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THE IMPACT OF COMPETENCY-BASED EDUCATION ON
EDUCATIONAL EQUITY

by

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A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Education
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in the College of Community Innovation and Education
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ABSTRACT

For centuries, minority groups, students from low socio-economic background and girls in public schools especially K-12 educational institutions in the United States, have experienced prejudice, injustice, and bigotry.. Unfortunately, the conventional approach of education, based on a one-size-fits-all approach, has failed to deal with these obstacles. In the past decades, however, there has been an increasing demand for the adoption of the Competency-Based system of education, a personalized learning approach that focuses on the acquisition of concrete skills rather than abstract knowledge. In a Competency-Based model, students advance based on the demonstration of mastery of knowledge and skills other than the amount of time spent learning. Many researchers have argued that equity is at the core of Competency-Based Education, yet critics opine that competency-based education will rather deepen inequity. The purpose of this study is to provide an in-depth understanding of how competency-based education can enhance equity in K-12 classrooms in the United States of America. Through a rapid review, the extent to which competency-based education can enhance equity in K-12 classrooms in the United States will be evaluated. This review could serve as a guide for further research on competency-based education and equity, and how competency-based education may be used to increase equity in the teaching and learning process in K-12 schools.

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CHAPTER ONE INTRODUCTION

Background of the Study

The term educational equity includes guaranteeing just outcomes for all students, elevating disadvantaged voices, and exposing power and privilege imbalances (Great Schools Partnership, 2022). Educational equity aims for a fair and just system where both students and teachers are successful (Lopez et al., 2017). Some researchers argue that the current one-size-fits-all K–12 approaches to education in the United States were never designed to meet this need (Patrick, 2021). In recent years, there has been increasing demand for Competency-Based Education (CBE) as a model for enhancing quality and equity in education. CBE is an innovative teaching approach in K–12 schools that has as its goal to equip students with skills and knowledge in a variety of subject areas and in a flexible educational curriculum tailored to each student's individual needs to better prepare them for the challenges of the future (Casey & Sturgis, 2018; Levine & Patrick, 2019; Lopez et al., 2017). The National Equity Project (n.d. as cited in Lopez et al., 2017) states:

Educational equity means that each child receives what he or she needs to develop his or her full academic and social potential. Working toward equity involves:

- Ensuring equally high outcomes for all participants in our educational system.
- Removing the predictability of success or failure that currently correlates with any social or cultural factor;
- Interrupting inequitable practices, examining biases, and
- creating inclusive multicultural school environments for adults and children; and

Discovering and cultivating the unique gifts, talents, and interests that every human possesses (p. 26).

Researchers have viewed CBE as a teaching strategy that supports personalized learning, reshaping the culture, structure, and pedagogy to let students take an active role in their education and hence enable all students to reach their potentials (Evans et al., 2020, Lopez et al., 2017). Sullivan and Downey (2015) in their paper about shifting educational paradigms noted that:

As our nation becomes increasingly diverse, and if grade-level academic achievement for all students is the goal of our educational system, the design and delivery of curriculum and assessment must become responsive to the needs of all learners, at-risk or otherwise (p. 5).

Scholars have highlighted several themes associated with the competency-based educational model in K–12 education. For example, implementation (Evans et al., 2019; Grus et al., 2016); challenges (Goldman et al., 2017; Gruppen et al., 2016); and definition (Gervais, 2016; Frank et al., 2010).

Increasing demands for educational equity and social justice in K-12 classrooms in the United States and across the world has led policymakers and educational stakeholders to question the traditional teaching method as an effective approach to guaranteeing educational equity. Increasingly, CBE is being seen as an effective model that not only ensures quality but also promotes equity. However, some have raised concerns that CBE may rather deepen than reduce inequality (Lewis et al., 2016; Schneider, 2016; Ward, 2016). The findings of this study will help shed light on the effectiveness of CBE in enhancing equity in K 12 education.

Problem Statement

One of the most serious challenges facing contemporary teachers is educational inequity (Dover, 2009). In the U.S. there exist what some scholars refer to as an “achievement gap” between students of various races, socioeconomic background, and gender (Lee, 2014., There are low high school graduation rates for black males (Lynn et al., 2017; and Harper & Kuykendall, 2012), access to challenging course work for lower-income students (Kanno & Kangas, 2014;) and lower rates of engagement of female students in the classroom (Michell et al., 2018). Lopez et al. (2017) opine that these inequities have changed what society and students expect from education, affecting what educational systems must offer. They argue that the conventional public school system was not created with this environment or these expectations in mind. Research by Casey and Sturgis (2018) support this view by arguing that the time-based, one-size-fits-all curriculum delivery system is not as effective as it should be if the success of all students is to be guaranteed. They stated that:

...the traditional system was designed to rank and sort students through a combination of practices: curriculum based on age without regard for students' previous experiences, grading policies that inflated or reduced grades based on behavior, educational pathways that set different expectations for students based on their perceived ability or identity and promoting students to the next grade level with Cs and Ds at the end of each year without concern for the fact that they had not learned what they needed for more advanced learning (p. 1).

