the configuration of school districts found in 2015. Combining or separating districts in prior years to match the 2015 school year structure allowed the same structure, naming, and number of school districts for all years examined, which allowed for more comparable data to complete the analysis effectively.

After compiling the data in a format that were ready to be analyzed; descriptive analyses were completed to calculate the mean and standard deviation to provide a statistical summary of the data. And measures of equity were calculated.
Data Analysis

Microsoft Excel with the EZAnalyze add-in was used to analyze the data for each year in the study. The Coefficient of Variation, the Federal Range Ratio, the Gini Coefficient, the McLoone Index, and the Correlation Coefficient, were used to measure equity. These measures were shown to be the most widely used measures of equity by researchers (Baird, 2008; Driscoll & Salmon, 2008; Garms, 1979; Kelly 2015; Ko, 2006, Kelly). According to Kelly (2015, a higher value of the McLoone Index meant a higher horizontal equity, and a lower value indicated a higher inequality. Inequality indicates positive vertical equity. While a higher value of the CV, the FRR, and the Gini Coefficient indicated a higher value of inequality and a lower value of horizontal equity (Driscoll & Salmon, 2008; Kelly, 2015; Ko, 2006). A McLoone Index of 0.95 and CV value of 0.10 are considered an acceptable level for horizontal equity (Kelly, 2015). The relationship between variables was determined by calculating the coefficient correlation. According to Muijs (2011), a correlation that is <+/-.1 indicates a weak relationship, a correlation that is <+/-.3 indicates a modest relationship, a correlation that is <+/-.5 indicates a moderate relationship, a correlation that is <+/-.8 indicates a strong, and a relationship that is >+/-.8 indicates a very strong relationship. To document my findings, I will use tables and figures to show trends and outcome of the analysis.
Summary

This study focused on measuring equity of funding among school districts in the State of Oregon to help both advocates and policy makers understand the impact of policies, such as Measure 5, on reforming district finance. To analyze the impact of Measure 5 and state policies on school funding, the Coefficient of Variation, the Federal Range Ratio, the Gini Coefficient, the McLoone Index, and the Correlation Coefficient were calculated to measure equity. To illustrate the findings of this study, Tables and Figures presented the outcome of the analysis.
Chapter 4: Data Analysis

This study attempted to determine whether Oregon funding is equitable as measured by selected widely used equity measures. It captured the impact on educational funding between 1995 and 2015 after the implementation of Measure 5 in Oregon.

To conduct this quantitative study, school districts’ financial data were obtained from the Oregon Department of Education. The data included: school districts by name, districts’ county, Average Daily Membership, total Equalization Funding Formula revenues and per student revenues for each district in 1995, 2000, 2005, 2010, and 2015. Once data were obtained, they were compiled and modified to determine the impact on funding using descriptive statistical analysis and illustrated the impact on funding using figures and tables. To measure equity, the following tests were completed; (a) the Coefficient of Variation, (b) the Federal Range Ratio, (c) the Gini Coefficient, (d) the McLoone Index and (e) the Correlation Coefficient. The result of those calculations and analyses were summarized below.

Impact on Equity of Funding

Oregon school districts witnessed consolidation that started in the 1960s and continued in the 1990s and 2000s. Oregon Revised Statutes (Or. Rev. Stat. § 330.090) allows school districts to merge with another adjoining district because of geography that could make transportation more problematic or because of a very small size of populations. Larger districts can be more efficient because of their size and economy
of scale (Verstegen, 1990). Larger districts might be able to absorb more students without adding resources or needing to build additional facilities. According to Oregon School Board Association (2018), School districts’ consolidation between 1960 and 1998 had reduced the number of districts from 594 to 198. The Oregon Board Association indicated that the number of districts were at 356 in 1970, 311 in 1980, and 301 in 1990. As shown in Table 2, the number of school districts were at 250 in 1995, and the number decreased to 197 by 2015 or about 21%.

In reviewing the data illustrated in Table 2, between 1995 and 2015 school districts in Oregon witnessed a period of many consolidations. So, it was imperative to make some adjustments to compare the data for the years analyzed. The process to adjust school districts’ data was modeled after two studies (Driscoll & Salmon, 2008; Ko, 2006). This study used 2015 school districts’ configuration as the baseline year. After establishing the baseline year, school districts’ figures were adjusted to mirror the baseline year to reflect consolidation between 1995 and 2015. For example, between 1995 and 2000, Sisters 6 District and Brothers 15 District merged into one district named Sisters 6. In Table 2, the modified number of school districts in 1995 and in 2000 accounts for Sisters 6 School District in both years as one district, and the number of students for both districts were merged into one school district for both years. Besides school districts’ mergers, in certain instances, some school districts split into two districts. When school districts split, their count for prior years was adjusted upward to reflect an increase in school districts in future years. For example,
using data obtained from the Oregon Department of Education, between 1995 and 2000, Clatskanie 5 J district split into Knappa 4 District and Clatskanie 6 J CD District, accordingly the two districts Clatskanie 6 J and Knappa 4 were included in the 1995 districts’ count rather than the one district, Clatskanie 5 J. The outcome of this adjustment increased the 1995 count by one district. After accounting for mergers and splits, the net number of school districts was 197 school districts for the years examined between 1995 and 2015 and increased the 1995 student counts by about 184 ADM, accordingly student counts for 1995 was revised from 586,534 ADM to 586,718 ADM. In this section, the data of school districts in Oregon from 1995 to 2015 were analyzed in five-year intervals to determine the relationship between the Average Daily Membership (ADM) and the amount per ADM.

Table 2

*Summary of Number of School Districts and Counties in Oregon From 1995 to 2015.*

<table>
<thead>
<tr>
<th>School year</th>
<th>Number of districts</th>
<th>Number of counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>250</td>
<td>36</td>
</tr>
<tr>
<td>2000</td>
<td>198</td>
<td>36</td>
</tr>
<tr>
<td>2005</td>
<td>198</td>
<td>36</td>
</tr>
<tr>
<td>2010</td>
<td>197</td>
<td>36</td>
</tr>
<tr>
<td>2015</td>
<td>197</td>
<td>36</td>
</tr>
</tbody>
</table>
Table 3 below reflected the modified number of school districts discussed in Table 2 for the years examined from 1995 to 2015. As illustrated in Table 3, School districts’ consolidation reduced the number of districts, and student counts in Oregon grew by about 14% or about 100,000 students as measured by the Average Daily Membership (ADM). The ADM is used interchangeably to account for student counts and carries a weight of one for every student enrolled for all instructional days offered by a school. ADM drives the amount of funding that the State allocates to school districts (Oregon Legislature, 2014). Table 3 illustrated the modified number of school districts along with the number of counties and the total ADM for the years examined.

Table 3

Summary of the Modified Number of School Districts and Average Daily Membership (ADM) From 1995 to 2015

<table>
<thead>
<tr>
<th>School year</th>
<th>Number of districts</th>
<th>Number of counties</th>
<th>Total ADM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>197</td>
<td>36</td>
<td>586,718</td>
</tr>
<tr>
<td>2000</td>
<td>197</td>
<td>36</td>
<td>630,603</td>
</tr>
<tr>
<td>2005</td>
<td>197</td>
<td>36</td>
<td>654,121</td>
</tr>
<tr>
<td>2010</td>
<td>197</td>
<td>36</td>
<td>661,194</td>
</tr>
<tr>
<td>2015</td>
<td>197</td>
<td>36</td>
<td>670,823</td>
</tr>
</tbody>
</table>

Student counts were not the only thing increasing in Oregon school districts; funding was also increasing. As illustrated in Table 4, the average funding per ADM grew by
about 68\% or $3,000 per student for the 20-year period examined. The standard deviation declined from $535 in 1995 to $356 in 2015. In other words, the amount of funding per student varied in greater number from the mean in 1995 than it did in 2015.

Table 4

*Summary of Average Student Funding and the Standard Deviation per Student*

*Funding for Oregon School Districts From 1995 to 2015*

<table>
<thead>
<tr>
<th>School year</th>
<th>Average</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>$4,392</td>
<td>$535</td>
</tr>
<tr>
<td>2000</td>
<td>$4,865</td>
<td>$172</td>
</tr>
<tr>
<td>2005</td>
<td>$5,149</td>
<td>$257</td>
</tr>
<tr>
<td>2010</td>
<td>$6,233</td>
<td>$347</td>
</tr>
<tr>
<td>2015</td>
<td>$7,391</td>
<td>$356</td>
</tr>
</tbody>
</table>

To illustrate the variance from 1995 to 2015, Figure 1 showed a scatter chart for the 1995 amount per ADM for all school districts in Oregon. The chart indicated some variation evident by scatters and it shows that the funding per ADM was not as closely clustered around the mean compared to the 2015 chart in Figure 2.
Figure 1. Scatter gram chart showing the Amount per Average Daily Membership (ADM) for Oregon school districts in 1995.

