ADEQUACY AND EQUITY IN EDUCATION FINANCE:

How can K-12 contexts inform higher education?

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INTRODUCTION

Since the late 1960s, K-12 researchers have debated whether "money matters" for improving educational opportunities and outcomes (Burtless, 2011; Coleman et al., 1966; Plecki & Castañeda, 2012; Rebell, 2017). Today's research consensus is that money matters in several ways; how much is spent, how it is spent, and policies shaping spending decisions all affect student outcomes in meaningful ways (B. D. Baker, 2016; Jackson, 2020). Higher education literature has studied this topic in far less detail, yet the findings are reaching a similar consensus where "money matters" for expanding access and improving completion (Cummings et al., 2021). And just like in K-12 education, there are large funding disparities in higher education that give rise to unequal opportunities and outcomes for students.

These disparities are at the heart of many K-12 finance policy reform efforts across the states. And in higher education, there is growing national interest in applying the K-12 concepts of "equity" and "adequacy" into higher education funding policies. Could these concepts prove useful in addressing funding disparities in higher education? Unfortunately, there are no clear answers to this question because there is no consensus on what constitutes equitable or adequate funding in higher education.

To help the field answer this question and build consensus, this review first summarizes key themes in the K-12 and higher education finance literature. We demonstrate similarities and differences in the legal, economic, and measurement contexts between the two educational settings. Second, we evaluate whether and under what circumstances K-12 funding policies provide useful insights for higher education policymaking. Finally, we conclude with a summary of considerations that higher education policymakers, researchers, and other interested parties should bear in mind when drawing lessons from K-12 finance.

KEY THEMES IN THE K-12 AND HIGHER EDUCATION FINANCE LITERATURE

LEGAL CONTEXT

Differences in the legal framework of K-12 and higher education have resulted in different approaches to litigating finance reform.

Litigation has been a significant avenue for finance reform in both K-12 and higher education. However, the approaches—centered primarily on equity and adequacy in K-12 and civil rights in higher education—highlight important differences in the legal framework of the sectors.

Between 1968 and 2021, 48 states had lawsuits challenging their K-12 funding models (Hanushek & Joyce-Wirtz, 2023). These cases can be categorized into three waves. During the first wave, legal challenges focused on the equal protection clause of the Fourteenth Amendment of the U.S. Constitution. In cases like *Serano v. Priest*, plaintiffs argued that students have unequal treatment because K-12 funding that is highly dependent on property tax ties educational access to local property wealth (B. D. Baker & Green, 2007). Then, in a 1973 case, *San Antonio Independent School District v. Rodriguez*, the U.S. Supreme Court ruled that there was no federal constitutional right to education and a poor school district was not a suspect class (B. D. Baker & Green, 2007). Consequently, states did not need to equalize revenue disparities between districts with high and low property tax values. This ruling ushered in the second wave of litigation, which also focused primarily on equity-based arguments, but at the state rather than the federal level. Plaintiffs argued that the state funding formula disadvantaged communities with lower wealth and violated state-level equal protection clauses. These cases had limited success (Briffault, 2006).

In the third wave, beginning in the late 1980s, plaintiffs scrutinized education statutes of state constitutions and used adequacy-oriented arguments. Every state constitution establishes a system of public education (Parker, 2016) open to—and compulsory for (NCES, 2017)—all students. While statutes vary, state constitutions frequently include terms like "general and uniform," "thorough and efficient," or "adequate" when describing the quality of education states shall provide (Parker, 2016). Litigation strategies drew a direct line between this statutory language and state funding models (Briffault, 2006). The general argument was that inadequate funding produced unequal educational opportunities, which in turn produced unequal student outcomes (Hanushek & Joyce-Wirtz, 2023). This strategy contributed to a broader shift in K-12 policy which reframed equity in terms of outcomes, emphasized standards-based accountability, and allowed for different funding levels based on district or student need (Clune, 1994).

The third wave is still in place today, in which cases fall at the intersection of adequacy and equity, with state supreme courts determining whether funding is adequate to support students with different educational needs and meet state performance standards (B. D. Baker & Green, 2007).