Over the past few years, an increasing number of schools and districts in the United States, have adopted competency-based approaches (Lopez et al., 2017). While many researchers have

found that CBE has the potential to be a particularly effective strategy for promoting equity (Lopez et al., 2017; Casey & Sturgis, 2018; Levine & Patrick, 2019), critics argue that it will exacerbate educational and, by extension, socioeconomic inequity by allowing the already rich to tailor and accelerate their education while the disadvantaged languish in workforce training disguised as higher education (Steven C. Ward, 2016, and Schneider, 2016, as cited in Navarre Cleary & Breathnach, 2017). To gain a deeper understanding of how CBE may promote equity a review study is needed.

Purpose of the Study

The steady increase in the number of schools and school districts implementing the competency-based model across the United States has led to multiple studies focused on how the model compared to the conventional education model in ensuring equity in K-12 classrooms. While several studies have attempted to assess how well CBE is being implemented in K-12 classrooms by focusing on the facilitators and challenges that impact its implementation, the efficacy of CBE in promoting equity is often overlooked. In an attempt to examine CBE from an educational equity perspective, this research will articulate how CBE can influence equity in the classroom. This study seeks to determine what the body of literature tells us about how the CBE model can transcend the history of bias, bigotry, discrimination, and oppression that has molded K-12 education and achieve educational equity. Using a rapid review method, I will evaluate the extent to which the CBE model can promote equity in K-12 classrooms in the United States.

Research Question

The following question will guide the research: What does the existing literature tell us about how CBE has affected educational equity in K-12 classrooms in the United States over the past 12 years?

Methodology

A systematic literature review using the principles and guidelines of PRISMA was conducted (Moher et al. 2009). Due to time constraints, I decided to use a rapid review over other forms of systematic literature reviews (Xiao & Watson, 2017). A rapid review is a methodological approach to a systematic review that involves speeding up the process of evaluating a body of literature while balancing time constraints and bias factors (Tripney, 2021). This was done in this study by hastening the database search procedure and skipping the quality assessment step entirely. Though this method is less ambitious than a thorough systematic review, attempts were made to minimize bias and guarantee accurate reporting. The inclusion and exclusion criteria were set to cover research on CBE and equity in the context of K-12 education in the United States, published between January 2010 and August 2022. I used five selected collections of electronic databases: ERIC, Science Direct, Jestor, Web of Science, and Google Scholar to search. Several different search phrases for "Competency-Based Education" were paired with terms relating to "equity" after collecting data from identified studies, I concluded by comparing similarities and differences among research using the PRISMA reporting format (Xiao & Watson, 2017).

I chose the rapid review approach because it is a more efficient alternative to a comprehensive systematic review and can be done within a shorter time frame.

Significance of the Study:

Although several studies have indicated that CBE has the potential to promote equity, especially in K–12 education, (Lopez et al., 2017; Levine & Patrick, 2019; Evans et al., 2020, Sullivan and Downey, 2015) a review study is needed to serve as a guide for how CBE might be applied to promote equity in the teaching and learning process in K–12 educational settings. Application in this context means... Additionally, knowing the trends and traits of successful implementation of high-quality Competency-based teaching and learning in K–12 education could enable researchers, practitioners, and policymakers in planning goals and strategies for K–12 educational settings. This could in turn increase the learning potential of students so that they can thrive beyond their grade levels; ensuring that they develop higher order skills; It could also help researchers and practitioners plan for future studies. A review study, in particular, enables beginning researchers to have a comprehensive understanding of the topic they wish to pursue.

Keywords

Competency-Based Education, Educational Equity, Diversity, Inclusive education, Multicultural education, Outcome Based Education, Personalized Learning, Proficiency-Based Education, Social justice, and Student-Centered Learning

Summary

For centuries, schools such as K-12 educational institutions in the United States, have witnessed prejudice, injustice, and bigotry (Lopez et al., 2017; Casey & Sturgis, 2018; Levine & Patrick, 2019). Many students have faced educational obstacles based on gender, race, language, and disability. Though within the traditional system of education in the United States there are some special programs for students with disabilities and language difficulties, its unfortunately is based largely on a one-size-fits-all approach. Hence it has to a large extent failed to deal with these obstacles. In the past decades, however, there has been an increasing demand for the adoption of the CBE, a personalized learning approach that focuses on the acquisition of concrete skills rather than abstract knowledge. According to Lopez et al., (2017), a competency-based structure guarantees that students achieve proficiency at every step of the process-on each standard, unit, course, and performance level. Lopez et. al., further states that systems for generating reliability are embedded within competency-based structures to ensure students' progress when they are ready, i.e. when they have mastered content and skills, rather than when they have reached a certain age, demonstrated a fixed amount of "seat time," or performed a one-time task. Though many researchers have argued that equity is at the core of CBE, yet critics opine that CBE will rather deepen inequity. These critics argue that by enabling the already privileged to personalize and expedite their education while the disadvantaged languish in workforce training that passes for higher education, CBE will exacerbate educational and, by extension, socioeconomic inequity (Navarre & Breathnach, 2017).