Figure 2 showed a scatter chart for 2015 funding per ADM for all Oregon school districts. As compared to 1995, which is shown in Figure 1, the chart in Figure 2 showed funding per ADM is closely clustered around the mean and is less scattered as compared to the chart in Figure 1 for 1995 data.
Figure 2. Scatter gram chart showing the amount per Average Daily Membership (ADM) for Oregon school districts in 2015.

Both students’ counts and the average funding per student trended upward, Figure 3 and 4 below illustrated this trend and showed that both were growing positively between 1995 and 2015.

Figure 3 showed that the student count grew by 14% between 1995 and 2015. And Figure 4 showed that the funding per student grew by 68% between 1995 and 2015.
Figure 3. Total Average Daily Membership (ADM) for Oregon school districts from 1995 to 2015.

Figure 4. Average amount of funding per Average Daily Membership (ADM) for Oregon school districts from 1995 to 2015 in current dollars.
While the total amount of funding increased from 1995 to 2015, it decreased when adjusted for inflation. Figure 5 illustrated the decline in funding between 1995 and 2015 when adjusted for inflation. In comparing the amount of money per student when adjusted for inflation, the amount declined by 11% from $3,751 in 1995 to $3,351 in 2015 (Oregon Legislature, 2015b).

Figure 5. The funding amount per Average Daily Membership (ADM) from 1995 to 2015 adjusted for inflation.

In reviewing the revenues from 1991 to 2015, Revenues as adjusted for inflation declined even more. Figure 6 illustrated the decline in funding between 1991 and 2015 when adjusted for inflation. In comparing the amount of money per student when adjusted for inflation, the amount declined by 20% from $4,172 in 1991 to $3,351 in 2015 (Oregon Legislature, 2015b).
The focus of this study was to determine whether reforms in Oregon achieved equity in funding school districts. Equity in this context meant funding schools adequately and fairly. There are two distinct definitions for equity: horizontal equity defined as allocating an equal amount of funding per student regardless of school districts’ or students’ needs. And vertical equity defined as allocating an unequal amount of funding per student among school districts deemed adequate based on the school districts’ and students’ needs.

The Coefficient of Variation (CV) is one of five measures used in this study to determine funding’s equity. The Federal Range Ratio (FRR), the Gini Coefficient,
McLoone Index and the Coefficient Correlation are the other tests used to measure equity, which will be discussed in this chapter. Table 5 summarized the calculation of CV from 1995 to 2015. The CV in 1995 was greater than the CV for 2000, 2005, 2010, and 2015. A larger value of CV indicates a higher vertical equity, while a smaller CV value indicates a higher horizontal equity. The outcome of the CV analysis indicated that the funding for school districts in Oregon between 1995 and 2015 improved horizontal equity while vertical equity declined.

Table 5

Summary of Coefficient of Variation (CV) for Funding for Oregon School Districts From 1995 to 2015

<table>
<thead>
<tr>
<th>School year</th>
<th>CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>0.12</td>
</tr>
<tr>
<td>2000</td>
<td>0.03</td>
</tr>
<tr>
<td>2005</td>
<td>0.05</td>
</tr>
<tr>
<td>2010</td>
<td>0.06</td>
</tr>
<tr>
<td>2015</td>
<td>0.05</td>
</tr>
</tbody>
</table>

**Federal Range Ratio (FRR)**

The Federal Range Ratio is the second measure used in this study to determine funding’ equity. A bigger value of FRR indicates inequity while smaller value closer to zero indicates horizontal equity. Table 6 summarized the calculation of FRR from
1995 to 2015. The FRR in 1995 was greater than the FRR for 2000, 2005, 2010, and 2015. A bigger value of FRR indicates a higher vertical equity, while a smaller FRR value indicates a higher horizontal equity. The outcome of the FRR analysis indicated that the funding for school districts in Oregon between 1995 and 2015 improved horizontal equity while vertical equity declined. FRR finding was consistent with the CV analysis in Table 5.

Table 6

*Summary of Federal Range Ratio (FRR) for Funding for Oregon School Districts*

*From 1995 to 2015*

<table>
<thead>
<tr>
<th>School year</th>
<th>FRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>0.29</td>
</tr>
<tr>
<td>2000</td>
<td>0.11</td>
</tr>
<tr>
<td>2005</td>
<td>0.13</td>
</tr>
<tr>
<td>2010</td>
<td>0.16</td>
</tr>
<tr>
<td>2015</td>
<td>0.14</td>
</tr>
</tbody>
</table>

**Gini Coefficient**

Gini Coefficient is the third test used to measure equity in this study. Like CV and FRR, a higher value of Gini indicates inequity while a smaller value closer to zero indicates a higher horizontal equity. Table 7 summarized the calculation of Gini from 1995 to 2015. The Gini in 1995 was greater than the Gini for 2000, 2005, 2010, and
2015. A bigger value of Gini indicates a greater vertical equity, while a smaller Gini value indicates a larger horizontal equity. The outcome of the Gini analysis indicated that the funding for school districts in Oregon between 1995 and 2015 showed strong evidence of improvement in horizontal equity and vertical equity declined. The finding in Table 7 was consistent with the analysis of CV and FRR in Tables 5 and 6.

Table 7

<table>
<thead>
<tr>
<th>School year</th>
<th>Gini</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>0.02</td>
</tr>
<tr>
<td>2000</td>
<td>0.01</td>
</tr>
<tr>
<td>2005</td>
<td>0.01</td>
</tr>
<tr>
<td>2010</td>
<td>0.01</td>
</tr>
<tr>
<td>2015</td>
<td>0.01</td>
</tr>
</tbody>
</table>

**McLoone Index as a Measure of Equity**

The McLoone Index is the fourth test that this study used to measure equity. While the McLoone Index is a known measure to determine horizontal equity, it is used here to measure both vertical and horizontal equity, because vertical equity is the opposite of horizontal equity. A bigger McLoone Index value that is close to 1 indicates a stronger horizontal equity, while a smaller value indicates a weaker vertical
equity. Table 8 summarizes the McLoone Index results from 1995 to 2015. The value seemed very consistent for all years from scoring about .98 which is a strong indication that horizontal equity existed while vertical equity is very weak.

Table 8

Summary of the McLoone Index for Oregon School Districts From 1995 to 2015

<table>
<thead>
<tr>
<th>School year</th>
<th>McLoone index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>0.98</td>
</tr>
<tr>
<td>2000</td>
<td>0.99</td>
</tr>
<tr>
<td>2005</td>
<td>0.98</td>
</tr>
<tr>
<td>2010</td>
<td>0.98</td>
</tr>
<tr>
<td>2015</td>
<td>0.98</td>
</tr>
</tbody>
</table>

Coefficient of Correlation as a Measure of Correlation

Coefficient of correlation (CC) is used to determine the relationship between the number of students and the funding per student. In the context of this study, CC is used to indicate whether there is a relationship between the number of students and the funding per student for the years examined from 1995 to 2015. While the funding per student in Oregon and the number of students increased for the years examined, the relationship between the number of students and the funding per student in each year from 1995 to 2015 was statistically significant weak inverse relationship, ranging from -.10 to -.19; \((p < .01)\). In other words, in every year examined, the amount of money per students decreased while the number of students increased. This could be
explained partially by the fact that in Oregon smaller school districts are funded at a higher amount because they cannot generate a lot of revenues from the number of students enrolled. This also could be explained by the fact that the funding formula provides additional funding for different student needs. Assuming the change is due to a change in students’ needs, the change could be interpreted as evidence showing small vertical equity. Table 9 below summarized CC values from 1995 to 2015.

Table 9

Summary of Coefficient of Correlation (CC) for the ADM and the Amount per ADM for all Oregon School Districts From 1995 to 2015.

<table>
<thead>
<tr>
<th>School year</th>
<th>CC</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>-0.10</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>2000</td>
<td>-0.12</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>2005</td>
<td>-0.16</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>2010</td>
<td>-0.19</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>2015</td>
<td>-0.17</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>

Figure 7 illustrates graphically the relationship between ADM and Amount of funding per ADM from 1995 to 2015 for all school districts in Oregon. As illustrated below, the relationship is a statistically significant weak inverse relationship ranging from -.10 to -.19; (p < .01).
Figure 7. The relationship between the amount per Average Daily Membership and the Average Daily Membership count for Oregon school districts for fiscal years 1995, 2000, 2005, 2010, and 2015.