This legal context is central to understanding today's K-12 finance landscape because successful cases require states to reallocate financial resources to schools that need it most. A comprehensive review of cases occurring between 1968 and 2021 found about 40% successfully overturned state funding models (Hanushek & Joyce-Wirtz, 2023). Successful cases tend to result in more funding flowing to lower-resourced schools which can boost students' educational outcomes (Candelaria & Shores, 2019; Lockridge & Maiden, 2014). However, economic benefits are generally concentrated in the immediate post-period and have been smaller in more recent court cases (Bischoff & Owens, 2019; Condron, 2017; Hanushek & Joyce-Wirtz, 2023; Murray et al., 1998). Additionally, court orders typically require legislative action to appropriate additional resources or revise the allocation models—which may or may not be carried out in good faith (B. D. Baker & Welner, 2011).

The legal context around higher education funding models is very different from K-12 education. For example, state constitutions typically say little about public higher education (Parker, 2016). When they do, the language is often limited to establishing or chartering public institutions. Rarely do statutes include language concerning the quality of education students are minimally expected to receive in college.

Because of this, litigation in higher education finance has been primarily based on Title VI of the Civil Rights Act[1]. Title VI prohibits discrimination in any program receiving federal funding—including most colleges. Public Historically Black Colleges and Universities (HBCUs) have been at the forefront of legal cases based on Title VI violations. The plaintiffs of these cases argue that the state operates a dual system of higher education, maintaining vestiges of racial segregation via program duplication, unfair admissions standards, and/or unequal funding (Hughes, 2008).

Two pivotal cases established the standards for discrimination suits. First, after *Adams v. Richardson* in the 1970s, the Office of Civil Rights developed a framework for court-ordered desegregation compliance, including eliminating: inequality in Black and white enrollment and graduation rates, dual education systems, and program duplication (Hughes, 2008). Second, with *United States v. Fordice* in the 1990s, the court established three steps to identify if a state meets the obligation to desegregate higher education. The plaintiffs must demonstrate the policy can be traced to discriminatory practices. Then, if the state can establish the policy does not have segregative effects, the policy can stand. Finally, if segregative effects do persist, the state can argue that there are no practical alternatives which would produce less segregation (*Knight v. Alabama, 458 F.Supp.2d 1273*, 2004).

These cases have broader implications than institutional finances, but the resolution often includes settlement funding to improve programs and infrastructure at underfunded institutions and promote integration efforts. For example, in the 1981 filing for *Knight v. Alabama*, the plaintiffs argued that HBCUs were discriminated against in state appropriations, denied land-grant funding, and prevented from growing into more prestigious and well-funded institutions like the state's traditionally white flagships (Brooks, 2004; Morris et al., 1994). Additionally, branch campuses for traditionally white institutions were located in the same communities as HBCUs, creating competition for students (Morris et al., 1994).

[1] We focus on Civil Rights Act cases centered on state finance. There are additional cases focused on student discrimination, for example, *Brown v. Board of Education* in K-12 and, in higher educaiton, *Smith v. Winters* and Settlement Agreement between the USA and Highland Community College. See: www.justice.gov/crt/case-summaries.

After a series of rulings and appeals, the 1995 *Knight* ruling found institutional segregation did exist and required action to remove the vestiges of segregation. These actions included funding for HBCUs through an endowment trust fund, matching grants, capital funding, and a new funding formula. The ruling also established financial investment for academic and diversity scholarships, investment in faculty, and a lecture series at the HBCUs. Settlements in this, and similar, cases have been critiqued for placing the burden of integration disproportionately on HBCUs and for failing to provide enough resources to truly address historic inequities in funding (Harris, 2021; Morris et al., 1994).

ECONOMIC CONTEXT

K-12 and higher education have different revenue sources and cost-sharing strategies, necessitating different policy considerations to equalize resources.

The economics of higher education are, in some respects, similar to K-12 education. For example, K-12 schools and institutions of higher education are labor-intensive enterprises reliant on highly educated and highly skilled workers. Budgets in both K-12 and higher education are largely driven by human resources as most expenses are tied to employees' salaries, wages, and benefits. In both K-12 and higher education, operating and maintaining buildings are another large expense. As a result, many of the basic economics of education are similar in both K-12 and higher education with labor and operations as major cost drivers.