The purpose of this study is to provide an in-depth understanding of how CBE can enhance equity in K-12 classrooms in the United States. Through a literature review, the extent to which

CBE can enhance equity in K-12 classrooms in the United States will be evaluated. This review could serve as a guide for further research on CBE and equity, and how CBE may be used to increase equity in the teaching and learning process in K-12 schools.

CHAPTER TWO LITERATURE REVIEW

In the previous chapter, I showed that the traditional educational system has failed to guarantee the success of every student. This chapter will focus on the review of relevant literature. Many studies have been undertaken to illustrate what CBE is and how it is implemented to ensure that all students receive a high-quality education. This review will focus on five significant themes that appear regularly across the studied literature. These themes are the definition of CBE, how it relates to other innovative pedagogical methods, the concept of equity, how CBE may be used to improve equity, and the various strategies utilized in CBE implementation. Although these themes appear in the literature in a number of contexts, this study will primarily focus on their applicability to educational equity.

Many educators and policymakers are reaching the same conclusion across the United States: the old system's structure creates a barrier to equity (Sturgis & Casey, 2018). Every year, an increasing number of schools in the United States are implementing CBE at a deeper level. At this level of implementation, students are highly engaged with learning experiences in which they use acquired skills and knowledge to develop higher order skills. The Hewlett Foundation defines deeper learning as six competencies: mastery of essential academic content, critical thinking, and the ability to solve complex problems, collaboration, effective communication, learning how to learn, and the development of academic mindsets (Hewlett Foundation, 2017). This significant change in school culture, organization, and pedagogy aims to ensure the success of every student while addressing the fundamental flaws in the traditional system (Levine & Patrick, 2019).

The foundation of CBE is the idea that since the traditional educational system's culture, structure, and pedagogy were created to classify students, they must be replaced with ones that are created to ensure that every student may succeed (Lewis et al., 2014). To prove that the implementation of CBE is successful, it must include efforts not only to improve learning quality, but also to ensure that students from all socioeconomic, racial, ethnic, and linguistic background, as well as those with disabilities, are supported in attaining key academic standards that will prepare them for a productive life beyond graduation. The primary goal of this study is to determine whether there is enough evidence that the introduction of CBE resulted in this outcome.

However, it became clear during the course of this study that various secondary issues must be addressed before tackling the issue of determining the effectiveness of CBE in enhancing equity. The first of these issues is whether previous research on CBE has similar themes or definitions. Second, does CBE relate to other similar approaches such as student-centered learning, personalized learning, and proficiency-based education, or is it diametrically opposed to these approaches? The third issue could be stated as follows: what strategies have been used in the implementation of Competency Based Education? The fourth issue is whether suitable evaluative measures of Competency Based Education are available to assess its effectiveness. Before assessing whether there is compelling evidence that employing the Competency Based Approach helps in educational equity, these preliminary questions must be answered. This line of inquiry provides the framework for this review of relevant literature.

The History of Public Schools in The United States

The first step in understanding how CBE can influence equity in public schools in the United States, is to briefly examine the history of inequity in these public schools. According to a publication by the Center on Education Policy, (2020), Thomas Jefferson, John Adams, and other early leaders suggested the establishment of a more formal and unified system of publicly sponsored schools shortly after the American Revolution. The publication further stated that despite the fact that certain Northeastern municipalities had created publicly sponsored or free schools as early as the 1780s, the concept of free public education did not become widespread until the 1830s. Thattai (2014) on his part stated that until the 1840s, only the wealthy could afford the extremely localized education system and that education for black children remained extremely low until Lincoln issued the Emancipation Proclamation Act in 1863. Thattai added that in the 1950s, racial segregation in public and private schools was still prevalent in the United States. He however mentioned that racial segregation in public schools was declared unlawful by the Supreme Court in the *Brown v Board* case of 1954 and that by 1980, federal courts had mostly succeeded in ending authorized segregation in southern schools. There equally has been a history of educational discrimination against women in American schools. Even in coeducational schools, girls were given little encouragement (Thattai, 2014).

Historical Definition of CBE

In addition to the brief history of inequity in American public schools, an analysis of the important elements of the early CBE movement is necessary for an understanding of how CBE

influences educational equity. According to Evans et al., (2019), the CBE movement in the 1970s and 1980s sought to transform educational systems and the teaching and learning process in ways that will enable students to learn challenging academic materials if only time management was flexible enough to give slow learners extra time and support to meet the same performance standards as others. In light of this issue, some researchers argued that finding a proper definition and characteristics of CBE as it was being used in K-12 schools was challenging. (Evans et al., 2019). Spady & Mitchell (1977) agreed with this assertion and noted that most of these regulations and strategies diverge significantly from the detailed theoretical definition of CBE provided by Spady (1977).