To neutralize the small school district effect, the correlation between the amount per ADM was calculated for districts with populations exceeding 1,000 students to determine whether correlations differed in relation to district size. As shown in Table 10, this analysis revealed there was not a statistically significant relationship ($p > .05$) for the years examined in the analysis, indicating there is no confidence in the result being due to chance.
Table 10

Summary of Coefficient of Correlation (CC) for the ADM and the Amount per ADM for Oregon School Districts with Student Populations Over 1000 ADM from 1995 to 2015.

<table>
<thead>
<tr>
<th>School year</th>
<th>Number of school districts</th>
<th>CC</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>107</td>
<td>0.12</td>
<td>0.21</td>
</tr>
<tr>
<td>2000</td>
<td>107</td>
<td>-0.07</td>
<td>0.34</td>
</tr>
<tr>
<td>2005</td>
<td>100</td>
<td>-0.26</td>
<td>0.22</td>
</tr>
<tr>
<td>2010</td>
<td>98</td>
<td>-0.13</td>
<td>0.80</td>
</tr>
<tr>
<td>2015</td>
<td>99</td>
<td>-0.09</td>
<td>0.34</td>
</tr>
</tbody>
</table>

In addition to neutralizing the small school districts’ effect, the correlation for the larger school districts in Oregon was examined, the correlations for school districts with more than 8,500 students were examined and are summarized in Table 11. The correlation in 1995 showed a moderate positive relationship, while in other years, the relationship was weak to modest and negative with all values are statistically significant at ($p < .01$).
Table 11

*Summary of Coefficient of Correlation (CC) for the ADM and the Amount per ADM for Oregon School Districts with Student Populations Over 8500 ADM From 1995 to 2015.*

<table>
<thead>
<tr>
<th>School year</th>
<th>Number of school districts</th>
<th>CC</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>12</td>
<td>0.58</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>2000</td>
<td>14</td>
<td>-0.04</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>2005</td>
<td>16</td>
<td>-0.34</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>2010</td>
<td>16</td>
<td>-0.20</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>2015</td>
<td>15</td>
<td>-0.27</td>
<td>&lt; 0.01</td>
</tr>
</tbody>
</table>

**Summary**

This chapter reported the analysis of the data of Oregon school districts from 1995 to 2015 in five-year intervals. The study examined the relationship between the Average Daily Membership (ADM) and the amount per ADM to measure equity in both forms, horizontal and vertical. Before analyzing the data, specific adjustments were applied to account for mergers and splits in school district configurations.

In analyzing the data, descriptive and trend analysis were conducted, and outcomes were summarized in tables and figures. Based on these analyses, the study showed evidence of growth in both student counts and funding. While data showed growth in funding and student counts, there was a weak, inverse relationship between
the ADM and the amount of funding per ADM. An inverse relationship indicates that when one goes up the other goes down. The weak, inverse relationship could be explained by the additional funding for small schools which Oregon Legislators approved to differentiate funding for small schools based on size. In addition to the weak inverse relationship between funding and student counts, strong horizontal equity was noticeable in the years examined and improved between 1995 and 2015. The results of the equity analysis as measured by the Coefficient of Variation, the Federal Range Ratio, the Gini Coefficient and the McLoone Index demonstrated strong outcome for horizontal equity, and it showed that vertical equity worsened and is visibly weak.
Chapter 5: Discussion

In an environment where legislators, taxpayers, and educational advocates questioned the adequacy and equity of school finance and local property taxes, Measure 5, a voters’ initiative in Oregon, passed. Much like Proposition 13 in California, Measure 5 resulted in significant changes in the funding of school districts in Oregon. Measure 5 limited the amount that school districts can levy from local property taxes to $5 per $1,000 assessed value by 1995-1996 (OR. Const. art. XI, § 11). Because of Measure 5, the Oregon Legislature introduced the Equalization Formula which was aimed at achieving equity in funding among school districts.

The purpose of this quantitative study of a 20-year time period of school funding is to determine the impact and effectiveness of passing Measure 5 and school finance reforms on the equity of funding. This work built on and was guided by prior research in the field of school finance (Driscoll & Salmon, 2008; Ko, 2006).

In Chapter One, the focus was on equity as nested in a historical context marred with concerns and litigations from advocates, legislators, and educational leaders. Their concerns were focused on creating a system that allowed school districts to receive an equitable distribution of resources while preserving a fair property tax system. These concerns resulted in policy reforms that altered how school districts were funded.

Measure 5 supporters might have been inspired by Californians who passed Proposition 13, which was put on the ballot to cap property taxes for local taxpayers in
1978 (Canfield, 2013). Proposition 13 shifted funding from local taxpayers to the State. Canfield suggested that funding reforms in California were in response to the successful efforts in court. For example, in Serrano v. Priest (1971), a parent alleged that low wealth district’s students did not receive equal educational opportunities, which violated the Constitution of the State of California. The California Supreme court ruled in favor of the plaintiff. In a similar case, Olsen sued the state of Oregon for violating the State Constitution by allowing disparity in funding among school districts. Contrary to the ruling in California, the Oregon Supreme court disagreed and rejected the plaintiff’s argument. The push for equity and adequacy in California and Oregon mirrored a national sentiment evident by the number of lawsuits launched against states alleging a lack of equity in funding education.

Specifically, this study focused on answering two questions:

1. How has the equity of funding changed over time from 1995 to 2015, following the implementation of Measure 5 in 1991?

2. To what extent is the funding in Oregon equitable, as measured by a variety of equity methods?

Chapter Two’s literature review addressed equity from different aspects. First, it reviewed the state’s role and the impact of litigation on reforming school finance. According to Baker and Corcoran (2012), a school finance system is defined as a combination of rules, regulations, policies, state aid, and local resources to finance schools to meet educational goals in an equitable and adequate manner for all students.
in the state. In other words, a school finance system is a structure that governs schools’ funding to meet its intended objectives for all students equitably. In reviewing the states’ role in educational funding, it showed that states had an active role in regulating educational funding as early as the foundation of the United States. According to Westberg (2013), old systems were largely funded by churches and philanthropists. Scholars began designing formulas to account for differences in wealth of local communities as early as the 1920s (Baker & Corcoran, 2012). The work of Cubberley and others in the beginning of the 20th century influenced the evolution of enacting equalization funding formulas across the United States (Guthrie, 2008). Cubberley (1905) appeared to be ahead of his time when he argued for equity in educational funding. He argued that it is the state’s responsibility to create appropriate educational requirements for local communities. When states failed to provide school finance systems to fund school districts equitably, advocates led the charge in court. According to Glenn (2009), in the last 40 years, advocates took 45 states to court alleging lack of equity and adequacy. Litigation over equity and adequacy in the United States came about in three waves (Sweetland, 2015). In the first wave, advocates relied on the Fourteenth Amendment to argue that education is a basic right, and accordingly, all students should have equal rights to education. In the second wave, advocates pressed the states to fund education an equal amount per student regardless of the school districts’ neighborhood wealth. In the third wave, advocates focused on adequacy and pushed states to fund schools sufficiently. It is
clear from those efforts that educational advocates and leaders alike were pushing for equitable distribution of resources to allow students an equal educational opportunity.