Despite these similarities, two major differences are noteworthy and can complicate any comparisons between K-12 and higher education finance. First, state and local governments are often the dominant revenue stream for K-12 schools whereas institutions of higher education also rely heavily on students' tuition revenue. Second, higher education uses a more complex "cost-sharing" model in which local and state governments, the federal government, philanthropy, students, and auxiliary services all generate revenue for the institution. Because of these two major differences, K-12 funding models do not translate neatly to higher education.

K-12 schools have nearly total reliance—99.4% of overall revenue—on public funding (NCES, 2023b). As a result, policymakers have substantial influence over both the level and distribution of resources. When coordinated across different levels of government, there is great promise for policy to equalize funding. For example, many states have funding models designed to address disparities in local funding capacity. Under the "foundation program" allocation model—the most common state funding approach—states appropriate the difference between available local funding and a specified per-pupil funding target (Skinner, 2019). In another model, "district power equalization," the state provides a set amount of funding per unit of local tax effort with the guarantee of meeting a minimum funding-per-student (Skinner, 2019).

The emphasis on balancing state and local funding reflects K-12's history of local control and more contemporary legal challenges. In the early 20th century, local funding accounted for a large majority of K-12 revenue—over 80% in the 1930s (NCES, 2023a). However, since the 1980s, state and local governments have become more equal partners in funding K-12 education. In 2020-2021, 46% of total K-12 revenue was from the state, 44% from local sources, and the

remaining 11% from the federal government, with variation across states (NCES, 2023a). This shift coincides with the rise of legal action over inequities and inadequacies in district capacity to fund K–12 education.

In higher education, public funding is a smaller portion of total revenue, and cost-sharing focuses on balancing public and private revenue. At two-year colleges, public funding accounts for only about 79% of revenue and, at four-year colleges, 36% (NCES, 2022). Institutions of higher education also receive revenue from gifts, auxiliary services, research grants, services, and—most consequentially—tuition and fees. Reliance on tuition varies widely by state and institution, but overall four-year colleges receive a higher proportion of their per full-time equivalent (FTE) funding from tuition than two-year colleges (SHEEO 2021, 2022).

Since institutions of higher education can raise revenue through tuition and other sources, there may be reduced political will to fund higher education (Gándara et al., 2023). Particularly during economic downturns, higher education funding is cut much more severely than K–12, a phenomenon known as the "balance wheel" (Delaney & Doyle, 2011; B. J. Taylor et al., 2023). Since there is no universally agreed upon balance of state investment relative to other revenue sources, the distribution is largely shaped by political perspectives on higher education's purpose and public benefit (Labaree, 1997). When institutions are underfunded, the remaining cost is largely passed on to students, which affects access and outcomes (Cummings et al., 2021)—an issue K–12 does not need to address.

Some states also try to balance local and state resources, particularly for community colleges, where about 22% of total revenue is locally funded (NCES, 2022). For example, Wisconsin's Equalization Index allows districts with lower valuation to receive more state aid (Toniolo, 2023). However, this type of local equalization has very limited applicability for four-year colleges, where only 4% of total revenue is from local sources (NCES, 2022). Even if local and state resources are equalized, state policy has limited capacity to address inequities in revenue from non-public resources, such as endowments (B. J. Taylor & Cantwell, 2019).

MEASUREMENT CONTEXT

K–12 measures of equity and adequacy may apply to higher education methodologically but require modification.

The concepts of "equity" and "adequacy" have a long history in K–12 that is tied closely to the legal context and performance standards movement. Do students have adequate resources to reach state performance standards? Are funds distributed equitably across districts to ensure all students can meet state standards? These questions are at the heart of many K–12 funding debates and both questions link financial resources to some sort of measurable educational standards.

When states started facing litigation in the 1970s and 1980s, courts relied on academic scholars to develop methods for measuring equity and adequacy in funding models. For example, Berne and Stiefel (1984) developed an influential framework that defined *equity* conceptually and methodologically. The framework is organized around practical questions including: (1) who

should funding be equitable for? (2) what resources or services should be distributed equitably? (3) how should equity be conceptualized? and (4) which measures best assess progress towards equity?