Spady (1977), defines CBE elaborately as "a data-based, adaptive, performance-oriented set of integrated processes that facilitate, measure, record and certify within the context of flexible time parameters the demonstration of known, explicitly stated, and agreed-upon learning outcomes that reflect successful functioning in life roles" (p. 10). The six essential elements of CBE are results, time, instruction, measurement, certification, and program adaptability (Spady, 1977). Spady contended that when these elements are combined, they provide a detailed and comprehensive description of a typical CBE curriculum that goes beyond the strict necessity of students' mastery of fundamental skills.

In describing CBE, Glick, Henning, and Johnson (1975) used a theoretical approach. With this method, a theoretical definition of CBE was established and used as a benchmark for evaluation of its implementation. According to these authors, the foundation of CBE is the idea of mastery learning. They created a model that, using the CBE framework, described classroom behavior. The six principles of this model were listed in the following order: Environmental

analysis, student assessment, performance objectives, selection of instructional strategy, evaluation, and recycling or moving on. According to Spady (1977), this method involved deriving a definition from a set of meanings or circumstances that were assumed to exist.

Moreover, Spady and Mitchell (1977) mentioned that CBE will not have the desired outcome if it is employed primarily as a tool to enhance control over students' and teachers' performance. They argued that in order for CBE to be implemented successfully, learning opportunities without a direct connection to clear competency goals should not be created. The majority of research conducted during this time revealed that mastery-based curricula had a beneficial impact on students' academic performance in elementary and secondary school, and they had an even greater impact on underachievers (Anderson, 1994; Block and Burns, 1976; Gusky & Gates, 1986; Gusky & Pigotts, 1988; Kulik et al., 1990; & Slavin, 1987;)

However, Spady (1978) questioned the sustainability of the reforms because they required educators and the general public to abandon decades-old habits and presumptions about the organizational principles and practices of education, just as accountability appeared to be more cost-effective and secure than alternative school reforms.

Current empirical studies have found that learning modules were an optional element in a CBE model, contrary to earlier literature that claimed learning modules were a common component of CBE. In current discourse on CBE, there has been much focus on the elimination of seat-time. However, Sturgis et al. (2011) opine that the elimination of sitting time is not the only aspect of competency-based learning. According to the authors, getting rid of seat-time without replacing it could even make inequality worse. A learning-based or competency-based system that is completely aligned with students and what they require to advance academically must take the

place of the time-based approach (Sturgis et al., 2011). Drawing from the 2011 Competency-Based summit, Sturgis et al. highlighted five components that constitute the working definition of competency-based learning approaches:

- Students advance upon mastery.
- Competencies include explicit, measurable, transferable learning objectives that empower students.
- Assessment is a meaningful and a positive learning experience for students.
- Students receive timely, differentiated support based on their individual learning needs.
- Learning outcomes emphasize competencies that include application and creation of knowledge, along with the development of important skills and dispositions (p. 6).

They argue that to ensure equity and excellence, all five elements of the criteria must be successfully implemented.

According to a report by Levine & Patrick, (2019), the operational definition of 2011 made it possible for stakeholders who were working independently and using different terms for the same reforms—competency-based, mastery-based, proficiency-based, and performance-based education—to have a common understanding of the essential components of competency-based systems. The report asserts that schools have used it as a foundation for design and implementation, governments have used it to create supportive laws and a shared vision, and national organizations have used it to offer frameworks for networks of state networks to talk about their efforts.

Levine & Patrick (2019) however stated in their report that feedback from experts in the area shows that the original working definition should be modified to reflect a better

understanding of important challenges and advancements in the field, eight years after it was first developed. The updated definition, which is presented in their report, was therefore created with significant input from invited participants at the second National Summit on K–12 CBE in 2017 and from a technical advisory committee of more than 40 leaders and experts in the area (Levine & Patrick, 2019).

How Competency-Based Education Relates To Other Approaches.

CBE is typically combined with personalized and student-centered learning and is sometimes termed proficiency-based and performance-based education. Reif et al. (2015) opine that student-centered learning is the concept that is used to encompass personalized, and CBE. They went on to identify the four tenets of student-centered learning. These included learning is personalized; learning is competency-based; learning happens anytime, anywhere; and students take ownership. Many parts of the definition of student-centered learning overlap with those of CBE (Evans & Thompson, 2020). For instance, three of the four premises of student-centered learning (with the exception of "learning is customized") are utilized to describe CBE, as will be explained in greater detail below. Moreover, (Patrick et al., 2013) asserts that individualized learning and CBE are complementary. Personalized learning is characterized as a combination of four characteristics and strategies observed to varied degrees in educational settings. The definition of CBE provided in this study, aligns with the definitions provided by earlier scholars. Reif et al. define CBE as “the idea that students complete work at their own pace. In turn, they advance in their studies upon demonstrating mastery of relevant competencies and core knowledge, rather than according to age or seat time requirements.” (p. 15)

According to Evans & Thompson, (2020), CBE is frequently and erroneously described as proficiency-based education. A proficiency-based system is one in which standards are utilized to govern curriculum and instruction, and where student advancement and graduation are meant to be based on students' demonstration of proficiency in satisfying significant educational standards (Silvernail et al., 2013).