Second, concepts of equity and adequacy were reviewed. Equity can be either horizontal or vertical. According to Ramirez et al. (2013) equity means fairness, and they credited Berne and Stiefel (1984) for being the first to introduce the equity concepts in school finance; “horizontal equity” and “vertical equity.” For Berne and Stiefel, horizontal equity existed when similar districts were funded similarly, and vertical equity, existed when different districts were funded differently. However, vertical and horizontal equity concepts appeared to be rooted in the public finance theory. In his work, *Approaches to A Fiscal Theory of Political Federalism*, Musgrave (1961) discussed these concepts explicitly. Baker, Sciarra, and Farrie (2012) associated vertical equity with being adequate, defined that as “predictable, stable, equitable” (p. 1) and fairly distributed to schools to serve all students. They indicated that an adequate finance system is considered foundational to providing quality educational outcomes and is fair when it accounts for students’ additional needs. While Escue (2012) agreed that vertical equity promotes adequacy, she suggested that vertical equity is more complicated than horizontal equity, because being adequate is subjective and varies in value from one person to another. According to King, Swanson, and Sweetland (2005), adequacy is sufficiency. Levacic (2008) went further to say that it is adequate if it is sufficient to help all students achieve their educational goals. In other words, she was discussing equal educational opportunities. The concept
of *equality in educational opportunity* was first discussed by Garms and Smith (1970). Garms and Smith defined the term equality as offering an educational system that gives students an equal opportunity to succeed regardless of their needs. The authors explained that equality can be achieved by including other variables, such as poverty level and special education in the funding formula. In effect, Garms and Smith advocated for the vertical equity model. Vertical equity holds that school districts should receive an unequal amount per student to cover costs associated with the variation in students’ needs. Others approached adequacy from a different lens, such as the econometric approach, the successful school approach, and the ethical lens (King, Swanson, & Sweetland, 2005). The concept of equity is enshrined in the United States history, and it was associated with segregation in Brown v. Board of Education (1954). Segregation is a term used to describe separation of Black from White students. This was the underlying argument in Brown v. Board of Education (1954), where the plaintiff argued that Black students should be able to attend the same facilities as White students and that separate but equal is not constitutional. The United States Supreme court agreed with the plaintiff and ruled that separate but equal violated the equal protection clause in the Fourteenth Amendment of the U.S. Constitution. Third, the literature related to funding formulas was reviewed. According to Verstegen and Jordan (2009), the foundation program is the most widely used tool in the United States today. Using the foundation program guarantees that each school district receives a minimum amount of money per student regardless of its
capacity to generate local property taxes. In a foundation program, states take into consideration the amount of money generated locally and make up the difference for the amount needed to fund school districts per the formula.

Before the foundation programs emerged, states used a "Flat grant" method where money was allocated using an educational resource as the basis for funding. An educational resource can be the number of students, the number of teachers, or any other resource that is deemed appropriate by the institution allocating the money. Under the flat grant’s funding system, school districts can access money from local sources such as local property taxes and contributions from their local communities. Augenblick, Myers, and Anderson (1997) implied that the reemergence of funding formulas was due to the process of shifting education’s funding from local control to states’ control, and legislators recognized the need for differentiation in funding among students. While many of those school finance systems began surfacing since the beginning of the 20th century, a variety of these systems still exist today across the United States. In surveying the 50 states, Verstegen and Jordan (2009) found that there were four types of finance formulas: (a) Foundation Programs; (b) District Power Equalization System; (c) Full-State Funding Model; and (d) Flat Grants. Not only there were different formulas, but the application and funding per student varied greatly from one state to another. For example, in most states, Foundation Programs are based on a revenue limit where an amount is levied from local taxes, and the remaining amount is funded by the state. Those formulas are built on an equalization
concept, to fund school districts an equal amount per student, regardless of the wealth of the respective community. In Oregon, legislators attempted to address equity in school finance by introducing the Oregon Equalization Formula. The Oregon Equalization Formula was adopted in 1991 to fund school districts an equal amount per student, acknowledging the need for additional support by designating added weights to fund additional needs.

In Chapter Three, the methodology was described, including the scope of the study, the instrumentation, and the data analysis. After receiving Institutional Review Board approval for this study, a public information request was submitted to the Oregon Department of Education through an email by August 1, 2017. The scope of the study included all school districts in the State of Oregon for the period from 1995 to 2015, examining five-year intervals of data. The focus of the study was on revenues rather than expenditures, because of the difficulty in validating the coding of expenditures among school districts to produce comparable data. School districts’ interpretations of the coding process might differ from one district to another.

Consistent with other research (Driscoll & Salmon, 2008; Ko, 2006), several methods to measure both vertical and horizontal equities were used; (a) the Coefficient of Variation, (b) the Federal Range Ratio, (c) the Gini Coefficient, (d) the McLoone Index, and (e) the Correlation Coefficient. Additionally, basic descriptive statistics such as means, and standard deviations, were calculated to summarize the data. To determine how data changed over time, the study used trend analysis.
In Chapter four, the data were analyzed, and the following is a summary of the findings.

**Impact on Equity of Funding**

Oregon school districts witnessed some consolidation that started in the 1960s and continued into the 1990s and 2000s. Between 1995 and 2015, data indicated that the number of school districts declined by 21%, the number of students grew by about 14%, and the average funding per student increased by 68%. While per-student funding increased since 1995, it declined when adjusted for inflation, the amount of funding declined by 11% from $3,751 in 1995 to $3,351 in 2015. When reviewed the data back to 1991, the decline increased to about 20% from $4,172 in 1991 to $3,351 in 2015. Besides the decline in funding, the standard deviation for average funding decreased from $535 in 1995 to $356 in 2015, which indicated that the variations between school districts’ average funding decreased. In other words, the amount of funding per student in 1995 varied in greater number from the average amount funded than it did in 2015, which indicates that horizontal equity improved, and vertical equity worsened.

**Coefficient of Variation (CV) as a Measure of Equity**

The Coefficient of Variation (CV) is one of the methods used in this study to measure funding’s equity in Oregon. The calculation of CV for the years examined in this study showed that the value of CV ranged between .03 and .12, and it was much higher in 1995 than it was in 2000, 2005, 2010, and 2015. A larger value of CV
indicates a higher vertical equity, while a smaller value indicates a higher horizontal equity. The outcome of the CV analysis indicated that the funding in school districts in Oregon between 1995 and 2015 improved horizontal equity. On the other hand, it appeared that vertical equity declined between 1995 and 2015.

**Federal Range Ratio (FRR)**

The Federal Range Ratio was the second measure used in this study to determine funding’s equity. A larger value of FRR indicates a higher vertical equity or disproportional funding to account for unique needs like special education and English Language Learners, while a smaller value closer to zero indicates a higher horizontal equity or similar funding per student regardless of their unique needs. In this study, the FRR results were between .11 and .29. The calculation of FRR from 1995 to 2015 registered a larger value in 1995 than it did in 2015, which indicated that vertical equity was stronger in 1995 than it was in 2015. On the other hand, horizontal equity was stronger in 2015 than it was in 1995. The FRR finding was consistent with the CV analysis in Table 5.

**Gini Coefficient**

Gini Coefficient was the third test used to measure equity in this study. Like CV and FRR, a higher value of Gini indicated stronger vertical equity while a smaller value closer to zero indicated stronger horizontal equity. In this study, the Gini results were between .01 and .02. The calculation of Gini from 1995 to 2015 appeared consistent with both FRR and CV. The Gini in 1995 was greater than the Gini for
The outcome of the Gini analysis indicated that the funding for school districts in Oregon between 1995 and 2015 improved equity horizontally but not vertically.

**McLoone Index as a Measure of Equity**

The McLoone Index is the fourth test that this study used to measure equity. While the McLoone Index is a known measure to determine horizontal equity, it was used in this study to measure both the vertical and the horizontal equity, as the vertical equity is the opposite of horizontal equity. A bigger value that is close to 1 provides evidence that horizontal equity exists, while a smaller value close to zero indicates that vertical equity exists. In this study, the results of the McLoone Index were between .98 and .99. The value of the McLoone Index appeared very consistent for all years examined from 1995 to 2015, scoring about .98, which is considered equitable horizontally but not vertically. The McLoone index results could be interpreted as evidence of strong horizontal equity and very weak vertical equity.

**Coefficient of Correlation as a Measure of Correlation**

A Coefficient of Correlation (CC) is used to determine the relationship between the number of students and the funding per student. While funding per student in Oregon and the number of students increased from 1995 to 2015, the relationship between the number of students and the amount of funding per student in each year examined was a very weak inverse relationship. In other words, in every year examined, the amount of money per student decreased when the number of
students increased. This could be explained by the additional funding allocated to small schools recognizing they cannot generate sufficient revenues from the small number of students to cover the cost of operating schools effectively.

To neutralize the small school district effect, the correlation between the amount per ADM was calculated for districts with populations exceeding 1,000 students to determine whether correlations differed in relation to district size. This analysis revealed there was not a statistically significant relationship ($p > .05$) for the years examined in the analysis, indicating there is no confidence in the result being due to chance.

In addition to neutralizing the small school districts’ effect, the Coefficient of Correlation for the larger school districts in Oregon was examined. The correlation was calculated for districts with populations greater than 8,500 students and were summarized in Table 9. The correlation in 1995 showed a moderate positive relationship, while in other years, the relationship was weak to modest and negative with all values statistically significant at ($p < .01$). The weak and negative relationship supports the notion that there is small vertical equity due to the differentiation caused by the additional weights such as English Language Learners and students of poverty.