While the framework is oriented toward *equity*, state courts and legislatures were shifting into the third wave of litigation by asking how to identify what level of K-12 funding would be *adequate* to meet certain outcomes. This shift towards adequacy was driven by legal battles and performance standards, but also growing awareness that a high quality education was necessary for a productive workforce and fair society (Clune, 1994; WestEd, 2000). Perhaps more practically, this shift also occurred at a time when data and technology improved measures of student academic performance.

Subsequently, the 1990s and early 2000s saw considerable developments of four major methodologies for determining whether funding levels are adequate for meeting various academic standards (Downes & Stiefel, 2015; L. L. Taylor et al., 2005). These methods are still widely used today. The **cost-function method** uses statistical analysis and historical expenditure data to identify the funding levels needed to achieve a specified outcome at schools with different characteristics. The **professional judgement method** convenes a panel of knowledgeable stakeholders, including teachers and administrators, to identify services and resources that schools need, then draws on panel recommendations to estimate cost. The **evidence-based method** uses research on effective practices that schools should implement, such as student to teacher ratios, to estimate cost. Finally, the **successful schools method** sets a baseline using spending levels at schools that are currently meeting high performance standards and serve representative student populations.

These methods are often employed in response to court cases or standards-based reforms (e.g., Augenblick, Palaich & Associates, 2016; Kolbe & Baker, 2019; Levin et al., 2018; Odden et al., 2014). The aim of each method is to estimate the dollar amount that schools need to reach a particular performance goal, such as meeting a minimal (or "proficient") standardized test score. In practice, the specified dollar amount produced by any of these adequacy studies serve as a starting point for political negotiation. Each method for measuring adequacy has advantages and disadvantages, and each method will yield different results, calling into question the reliability of adequacy studies (Downes & Stiefel, 2015; Kentucky Legislative Research Commission, 2023).

Higher education researchers have begun translating the equity framework and adequacy measures from K-12 to higher education. Studies on funding equity have largely focused on the relationship between state spending on community colleges and local wealth, drawing a parallel with K-12's emphasis on the balance of state and local funding (Dowd & Grant, 2006, 2007; Kolbe & Baker, 2019). However, this type of analysis is less applicable to four-year colleges that receive little local funding. The higher education research field has yet to reach consensus on how to meaningfully measure funding equity.

Methodologically, some summary statistics recommended by Berne and Steifel (1984) have been applied to higher education, particularly the Gini coefficient (e.g., Cheslock & Shamekhi, 2020; Davies & Zarifa, 2012; Lau & Rosen, 2016). However, higher education scholars have also employed more advanced methodologies like the Blinder-Oaxaca Decomposition (Sav, 2000, 2010) and data envelopment analysis or stochastic frontier analysis (Titus & Eagan, 2016). These

measures are useful for identifying inequities in higher education, and they demonstrate that MSIs, community colleges, and institutions enrolling more students of color and students from low-income backgrounds often have the fewest resources (Hillman et al., 2024).

Adequacy studies are an emerging and underdeveloped area of higher educaition research. The first step for any useful adequacy study in higher education is to define the appropriate outcome to be deemed "adequate." This is challenging because higher education is a "multi-product" firm that produces a wide range of outcomes including research, public service, economic impact, and credentials (Winston, 1999). Adequacy studies require researchers to identify a single measurable outcome (e.g., standardized test scores) to then determine the financial resources necessary to improve that outcome across schools. The standards-based reform movement in K-12 education has resulted in test scores and other common measures researchers can use to calculate whether funding is "adequate." But in higher education there is a high degree of variation in academic missions, institutions produce multiple outcomes, and there is no equivalent to standards-based reform. As a result, efforts to measure "adequacy" in higher education require researchers to address these complexities, which can be challenging given the lack of standardization in the field.

IMPLICATIONS FOR HIGHER EDUCATION

LEGAL IMPLICATIONS

Litigation has not resulted in widespread finance reform in higher education, but voluntary interest holds promise.