The Concept of Educational Equity

Ladson-Billings. (1995) approached the concept of educational equity from the perspective of “cultural pedagogy.” She maintained that pedagogy must meet three criteria: the ability to academically develop students, the willingness to foster cultural competency, and the development of a sociopolitical or critical consciousness. She also claimed that past sociolinguistic explanations failed to take into account students' broader social and cultural surroundings. Ladson-Billings went on to suggest that in order to problematize instruction and inspire teachers to inquire about the nature of the student-teacher relationship, the curriculum, schooling, and society, culturally relevant pedagogies should be created and used in classrooms. She also suggested that it is critical to help student teachers understand culture-both their own and that of others-and how it affects education.

On his part, Noguera. (2015), focused on the issue of race and education 60 years after the landmark *Brown v. Board of Education* decision (1954). He provided a theoretical framework for why context matters in terms of inequity. Noguera posited that notions of race and ability coincide in such a way that Black students (and other minority students) are more likely to be (mis-) classified as disabled. He further argued that these concepts of race and ability are built not only

at the individual level, but also in relation to the environment. He concluded by stating that this approach has broader implications for educational equity that influence how the society see segregation and integration (Noguera, 2015).

Sturgis and Casey, (2018), focused more on the definition of educational equity. To them, an equitable educational system in the U.S. was one in which both students and teachers are successful. To them, the definition of success extended beyond stressing comprehensive coverage of academic subjects and determining student success based on basic proficiency and/or credit completion. They also contended that student achievement entailed more than a certain number of credits or passing a state exam. They suggested that success in college, career, and life necessitates transferable skills as well as skills and dispositions that foster lifelong learning. They also stated that it is necessary to openly address the history of prejudice, oppression, and bigotry that has affected societies and institutions, including United States' K–12 educational system, and that still does so now in order to achieve educational equity. They went further to suggest that educational equity guarantees that every student will attain their full potential by constructing an educational system that reacts to pupils in order to ensure that they are developing the skills they will need in the future. The article also argues that to fulfill this commitment, we must first believe that all kids can achieve the same high standards of preparation for college, work, and life. Sturgis and Casey, (2018) state:

From here, equitable systems actively seek to identify a student's unique set of experiences, strengths, needs, identities, and passions, and use these as assets in the work of helping students to meet these expectations. Thus, educational systems need to have the capacity to meet students

where they are: schools need to have flexibility in order to provide the support necessary for students to achieve success (p. 4).

Lopez et al. (2017) equally attempted a definition of education equity. They noted that equity is based on the idea that everyone gets what they need to succeed, rather than everyone getting the same thing. Lopez et al., went on to suggest that schools with an equity culture must give teachers the opportunity to get to know their students as well as the freedom to respond to them. They argue that building strong trusting relationships between individuals that can encourage dialogue, reflection, and learning is the foundation of an equity culture. They concluded that schools that are establishing an equity culture use a set of specific tactics to embed cultural responsiveness and universal design for learning concepts in their teaching principles. Similarly, they use structures and processes like continuous improvement to eliminate bias and institutional practices that lead to unfairness (Lopez et al., 2017).

CBE and Equal Access to Quality Education

Other researchers in the field of CBE have examined how the CBE approach could be used to enhance equity in education (Krauss 2017; Sturgis, & Casey 2018; Lopez et al. 2017). Sturgis and Casey argue that CBE had the potential of becoming a distinctly powerful model for enhancing equity, but indicated however, that this could only be possible if equity is an intentional design feature embedded in the culture, structure, and pedagogy. Sturgis and Casey emphasize that CBE provides the most effective framework for achieving equity. This according to the authors, is because the CBE provides equal opportunity for all students to master knowledge and higher-order

skills and a set of lifelong learning skills. Comparing CBE with traditional education systems, they argue that irrespective of how the curriculum, program, or instructional strategy of traditional education developed, it was never designed to have all students succeed.

Lopez et al. (2017), also examine the aspect of equal access within the Framework of CBE. They reported that though schools have discovered and introduced new ideas, strategies, and entry points within the framework of CBE, these innovations in themselves, do not necessarily guarantee greater equity and quality in education. Lopez et al. stated that:

we are entering a new stage that requires a robust commitment and vigorous intentionality toward creating the culture, structure, policies, and instructional practices that will produce schools that fully support every student in their journey toward preparation for college, career, and life. (p. 2)

They posited that designing for equity is the surest means by which an educational system that is equally effective for every student can be created. The authors identify four key issues which they claim will enable CBE to enhance and sustain equity and quality in education. These issues include equity, quality, meeting students where they are, and policy. The study makes the case for the importance of all four key issues, how they relate to each other, and suggested ideas on how each one of them can be approached. Lopez et al., contend that realizing the educational goal of preparing all students to be lifelong learners and fully equipped for the transition to college and profession necessitates the development of an equity-focused educational system. Equity is a moral necessity as well as a CBE system that provides a uniquely potent platform for preparing all students for what comes after high school – college, profession, and life.