**Discussion**

This study provided an opportunity to highlight school finance reforms in the United States. In the mid-1800s, the states’ role was merely to regulate and allow school districts to collect resources to fund the operating of schools. As educational
reforms matured, and social equities gained momentum, school finance equity and adequacy theories in education became more prominent topics. The purpose of this quantitative study of a 20-year time period of school funding is to determine the impact and effectiveness of passing Measure 5 and school finance reforms on the equity of funding. While this study focused on Oregon school districts, the study could also be replicated in other states to examine the impact of school finance reforms on equity, both horizontally and vertically. In this section, the discussion will be focused on the findings compared with the literature reviewed to answer the research questions.

**Equity of Funding Following the Implementation of Measure 5**

The findings in this study showed, that reforms in Oregon followed similar paths, and yielded similar results found in national studies. The Oregon Legislature established an Equalization Formula to reform school finance, it increased the state’s portion of school districts’ funding, and it reduced the local control over funding. However, when adjusted for inflation, per student funding declined.

First, Oregon adopted a foundation formula, called the Equalization Formula, in 1991 to reform school finance, in which legislators incorporated a minimum amount, and additional weights, to establish equitable funding for students. Research indicated that 40 states used a foundation formula-based scheme to establish school finance systems to fund school districts in the United States, while 34 states included additional funding for low income students (Verstegen and Jordan, 2009). By adopting
a foundation formula, Oregon followed the steps of many states that encountered similar political and legal challenges to achieve equity; to name a few, California, Missouri, Virginia, and Florida.

Second, the state of Oregon’s portion of the overall funding to schools increased from 30% pre-Measure 5 to 67% post-Measure 5 (Oregon Legislature, 2017c). As illustrated in Table 4, and consistent with national trends, highlighted by Augenblick, Myers, and Anderson (1997), funding per student for Oregon school districts increased. The average funding per student increased by about 68% from $4,392 in 1995 to $7,391 in 2015. While on the surface, it appeared that Oregon increased school districts’ funding to keep up with the 14% increase in student population, however, the amount of money per student when adjusted for inflation declined by about 11% from $3,751 in 1995 to $3,351 in 2015. Additionally, review of the data from 1991 to 2015 revealed the adjusted-for-inflation amount per student declined by about 20% from $4,172 in 1991 to $3,351 in 2015 (Oregon Legislature, 2015b). The Quality Education Commission reported similar outcomes. Their report showed that revenues from all sources, including federal and state grants when indexed for cost increases, declined by 5% from $4,549 in 1991 to $4,341 in 2015 (Oregon legislature, 2018). In analyzing data obtained from the U.S. Department of Labor (2018), The average annual inflation rate, as measured by the Consumer Price Index, between 1995 and 2015 averaged about 2.1%. Unlike Oregon, other studies showed positive increases in funding as adjusted for inflation. For example, Ko (2006)
found that the average funding in Missouri when adjusted for inflation increased after
the State adopted the funding formula. Driscoll and Salmon (2008) also saw an
increase in funding in their 30-year study in Virginia. Report on adequacy of
educational funding in Oregon indicated that the cost of education in Oregon increased
at a higher rate than the inflation rate (Oregon Legislature, 2018). The report
highlighted the following factors to explain why funding declined: (a) increased
employees’ salaries, as employees’ wages represent 85% of school districts’ costs, and
the average increase in wages was about 1.9% over the last 10 years, (b) significant
increases in retirement benefits, the cost of retirement benefits for the average teacher
salary, increased by about 50% between 2016 and 2018, (c) health costs increased at a
higher rate than the general inflation rate, (d) other factors, such as a teachers’
shortage, could cause school districts to spend more on recruitments, and increased
costs of textbooks and assessment, and (e) changes in students’ demographics and
their needs, such as special education, English Language Learners, students in poverty,
foster care children, and students who were identified in the funding category of
neglected and delinquent could have added to the cost. For example, students in
poverty increased by more than 50% over the last 10 years, and the percentage of
homeless students increased by about 24% in the last five years.

Third, consistent with national trends, local control over funding schools
decreased, as evident by the reduction in the local portion of the funding from about
67% to about 33%. Additionally, the average tax rate per $1000 averaged about $23
prior to Measure 5 compared to about $12 in 2015 (Oregon Department of Revenue (2015). In other words, the amount of property taxes declined by about 50% between Pre-Measure 5, and Post-Measure 5 era. The findings in this study were consistent with changes highlighted by Augenblick, Myers, and Anderson (1997). They indicated that after litigations and advocacy efforts to bring about equity, there were two noticeable changes. First, the total education funding, especially the state’s portion for school districts, increased. Second, the local control over the amount that can be levied by school districts was decreased.

According to Garms and Smith (1970), most states in the United States adopted a system of funding that included local taxes supplemented by state aid money to equalize funding. States supplemented local efforts to mitigate the impact on local taxpayers and to equalize local tax levies among school districts. The purpose of equalization in this context was to attain “equity of educational opportunity.” Garms and Smith suggested that the concept of equalization in most states was not achievable, because schools provided students with a basic educational program in exchange for local taxes. Often the amount of money allocated by the state is not adequate, and it does not address differentiation in funding. Determining the amount of money considered adequate is not within the scope of this study, but it is an important topic for future research. This study is concerned with measuring the extent of equity of funding in Oregon.
**Extent of Equity in Oregon School Districts’ Funding**

In reforming school finance, the Oregon Legislature intended to bring fairness to school finance. Fairness is a key metric to measure equity for school districts that have similar needs while allowing differentiation in funding for districts that have distinctive qualities (Ramirez et al., 2013). According to Compton and Thompson (2011), policy makers dictate their objectives to enhance equity or adequacy through legislations that govern the state education finance system for schools. Compton and Thompson used the word *adequacy* to mean allocating enough resources to provide education to students and used the concept of vertical equity to acknowledge differentiation in students’ needs to achieve equal educational outcomes, resulting in unequal funding. The findings in this study indicated that the Legislature in Oregon succeeded in achieving horizontal equity but failed to achieve vertical equity. These findings are consistent with findings in other states such as Missouri, Virginia, Colorado and Texas (Ko, 2006; Driscoll & Salmon, 2008; Ramirez et al., 2013; Rolle & Jimenez-Castellanos, 2014). For example, Missouri enacted a new funding formula to improve equity in response to litigation. According to Ko (2006), the national data at the time showed that Missouri was the worst state in the nation in providing equitable resources to school districts. In response to the court order, the Missouri Legislature adopted the Outstanding School Act in 1993 to establish a new funding formula that ensured equity in funding (Ko, 2006). Like the old system in Oregon, the old system in Missouri was dependent on local property taxes, and each district levied
taxes to fund its schools based on its budget, which created an inequity that was based on wealth. Districts in wealthy neighborhoods were able to levy more money than those in depressed economic conditions. Under the new system, the State created a formula where all the districts received equalized funding based on certain factors, such as Average Daily Attendance. After Missouri adopted the new system, measures of horizontal equity improved. According to Ko (2006), CV decreased from .29 to .21, FRR decreased, the Gini Coefficient decreased from .16 to .11, and the McLoone Index increased from .86 to .89, which indicated an improvement in horizontal equity as opposed to vertical equity. Findings in this study showed similar results to the findings in the Missouri study. The CV value in Oregon declined from .12 to .05, the FRR decreased from .29 to .14, the Gini Coefficient decreased from .02 to .01, and the McLoone Index remained constant from 1995 to 2015 at about .98. Results of CV, FRR, Gini, and the McLoone index indicated that horizontal equity improved while vertical equity worsened between 1995 and 2015. In addition to the measures of equity, the standard deviation declined from 535 in 1995 to 356 in 2015 which indicated that the variation in funding in 1995 was much higher than the variation in 2015. The variation is illustrated in Figures 1 and 2. The Figures illustrated that the average funding for school districts was more clustered around in the mean in 2015 than it was in 1995.

While strong horizontal equity was evident in post Measure 5, Oregon deserved credit for attempting to differentiate funding based on school districts’ size
and for providing additional weights for some categorical items. This study found evidence of small vertical equity, for example, the findings that the smaller the district, the more funding per student it generated. This finding could be explained by the additional small school supplement approved by the Legislature in 2001. According to the Oregon Legislature (2017d), small school districts received an additional $2.5 million annually in appropriations above and beyond the amount that larger districts received. To neutralize the small school district effect, school districts with fewer than 1,000 ADMs were removed from the second analysis. The outcome was not statistically significant ($p > .05$). A third analysis was conducted on school districts with more than 8,500 students to see the effect of Oregon’s funding on larger districts. The results were similar except that the correlation in 1995 was moderately positive, and the outcome was statistically significant ($p < .01$). Positive results in 1995 might be explained by the residual amount of local taxes, because Measure 5 was not implemented completely until 1996, and the small schools supplement fund was not authorized until 2001. And accordingly, districts could have levied a higher amount in local property in 1995 than they did in the following years.