Historically, the judicial system has been at the center of K-12 finance reforms. Either through lawsuits or the threat of lawsuits, legal forces have compelled states to address equity and adequacy in their funding models. In higher education, courts have played an important but comparatively smaller role in compelling states to reform their funding practices. In both K-12 and higher education, courts are wrestling with issues of fairness and determining whether particular groups of students are disproportionately harmed by state funding models. However, K-12 contexts have a long and far more developed history of litigation dealing with "adequacy" and "equity" than higher education.

In higher education, the legal battles around funding fairness come from desegregation cases or focus on state matching grants for 1890 Land-Grant Universities (Brown, 1999; Harris, 2021). As a result, cases have been largely concentrated at Southern HBCUs with a clear legal history of discrimination. These cases are resource intensive, take decades to resolve, affect change for one institution at a time, and seldom result in enough funding to overcome historical disparities. The remedies of these cases tend to focus on capacity building or otherwise compensating for past funding disparities. These efforts have not resulted in wholesale reform of entire state funding models.

Instead, the emerging interest in equity and adequacy in higher education funding is largely voluntary (Blake, 2024). Proactive efforts have followed from state attainment goals and workforce development, performance-based funding, and evidence of inequities in student outcomes. For example, Texas's recent funding formula was prompted by the Commission on Community College Finance's recommendation that the "new model must ensure that small and rural-serving colleges with lower property values have the resources needed to serve students inside and outside their service areas and to meet local employers' workforce requirements" (Texas Commission on Community College Finance, 2022, p. 7). Additionally, the Texas Higher Education Coordinating Board's 2022-2030 strategic plan acknowledges that the state will be unable to meet attainment goals "if we're not advancing our goals equitably," particularly in relation to the growth in racial diversity in the state (Texas Higher Education Coordinating Board, 2022, p. 5). In the absence of court-ordered actions, any effort to make funding more equitable or adequate in higher education will rest with state legislatures, governor's offices, or higher education agencies taking on this work themselves. Whether they achieve greater equity or adequacy will be an answerable question in due time.

ECONOMIC IMPLICATIONS

Efforts to make higher education funding more equitable or adequate need to account for the full scope of activities and revenue, including tuition.

K-12 schools have a far less diverse revenue portfolio than institutions of higher education. Most of K-12's revenue is from state and local sources, while these sources vary considerably for higher education. Some have argued community colleges are the most similar to K-12 schools because both types of institutions receive large shares of funding from state and local sources. However, this corollary quickly fails because community colleges—unlike K-12 schools—rely on tuition. Tuition accounts for 44% of operating revenue and 11% of total revenue at two-year colleges (NCES, 2022). The revenue differences in K-12 and higher education only get starker as we compare K-12 schools to comprehensive and research universities. As a result, any effort to make funding more equitable or adequate in higher education must account for the role of tuition (and other sources of) revenue. This does not make it impossible to apply concepts of adequacy or equity in higher education; rather, it adds a complication unaccounted for in existing K-12 policy debates.

Additionally, the sheer size of colleges and universities is considerably larger than K-12 schools. This means economies of scale are likely very different in higher education contexts than they are in K-12. Some states use weights to adjust formulas based on school size, and this is likely necessary in higher education. And because higher education is a "multi-product firm," the outcomes and outputs of higher education are far more diverse than K-12. As a result, existing K-12 funding models may not sufficiently capture the full range of activity taking place within institutions of higher education. There is not yet a consensus on how best to account for these economic differences between K-12 and higher education funding models.

Despite these fundamental differences, there is a corollary in K-12 and higher education with respect to cost-sharing (or "equalization") strategies in K-12 that higher education can—and has—learned from. For example, K-12 policies demonstrate the importance of addressing inequalities across revenue sources by using state dollars to equalize local disparities. This strategy is already being used in higher education, particularly for community colleges. Policies in K-12 also recognize that equality is not necessarily equity, and there may be good reasons to allocate different levels of resources per student. In particular, many state funding formulas include weights so students and schools with greater need receive greater resources (Carey, 2002).

MEASUREMENT IMPLICATIONS

Higher education does not have clear consensus for measuring resources or specifying goals for student outcomes.