Krauss (2017) also examines CBE from the perspective of equal access to quality education. She examines how CBE can be used to educate, equip, and empower students “who struggle in postsecondary learning programs because of who they are and where they live” (p. 2). Her paper offers recommended entry points, places, and programs that will enable implementers of CBE to better understand when and how they can prioritize equity. The paper begins by identifying three learner populations for CBE to prioritize. These include learners of color, adult learners who are unemployed or underemployed, and adult learners with some post-secondary education but no credentials.

CBE Implementation Strategies:

Considering that CBE is a relatively new approach to teaching the bulk of studies in the field focus on implementation strategies. In most of the literature reviewed, a lot of emphasis is placed on measuring outcomes, rather than sit time. O’Sullivan and Burce (2014), suggest that competency-based instruction needs to be matched to domains of learning like psychomotor, affective domain, and cognitive domains. They offer a range of different strategies which they argued is very effective in the implementation of CBE. One of these strategies is the self-study modules which the authors suggest will include a variety of learning activities that students are expected to study on their own before engaging with other learners. O’Sullivan and Burce recommend direct observation of the demonstration of competency over time. They concluded that students learn at different rates and in different ways. Going by their findings, a couple of activities may be enough for one student to demonstrate competence, though another student may require much more time to achieve the same learning outcome. For this reason, therefore, the authors

emphasize how important it is for teachers to have a full understanding not only of each student but of the learner's interest.

A few other studies focus on the perception of school administrators in the implementation of CBE (Evans et al., 2019; Sullivan & Downey, 2015). Sullivan and Downey carried out a qualitative study based on interviews with school personnel to document perspectives regarding the motivation behind the shift to CBE, the challenges faced, as well as successes in its implementation. Their findings revealed three key factors that influenced the shift to CBE. Sullivan and Downey suggest that “federal and state mandates combined with the district's Long Range Strategic Plan, a catalyst with the vision and enthusiasm to guide program change, and a common moral purpose propelled the changed” (p. 11). The study also found a lack of communication, time constraints, and alignment concerns as some of the major challenges in the implementation of CBE. Meanwhile, Student and teacher engagement and increased academic rigor were established as major successes of the CBE.

Though the research concluded that CBE contributed to an increase in academic rigor, they failed to include a baseline study of standardized test scores between the traditional and CBE program, which would have provided a better understanding of the impact of CBE on students learning outcomes.

Summary

The purpose of this chapter was to review relevant literature on CBE. It examined the five important themes that appear repeatedly across the literature and assessed its applicability to educational equity. It is clear from the research reviewed that several studies have examined the

definition of CBE as well as made findings on the relationship between CBE and other innovative pedagogical approaches such as student-centered learning, personalized learning, and proficiency-based education. A few studies have examined the concept of equity. It is also clear from the existing literature that there is a great amount of research on the implementation strategies of CBE, but there seems to be a lack of research connecting CBE to equity. There is therefore the need for further research that will investigate how CBE can enhance equity. For example, does the adoption of a CBE approach help overcome the history of inequity in education? This study will contribute to filling this existing gap. The next chapter outlines the methodology that has been used in the study.

CHAPTER THREE: RESEARCH AND DESIGN

Having briefly examined the history of public schooling in the U.S. and themes in the literature on CBE, this chapter describes the methodologies used in data collection and analysis that are relevant to the research. The chapter will cover topics such as description of a rapid review and why it is an important methodology for this study, the population sample, research instrument, the type of data, data gathering methods, and data management. The main purpose of this rapid review is to identify relevant studies and what they tell us about how the CBE model enhances equity, in K-12 settings in the United States. Owing to time constraints and considering that rapid review is the most suitable method for new or developing research topics such as this one (Khangura et al., 2012), I decided to use this methodology rather than several other methods of systematic literature reviews such as scoping review, narrative review, meta-analyses and mixed studies (Xiao & Watson, 2017). Rapid reviews are an efficient way to quickly synthesize evidence, typically to support the direction and provide the basis for more thorough research (Khangura et al., 2012). Table 1 (Taylor-Phillips et Al., 2017, P. 477) compares systematic and rapid reviews.