Despite Oregon’s attempt to differentiate funding by adding additional weights in the Equalization Formula, Oregon received a C grade in its fairness in distributing funds and an F in its equity efforts in a National Report Card that compared states’ funding and efforts to achieve equality of education. In the report, Baker et al. (2017), ranked Oregon 30th in the nation on a per student funding basis, and reported that
Oregon’s educational funding amounted to $8,971 per student compared with $18,165 in New York. Oregon’s own Quality Education Commission reported that the Oregon appropriation for 2017-2019 biennium was short $1.77 billion, or about 22% of the amount needed to fund education adequately (Oregon Legislature, 2018). Research showed that policy makers do not follow research-based methods to determine the sufficient amount of money or “weights” to cover the cost of education in the funding formulas (Garms & Smith, 1970; Walker, 1977). For example, in their review of cost studies of funding programs for at-risk students, Alexander and Walker (2006) found that funding formulas for low income students included an added weight of 15% to 25% of the average regular students’ cost, but the estimated cost of low income students averaged between 139% to 310% of the average student’s cost. This highlights the importance of regularly reviewing the additional weights in funding formulas to ensure they are sufficient and research-based.

The findings in this study were consistent with results seen in other states and nationally that were reported in this study. Measure 5 and school finance reforms, which followed, appeared to strengthen horizontal equity in Oregon, but it worsened vertical equity.

Limitations

The data provided by ODE was aggregated based on school districts’ submitted data without a direct validation or verification process by this study. Therefore, reliance on ODE data for accuracy and validity could be perceived as a
weakness. If data provided by ODE had errors, it could affect the results of this study negatively. However, considering that the findings of this study were consistent with other national studies and State reports, the likelihood that the results could change due to errors was very small.

The focus of this study was on revenues rather than expenditures. Revenues allocated to school districts do not always translate into using funds for their intended purposes by school districts. Accordingly, collecting expenditures and revenues could have strengthened this study, because expenditures would have provided more specificity as to how much is being spent on educating students rather than savings for other projects in future years.

Collecting and measuring equity in the years prior to passing Measure 5 may provide an interesting perspective and a complete picture of the equity analyses before and after passing Measure 5. While this study covered the last years in the gradual implementation of Measure 5, it could not fully capture the period prior to Measure 5.

The focus of the study was limited to Oregon state revenues excluding local option and other revenues outside the Equalization formula, and it did not include local or federal revenues. Local options in Oregon represent a shift from a horizontal equity policy and may impact equity by allowing wealthier districts to levy more resources than less privileged districts.

This study focused on equity methods to measure the extent of equity financially rather than determining the amount of money considered adequate. To
determine the amount of money considered adequate, it requires further research and analysis beyond the scope of this study.

**Implications**

There are implications from this study on different levels; on the local school district level, on the State level and on the national level.

**School districts’ implications.** This study provided important findings for local school districts and local educational advocates. The study showed that school districts’ funding in Oregon between 1991 and 2015, when adjusted for inflation, declined by about 20%. This finding could help local educational leaders in their advocacy to push for more funding.

**Oregon policy implications.** The findings in this study highlighted lack of vertical equity among school districts. Despite the additional weights in the formula for English Language Learners and other categorical groups, it was evident that the added weights did not improve vertical equity, and the formula was not updated regularly. The minimum amount, and the weights used in the Equalization Formula were established in 1991 when the formula was first adopted, and were never updated since then, except for the special education’s disability funds, and the small schools supplemental amount. Some states update elements of their funding formula regularly and add supplemental support categories, such as English Language Learners and Special Education above the formula. For example, in Massachusetts, the formula considers 10 different categories, and pays for special education and English
Language Learner categories, an amount above the formula. The formula amount is adjusted annually using three factors; inflation, wage increases, and student enrollment (Massachusetts Department of Education, 2018). Oregon should consider adopting a similar model to ensure adequate and updated funding model for its students.

**National level implications.** The results in this study were consistent with national studies that indicated a lack of differentiation in funding in the United States (Baker et al., 2017; Driscoll & Salmon, 2008; Ko, 2006). There is a need for a dialogue on the national level to determine how best to fund students with diverse needs adequately.

**Recommendations for Policy Makers**

1. Guided by Dunn (2004), this study recommends the following steps to analyze the policy development to reform school finance:
   a. Define the problem: What is the problem that school finance reforms is trying to solve.
   b. Develop options to solve the problem: Once the problem is defined, multiple options should be considered to solve the problem.
   c. Determine Consequences: determine the consequences of each option by measuring outcomes and creating forecasting to predict outcomes for different options.
d. Measure Results: measure outcomes and determine if reforms accomplished the intended goals and allow for adjustments as needed to ensure reforms achieve its intendent objectives.

2. Consider an assessment of the base amount and the weights designated for each category to determine that the amount funded is supported by sound research. The Oregon Equalization Formula includes a base amount of funding of $4,500 per student to fund schools. It also includes additional weights to fund certain categories, such as poverty level for low income students, English Language Learners, and Special Education. For example, Massachusetts is required to assess its formula annually using three categories; inflation, wage increases index, and enrollment (Massachusetts Department of Education, 2018).

3. Consider other categories to add to or modify the equalization formula to improve adequacy in funding. For example, in Massachusetts, the State uses teachers and guidance salaries to determine the amount of fund allocated to school districts (Massachusetts Department of Education, 2018). Using teachers’ salaries makes sense, considering that 80% of school districts’ budgets are on average spent on teachers’ salaries (The U.S. Department of Education, 2017). Policy makers should also consider increasing the overall funding for K-12 education to reflect a state’s commitment for an adequate K-12 education and provide differentiation in funding based on students’ needs.
According to Baker et al. (2017), Ohio and Delaware fund their highest poverty districts, on average, 27% to 44% more funding per student than their lowest poverty district. National studies showed that the cost of educating low-income students averaged between 139% to 310% of the cost of educating regular student (Alexander & Wall, 2006).

4. This study illustrated that Oregon achieved horizontal equity but failed to achieve vertical equity. The need for differentiation in funding based on students’ needs is important, but the data indicated that Oregon did not differentiate funding among school districts except for differentiation based on school districts’ size, where small school districts received more funding than large districts.

5. It is evident from the Quality Education Commission and the failed efforts of Measure 97 that education funding is not adequate. As discussed in Chapter 2, Measure 97 was a failed attempt in 2016 to reform the tax system to increase sales taxes on corporations to generate additional funding for education. As demonstrated by Measure 1 supporters, legislators are criticized for not funding education adequately and for not making education a priority when they approve the state budget. Measure 1 was approved in 2000 to hold legislators accountable to fund education or provide reasons to explain why they cannot. It has been shown year after year that legislators cannot fund education adequately. The reason Oregon cannot fund education adequately
could be explained by the State reliance on property and income taxes to fund the educational programs; this is evident in reports by the Legislature’s staff (Oregon Legislature, 2017e). Oregon policy makers may want to rethink the tax system and consider switching to a different system, such as sales taxes, which could allow the State to generate more resources to fund educational programs sufficiently.

Recommendations for Future Research

1. Compared with other states, Oregon ranked 30th as measured on per-student funding in the National Report Card. Oregon’s own Quality Education Commission reported that, the Oregon appropriation for 2017-2019 biennium is short $1.77 billion, or about 22% of the amount needed to fund education adequately (Oregon Legislature, 2018). The findings in this study support the notion that Oregon is falling short in funding education in Post-Measure 5 era. Considering the major changes in the State policy after Measure 5, the next step to advance this research is to determine the impact of lack of adequate funding on students’ performance and graduation rate.

2. This study focused on financial equity measures to determine horizontal and vertical equity of funding. Defining the amount of adequate funding may vary from one state to another depending on each state’s resources and students’ needs. Future research may determine the amount per student that is considered adequate.
Conclusion

School finance reforms are critical to achieving equity in funding education. Equity can be vertical or horizontal. Vertical equity in school finance provides adequate resources to give students equal opportunity regardless of their background, disability, language, poverty, and the skills of students when they start school. Providing resources to achieve equity ought to be sustained, during the tenure of students in schools, to provide students with equal opportunity to achieve educational outcomes. Horizontal equity, on the other hand, is concerned with closing the gap between wealthy and poor districts, and it is achieved when funding per student among school districts is equal. As seen in this study, it appeared that vertical and horizontal equity are two opposites and achieving one could be at the expense of not achieving the other. Equity can be measured using equity instruments. The most widely used measures of equity which were used in this study include; the Coefficient of Variation, the Federal Range Ratio, the Gini Coefficient and the McLoone Index. In addition to these measures, this study used the Correlation Coefficient and descriptive statistics to analyze trends, and impact on equity of funding in Oregon.