How would a state know if their higher education funding system is "inadequate" or "inequitable?" This question is at the core of any discussion taking place in states, yet there is no consensus on an answer. Some analysts are applying the "cost-function" approach from K-12 to higher education, but it is unclear how well this approach maps to higher education contexts. For example, adequacy is typically defined in terms of resources needed to reach a specified outcome. In higher education, there is no consensus on how best to measure the "resources needed" or on what "specified outcome" is most appropriate for use. In K-12, there is a general consensus that per-pupil expenditures are the necessary resources and proficiency levels (typically measured on standardized tests) or graduation rates are the desired outcome. In higher education, students often enroll part-time making it unclear whether resources should be measures per headcount or on an FTE basis—or if equity should be considered at the institution-level rather than the student-level. Similarly, it is unclear "which" expenditures should be included when determining adequacy/equity. For example, should the focus be on auxiliaries, research, hospitals, and public service expenditures or only on instructional expenses? And what outcome(s) should these resources be linked to?

Because adequacy and equity are still new concepts in higher education funding debates, these questions are unanswered in the literature, making it difficult to find a meaningful corollary with K-12 contexts. These unanswered questions should not prevent higher education from exploring how these concepts might be applied and used in meaningful ways. It is unlikely a K-12 measure would be immediately transferrable to higher education, but perhaps there are elements or other features of a particular metric that could prove useful.

For example, instead of using total expenditures, perhaps "education and general"[2] expenditures would be more relevant to higher education (State Council of Higher Education for Virginia & NCHEMS, 2022). Similarly, instead of comparing community colleges or public universities to one another, researchers could compare institutions of similar Carnegie Classifications or other mission-specific categories to determine adequacy levels. And instead of treating higher education as a "black box," adequacy studies can help pinpoint the specific programs, resources,

[2] Education and general expenditures include instruction, academic support, student services, institutional support, operations, scholarships, public service, and research while excluding auxiliary services, hospitals, and independent operations.

practices, and conditions necessary for improving college student outcomes (Fulcher Dawson et al., 2020), as exemplified in recommendations from the Illinois Commission on Equitable Public University Funding (2024). Considering the diversity both across and within institutions of higher education, existing K-12 approaches to measuring equity and adequacy should be informed by higher education finance literature/research and adapted accordingly if they are to be useful in higher education settings.

CONCLUSION

Funding reforms in K-12 education have wrestled with the thorny concepts of "equity" and "adequacy" for decades. Higher education is now entering into this space and this literature review helps draw three distinctions between the two sectors. First, the legal context between K-12 and higher education is substantially different. Courts typically compel states into reforming their K-12 funding models while, in higher education, where there is less statutory language around funding adequacy, the courts' role has so far been limited. Second, fundamental differences in the economics of K-12 and higher education—primarily related to revenue sources and economies of scale—present challenges for applying K-12 funding concepts directly to higher education. And third, the methods for analyzing equity and adequacy in K-12 cannot be used "right off the shelf" but instead may be useful with certain and careful modifications.

Despite the significant differences between K-12 and higher education, this review also found promising similarities. For example, the need for greater financial resources is considerable, and when students have more resources available, they tend to achieve stronger outcomes. Funding models are a promising way to ensure institutions with the greatest needs can benefit the most from limited state (or local) resources. Additionally, courts have played a significant role in compelling states to take action and there may be opportunities for further court involvement in the future, particularly where HBCUs have been systematically underfunded. In K-12, decades of court cases have helped the field define, measure, and ultimately use funding models to address educational inequities. Finally, as states experiment with different approaches to funding reform, researchers can monitor these efforts and eventually determine whether certain approaches are more effective than others.

We addressed the themes most relevant for developing measures and identifying policy levers, but other comparisons between higher education and K-12 should be explored in future work including the politics, social contexts, and governance arrangements. Additionally, we have focused on the state's role, but the federal government has played a strong role in equity funding in K-12, particularly for low-income students and students with disabilities (e.g. Title I, IDEA) and is beginning to pressure higher education as well (U.S. Department of Education, 2023).

As a field, we have a long way to go and, in many respects, this literature review serves as a starting point to help the higher education community anticipate some of the opportunities and challenges of using funding models to improve opportunities and outcomes.

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