Table 1:

Comparative Table of Rapid and Systematic Reviews

Rapid Review	Systematic Review
Identification, selection of studies, screening, and data extraction:	
Electronic databases searched: ERIC, Science Direct, Jestor, Web of Science, and Google Scholar Narrow search terms.	Electronic databases searched: ERIC, Science Direct, Jestor, Web of Science, and Google Scholar Broader search terms.
Individuals and organizations were not contacted for studies not freely available publicly.	Individuals and organizations are contacted for studies that are not freely available publicly.
The reference lists of the included articles and systematic reviews were verified.	The reference lists of the included articles and systematic reviews were verified.
One reviewer read over the titles and abstracts of all records found through the searches.	Titles and abstracts of all records identified by the searches are independently screened by two or more reviewers. Disagreement is settled through full publication retrieval and consensus agreement.
Full copies of all studies deemed potentially relevant were assessed for inclusion by one reviewer.	Full copies of all studies deemed potentially relevant are assessed independently for inclusion by 2 reviewers. Disagreements are resolved by consensus and discussion with a third reviewer when required.
Records rejected at the full-text stage and reasons for their exclusion have been documented	Records rejected at the full-text stage and reasons for their exclusion are documented
Quality Assessment:	
All articles were reviewed by one reviewer.	All articles are reviewed independently by two or more reviewers, with discrepancies addressed by consensus or discussion with a third reviewer.

Rapid Review	Systematic Review
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Data analysis/synthesis:

A qualitative review of the articles was conducted, and the findings were analyzed and concluded.

A qualitative review of the articles was conducted, and the findings were analyzed and concluded.

Note. Adapted from “Comparison of a full systematic review versus rapid review approaches to assess a newborn screening test for tyrosinemia type 1” from Taylor-Phillips et Al., 2017, P. 477.

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Population/Sample

In this study, the researcher will review literature that focuses on K-12 students in the United States. Overall, 2,006 students, 153 teachers, 100 competency-based experts, and four educational officials participated in the 20 studies that were reviewed. Two of the four officials were former directors of the Idaho Mastery Education Network from the Idaho State Department of Education. The other two officials had similar positions on the Utah State Board of Education, where they were in charge of the state's Personalized Competency-Based Learning initiative. Clearly, these officers have great knowledge pertinent to the study. Further, the studies took place in 74 public schools, 34 classrooms and five school districts across the United States.

Research Instruments

To understand how CBE advances educational equity in K–12 settings, a rapid review in CBE was conducted (Wollscheid & Tripney, 2021), using the guidelines of the Preferred Reporting

Items for Systematic Reviews. (PRISMA) offered by Moher et al (2009). PRISMA is consistent with recent methodological recommendations for high-quality systematic reviews (Tawfik et al., 2019).

Data Collection Method

Inclusion and Exclusion Criteria

The criteria for inclusion were established to cover studies published between January 2010 and September 2022 on CBE and equity. To be included in this rapid review each study must have focused on primary or middle and high school (K-12). Since schools in the United States are organized and structured differently from those in other countries, only studies that were done in the American context were included to prevent the findings from being tainted by these differences. Also, only studies written in English were included. These studies include peer-reviewed studies, gray literature, issue briefs, and unpublished reports. Initially, I intended to include only literature that clearly described the research methods used in the acquisition of data for the study. My goal was to ensure that only quality research studies were captured. In the course of my search, however, I realized that there was not enough literature on the topic given its relatively new and/or developing nature and that this may result in a significant underrepresentation of relevant studies. I, therefore, decided to eliminate this criterion to enable me to include a large range of findings while lowering the risk of bias (Armitage & Keeble-Ramsay, 2009).

Excluded from this rapid review, were articles with a focus on CBE in higher education, nursing, and public health education. In terms of time frames, articles published before 2010

were excluded because I intended to capture fairly recent research trends in the implementation of CBE. Therefore, I focused on reviewing recent research at a time when there is an increasing switch to CBE. Articles not published in English and those that focused on educational systems outside of the United States were also excluded; articles from books, conferences, and dissertations, were not included. In addition, articles that did not address CBE with equity or social justice were not included. Table 2 shows the inclusion and exclusion criteria used in collecting data.

Table 2:

Inclusion and Exclusion Criteria

Inclusion	Exclusion
Focus of Articles: CBE and equity/social justice in the context of K-12 education.	CBE in higher and Public health education
Publication Date: January 2010-September 2022	Before 2010
Publication Type: Peer-reviewed articles, issue papers, reports, thesis/dissertations	Books and book chapters
Language: Articles are written in English	Articles are written in a Language other than English
Location: Articles About the United States K-12 education system	Articles with a focus on educational systems outside the United States

Search Terms

After deciding on the inclusion and exclusion criteria, the search terms were selected (Table 3). Given the ambiguity surrounding terminology, I tried to develop several terms that would encompass the convergence of the two main themes of this study- "CBE" and "Equity":

first, as shown in the left-hand column of Table 3, I identified terms related to "CBE," and second, as shown in the right-hand column of Table 3. I identified terms related to “equity”. I then combined the terms in both columns to make up the search strings ("Competency-Based Education" OR "Personalized Learning" OR "Outcome Based Education” AND “Equity” OR “Social Justice” OR “Fairness OR Inclusion”

Table 3:

Search Terms Used in Eric, ProQuest, and Google Scholar

Competency-Based Education OR	AND	Equity OR
Personalized Education		Social Justice
Outcome Based Education		Fairness
Proficiency-Based Education		Inclusion

I searched three electronic bibliographic databases: ERIC, JSTOR, and ProQuest as well as Google Scholar, among other significant research resources like the Journal of CBE. I also used reference lists from relevant research to conduct forward and backward searches for additional articles that met the search criteria.