Oregon appeared to achieve horizontal equity as evident by measures of equity summarized in Tables 5, 6, 7, 8, and Figure 2. However, the reform of school finance in Oregon failed to improve vertical equity except for small schools, as evidenced by measures of equity summarized in Tables 5, 6, 7, 8, 9, and Figure 2. School districts’ funding appeared to be inadequate to provide students with equal opportunity as
evident by Figure 5 and the Quality Education Commission (QEC) report. Most recently the commission reported that the Oregon appropriation for 2017-2019 biennium is short $1.77 billion, or about 22% of the amount needed to fund education adequately (Oregon Legislature, 2018).

School finance reforms are important to improve equity. However, if they are not implemented carefully, they can yield unintended consequences that could harm efforts to improve equity in school finance. In Oregon, Measure 5 and legislators’ efforts to reform school finance to achieve equity provided a case example for other states and researchers. In this case, Oregon achieved horizontal equity but not vertical equity. Despite its efforts to increase State funding, Oregon fell short of providing adequate funding to schools. The State increased its portion and reduced the local portion of funding in its efforts to respond to Measure 5, and to reform school finance. But the overall funding, when adjusted for inflation, decreased between 1991 and 2015. To reform school finance, specific steps to analyze policy development is recommended. Steps to analyze Oregon policy development in this study were guided by the work of Dunn (2004). Dunn defined policy development as: “Policy analysis is a problem-solving discipline that draws on theories, methods, and substantive findings of the behavioral and social sciences, social professions, and social and political philosophy” (p. 1).
Reforming school finance can be illusive and at times it may seem impossible to accomplish, but research may offer a path and research-based methods to help achieve equity.
References


https://oregonencyclopedia.org/media/uploads/Measure_5_voters_pamphlet.pdf


https://www.oregonlegislature.gov/lro/Documents/rr4-03.pdf

https://www.oregonlegislature.gov/lro/Documents/rr3_4_k12esd_schoolfinanceSSF_dist.pdf


http://library.state.or.us/repository/2014/201410140801332/

https://olis.leg.state.or.us/liz/2015R1/Downloads/MeasureDocument/HB3499/Enrolled

https://olis.leg.state.or.us/liz/2015R1/Downloads/CommitteeMeetingDocument/43408

https://www.oregonlegislature.gov/lro/Documents/RMP%202015%20FINAL.pdf

https://olis.leg.state.or.us/liz/2017R1/Downloads/MeasureDocument/SB4/Enrolled

https://olis.leg.state.or.us/liz/2017R1/Downloads/MeasureDocument/SB5517


https://olis.leg.state.or.us/liz/2017R1/Downloads/CommitteeMeetingDocument/95636


http://www.osba.org/Resources/Article/Budget_and_Finance/History_of_school_funding.aspx

OR. Const. art. I, § 20

OR. Const. art. III, § 3

OR. Const. art. XI, § 11

Or. Rev. Stat. § 327
Or. Rev. Stat. § 327.008
Or. Rev. Stat. § 327.013
Or. Rev. Stat. § 330.090


Serrano v. Priest, 5 Cal. 3d 584, 96 Cal. Rptr. 601, 487 P.2d 1241 (CA. 1971)


U.S. Const. am. XIV, § 1


## Appendix A: Summary of Ballot Measures and Laws in Oregon

### Table A1

*Summary of Oregon Ballot Measures and Laws, Their Impact on K-12 Education and*  
*Source of Information Between 1990 to 2015.*

<table>
<thead>
<tr>
<th>Year</th>
<th>Initiative/Law</th>
<th>Impact</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>Measure 5</td>
<td>Amended the Oregon Constitution (OR. Const. art. XI, § 11) and limited property tax rate to $5 per $1000 Assessed value</td>
<td>Oregon Encyclopedi a (1990)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Requires consolidation of union high school and elementary school districts. According to Oregon School Board Association (2018), the goal of the 1991 legislation was to reduce the number of school district to 199 by the 1997-98 school year.</td>
<td>(Oregon Legislature, 1991)</td>
</tr>
<tr>
<td>1993</td>
<td>SB 26</td>
<td>Consolidate 29 ESDs into 18</td>
<td>(Oregon Legislature, 1993)</td>
</tr>
<tr>
<td>Year</td>
<td>Bill Number</td>
<td>Description</td>
<td></td>
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<tr>
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<td></td>
</tr>
<tr>
<td>1993</td>
<td>HB 2066</td>
<td>Change procedures and requirements for mergers and unification of school districts (Oregon Legislature, 1993)</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>HJR 15</td>
<td>Allows lottery money to be used for public education. Transfer $103 million in 1997-1999 biennium to create education endowment fund. (Oregon Legislature, 1995)</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>SB 467</td>
<td>Exempts an elementary district from requirement to unify if it has school more than 15 miles from the nearest high school in their high school district, or the high school is a boarding school on January 1, 1995 (Oregon Legislature, 1995)</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>HJR 71 / HB 3556</td>
<td>Enacts Oregon School Bond Guaranty Act. Permits the state to guarantee general obligation bonds issued by qualified school districts, education service districts, and community colleges. Applies to bonds issued after the effective date. (Oregon Legislature, 1997)</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>HB 3636</td>
<td>Requires Department of Education to develop uniform budget and accounting system for K-12 schools. (Oregon Legislature, 1997)</td>
<td></td>
</tr>
</tbody>
</table>
Implement Measure 50 Calculates 17% statewide tax reduction on virtually all operating levies. Distributes constitutional Measure 50 tax cuts like Measure 47 cuts, except for differences required by Measure 50. Distributes statutory cuts required by this bill by equal rate (about 1.4%) against all operating levies except hospital districts. Makes special provision for high value growth districts, high 1995-96 offset districts, Heppner, and districts faring worse under Measure 50 than Measure 47.

Applies $5 school rate limits and $10 non-school limits to each property rather than applying the limits to each code area. (Oregon Legislature, 1997)

Establishes Measure 50 assessed value system. Determines value by property tax account. Sets value of new property by county-wide ratios areas and by property classes. Sets property classes by rule. For utility class, sets ratio statewide. Freezes maximum value growth if assessed value falls below maximum. Exempts up to $10,000 of minor construction from triggering higher taxes due to construction if it does not exceed $25,000 over 5 years. Prohibits assessor from revaluing property before applying Measure 50 limit.

This legislation establishes a local property tax option for individual school districts. Districts must get approval of local voters for additional (Oregon Legislature, 1999)
local property tax revenue. This measure is significant from two perspectives. First, it represents the first substantive change in the general property tax system since passage of Measure 50 in the spring of 1997. Secondly, it marks a shift from the state's post-Measure 5 policy of movement toward equalized funding across school districts. Makes tax excluded equal to the lesser of (1) Measures 5 and 50 tax gaps, (2) 10% of state and local revenue from the school equalization formula or (3) $500 per weighted student. Permits districts to collect less than the full tax approved by voters. First applies to 2000-01

1999  SB 100 (CH 200)  Specifies procedure and criteria for operating a free public charter school. (Oregon Legislature, 1999)


2001  SB 519 (CH 670)  Creates a Small School District Supplement Fund. Transfers $4.5 million per year from the State School Fund to the Supplement Fund in 2001-03. Defines small school district as districts under 8,500 weighted students and with high schools having less than 350 students for 4 grades and 267 for three grades. Requires the State Board of Education to adopt rules. (Oregon Legislature, 2001)
<table>
<thead>
<tr>
<th>Year</th>
<th>Bill Number</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>HB 2295 (CH 895)</td>
<td>Establishes an 11-member Quality Education Commission appointed by the Governor. Requires Commission to determine biennial funding sufficient to meet quality education goals for K-12 public education. Bases funding on costs of implementing best practices. Requires biennial report identifying (1) current practices, the cost of continuing these practices and expected student performance and (2) best practices for meeting quality goals, implementation costs and expected student performance. Requires report to include at least two alternatives for meeting quality goals including phase-in of best practices.</td>
<td>(Oregon Legislature, 2001)</td>
</tr>
<tr>
<td>2001</td>
<td>HB 2298 (CH 794)</td>
<td>Creates School Improvement Fund. Requires funds be used for activities that increase student achievement. Limits use of funds in 2001-03 and 2003-05 to activities that relate to improved 3rd and 5th grade reading and math</td>
<td>(Oregon Legislature, 2001)</td>
</tr>
<tr>
<td>2003</td>
<td>SB 372</td>
<td>Allows division of Morrow School District to form Ione School District</td>
<td>(Oregon Legislature, 2003a)</td>
</tr>
<tr>
<td>2003</td>
<td>SB 550</td>
<td>Adds new high cost disabilities grant, modifies transportation grant, extents small high school supplement, increases local option exclusion limit, reduces Portland school statutory rate in 05-06. Creates a High Cost Disabilities Grant as part of the school equalization formula. Establishes a</td>
<td>(Oregon Legislature, 200a3)</td>
</tr>
</tbody>
</table>
High Cost Disabilities Account within the State School Fund. Transfers $12 million per year from the State School Fund into the account. Requires funds be used to pay approved special education costs for high cost students. Makes grant equal to costs exceeding $25,000 per student. Includes ESD student cost in district cost. If district costs exceed funds in the account, prorates grant revenue among districts. Sunsets high cost disability grants July 1, 2005.

Portland Public Schools Gap Tax: Beginning in 2005-06, the Portland school tax rate reverts to its 2003-04 rate and there is less local revenue included in the school equalization formula. School formula revenue for all districts will be less by about $15 million a year and grows with Portland school district assessed value.

2005 SB 1071 (CH 834)

Creates Oregon Virtual School District within the Department of Education. Specifies purpose is to provide online courses for public school students in grades K-12. Requires courses to meet statutory academic content standards and State Board of Education criteria.

2005 HB 2450 (CH 803)

Continues the high cost disability grant in the school equalization formula. Increases eligible high costs per disability student to those above $30,000 from those above $25,000. Maintains limiting the grant total to
$12 million per year and prorating grants if eligible costs exceed the limit.

Continues the $2.5 million per year small high school supplement fund. Maintains funding from the State School Fund

<table>
<thead>
<tr>
<th>Year</th>
<th>Bill Number</th>
<th>Summary</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>SB 211A (CH 488)</td>
<td>Increases the amount of State School Fund revenue allocated for high cost disability students (costs above $30,000 per disability student) from $12 million to $18 million per year in the school equalization formula.</td>
<td>Oregon Legislature, 2007</td>
</tr>
<tr>
<td>2007</td>
<td>SB 1036B (CH 829)</td>
<td>Allows school districts to impose a tax on new construction measured by the square footage of improvements. Requires revenue to be used for capital improvements and defines capital improvements. Sets a tax rate limit of $1 per square foot for residential use and $0.50 for nonresidential use. Imposes additional $25,000 limit on nonresidential use. Indexes rates beginning in 2009.</td>
<td>Oregon Legislature, 2007</td>
</tr>
<tr>
<td>2009</td>
<td>HB 2533 (CH 698)</td>
<td>Allows Portland School District to continue to levy its current property tax rate and exclude tax from $0.50 of the rate from school formula local revenue. First applies in 2009-10. In effect makes the Gap tax permanent for Portland Public Schools</td>
<td>Oregon Legislature, 2009</td>
</tr>
</tbody>
</table>
Revises the Oregon Constitution subject to voter approval. Exempts taxing districts from Measures 5 and 50 bond limitations if bonds incurred after January 1, 2011 to finance capital costs. Defines capital costs and limits life of bonds. Allows the State to issue general obligation bonds up to 0.5% of the market value of real property

Establishes statutory provisions required for the Superintendent of Public Instruction to borrow money pursuant to Article XI-P of Oregon Constitution for capital costs of school districts. Establishes the School Capital Matching Fund to replace the school capital matching subaccount. Establishes the Article XI-P Bond Fund and the Article XI-P Bond Administration Fund. Makes statutory changes related to the implementation of the Article XI-P of Oregon Constitution. Declares an emergency and takes effect on passage.

Creates the Oregon Education Investment Board charged with overseeing a unified public education system, developing a unified outcomes-based budget and recommending strategic investments and decision-making structures for education for early learning programs, K-12 and post-secondary education.
2015 | HB 2927 (CH 555) | Increases the High Cost Disabilities (HCD) Grant to $35 million per school year. First applies to the 2015-16 State School Fund (SSF) distribution. (Oregon Legislature, 2015c)  

2015 | SB 321 (CH 234) | Lowers the compulsory school age from seven to six years of age. Takes effect on July 1, 2016 (Oregon Legislature, 2015c)  

Establishes the capital improvement matching grant program to provide matching fund to school districts for their capital costs. Authorizes the State Treasurer to issue and use the proceeds of Article XI-P bonds to finance the grant program. Limits the total facility grant to $12.5 million per biennium for 2015-17, and $9 million thereafter. Creates the Office of School Facilities (OSF) to run the capital improvement matching grant program and the facility grant program. (Oregon Legislature, 2015c)
**Appendix B: Summary of Mergers and Consolidation**

**Table B1**

*Summary of Mergers and Consolidations for School Districts From 1995 to 2015*

<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between 1995 and 2000, Monroe U, Monroe 25, Bellfountain, Irish Bend, and Alpine merged into Monroe 1j CD 02001</td>
</tr>
<tr>
<td>Between 1995 and 2000, Welches 1, Sandy 46, Cortell 10, Sandy UH2 merged into Oregon Trails 46 CD 3046</td>
</tr>
<tr>
<td>Between 1995 and 2000, Olney 11 and Astoria 1 merged into Astoria 1 CD 04001</td>
</tr>
<tr>
<td>Split Clatskanie 5 J into Knappa 4 CD 04004 and Clatskanie 6 J CD 05006. Assumed Knappa 4 1995 count is 600 student count and reduced Clatskanie 6 by this count for 1995 to ensure comparable data for future years. The 600 number came from ODE data when it was created in 1998.</td>
</tr>
<tr>
<td>Between 1995 and 2000, Gold Beach E, Agness, Ophir pistol river and Upper Che merged into Central Curry 1 CD 08001</td>
</tr>
<tr>
<td>Between 1995 and 2000, Sisters 6 and Brothers 15 merged into Sisters 6 CD 09006</td>
</tr>
<tr>
<td>Between 1995 and 2000, Reedsport 105 and Ash Valley merged into Reedsport 105 CD 10105</td>
</tr>
<tr>
<td>Between 1995 and 2000, Arlington3 and .75 of Olex 11 merged into Arlington 3 CD 11003</td>
</tr>
<tr>
<td>Between 1995 and 2000, Condon 25 j and .25 of Olex 11 merged into Condon 25j CD 11025</td>
</tr>
<tr>
<td>Between 1995 and 2000, Klamath U H2 and Klamas Falls merged into Klamath Falls 1 CD 18001</td>
</tr>
</tbody>
</table>
Between 1995 and 2000, Lake View and Union merged into Lake County CD 19007

Between 1995 and 2000, Harrisburgs, Harris and Wyatt merged into Harrisburg 7 CD 22007

Between 1995 and 2000, Sodaville, Lebanon 1, Mari-linn, Sandridge, Hamilton, Lacomb, Gore 81, Crowfoot, Tenessee, Loudres, and Lebanon U merged into Lebanon Community CD 22009

Between 1995 and 2000, Silvertown 4, Sublimity 7, Evergreen 10, Monitor 142j, and Silvertown UH7 merged into Silver Falls 4j CD 24004

In 2005 Lone Star district was created from Morrow school district. Assumed the student count for 1995 and 2000 as 270 which is the student count for 2005 when it was created and reduced Morrow School district 1 count for those two years by equal amount to ensure accurate counting and comparable data for future years.

Between 1995 and 2000, Victor Point 42, Pratum 50, Bethany 63, Scotts Mills 73j, Stayton 77j, Silvercrest 93, Detroit 123, Central Howell 540 and Stayton UH4j merged into North Santiam 29j CD 24029

Between 1995 and 2000, Sauvie Island 19 and Centennial 28j merged into Centennial 28j CD 26028

Between 1995 and 2000, Bonneville 46 and Corbett 39 merged into Corbett 39 CD 26039

Obtained ADM and relevant 2000 data for Sherman from ODE FY2000 data query raw 187

Between 1995 and 2000, Wamic 42, Maupin 84, and Wasco UH1 merged into South Wasco 1 CD 33001

Between 1995 and 2000, Chenowith 9 and Dalles 12 merged into North Wasco CD 33002

Between 1995 and 2000, Petersburg 14 and Dufur 29 merged into Dufur SD 29 CD 33029

Between 1995 and 2000, West Union 1, Hillsboro 7, Reedville 29, Groner 39, Farmington View 58j, North Plains 70, Hillsboro UH3j merged into Hillsboro 1j CD 34001