Data processing and Analysis

There were 547 Journal articles and gray literature in total that were retrieved. First, articles written in languages other than English, those published outside the United States, duplicates, and those that were books or book chapters were removed because it was not possible to have access

to these online, leaving 115 for review. Following that, a manual evaluation of the paper title and abstract of each article was undertaken, and 54 studies that were not linked to CBE in K-12 education were deleted. Furthermore, after manually reviewing the full texts, 37 papers connected to competency education but not examining equity were deleted. Finally, this review study comprised a total of 24 articles. Eric, Google Scholar, and ProQuest were used to get 15, five, and four of the 24 articles, respectively.

A qualitative review of the articles was then conducted with a particular focus on the methodology used to gather data for the study. The research questions for each article were examined. Additional variables, such as the extent to which the article examined CBE and its impact on equity. The findings, of the 24 articles were synthesized and conclusions are drawn.

Limitations

This study was affected by some limitations. One of these was time constraints. Reviewing the bulk of the literature obtained required much time. As a result of using a rapid approach, I was able to conduct the review in a more expedited manner, while ensuring that the approach was as systematic as a standard systematic review and eliminating bias as much as possible. Also, given the fact that CBE and equity is an emerging topic, it was very difficult to find many empirical studies on the topic. Most of the studies were issue briefs and reports from organizations. In addition, access to several studies was not possible and may lead to a biased conclusion.

Delimitations

Although effort was made to limit the risk of bias, this study failed to comply with all the steps in the PRISMA guidelines due to time constraints and other factors (Wollscheid, & Tripney, 2021). For example, since this study is a master's thesis which requires that it be individual work, I single-handedly screened and verified the studies contrary to the PRISMA requirement for a second or third person verifying the quality of the included studies. However, to assure quality, the appropriateness of this rapid review methodology was thoroughly evaluated. The study was limited to K-12 education within the United States. The sampling size in this study was therefore limited to those accessible informants who were deemed to have knowledge and experience on CBE.

Summary

Using the guidelines and recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), a rapid review of studies on CBE was undertaken to determine its impact on equity. The search phrases were chosen to incorporate the study's two "major ideas": "CBE" and "Equity." I looked through three electronic bibliographic databases: ERIC, JSTOR, and ProQuest, as well as Google scholar. A qualitative analysis of the studies obtained was done, the findings were analyzed, and conclusions were reached. The next chapter therefore presents the results of the study.

CHAPTER FOUR RESULTS

After describing the methodologies used in collecting data this chapter presents and discusses the study's findings with emphasis on its purpose of determining whether the competency-based model positively influences educational equity in research on K-12 CBE in the United States. The main themes that emerged from this findings are Definition of educational equity, how CBE influences educational equity, and strategies to improve equity within CBE. The chapter begins with an analysis and synthesis of the data collected. It then presents the findings and concludes with a discussion of the findings.

Using a review protocol, data were extracted from 20 studies and unpublished reports covering K–12 students between 2010 and 2022 to ascertain whether CBE had a favorable impact on equity.

Data analyses

To extract data and evaluate the 20 studies, a review protocol was constructed using an adaptation of the format provided by Evans et al. (2020). The review protocol provides the following information: 1. the author and the year; 2. the content category; 3. the research design; 4. the keyword utilized in the study; and 5. the total number of participants. The content category indicates if the study was focused on how CBE influences equity, on the elements needed for CBE to enhance equity, or whether the study focused on policies. The content category also shows the type of study (empirical research or policy scan, that is, a survey conducted with the goal to identify existing policies in a specific area so that future program and policy work can be informed). Three

categories of research methodology were separated: quantitative, qualitative, or mixed methodologies. CBE, proficiency-based education, and/or personalized learning were among the significant phrases. A cross-tabulation of the number of studies that were reviewed by key terms, study methodology, and content category is shown in Table 4. Education that is competency-based generated the highest percentage of studies. The 20 studies that were examined used 77% qualitative research methods and 13% mixed methods. None applied a quantitative approach. Studies that examined how CBE influences equity were the most often coded content category (64%), followed by studies that examined both how CBE affects equity and components of the CBE model that support equity (24%).

Following a thorough evaluation of each study, the results, the quality of the research, and each study's unique responses to the review process were carefully scrutinized. The review protocol is listed in Table 5 and is arranged by key phrase. First on the list are studies that used "CBE," then "personalized learning." They are arranged by content type and year.

Table 4:*Cross Tabulation of Studies Reviewed by Key Terms and Content Categories (n = 20)*

Key Terms	Content Category	Influence		Support Strategy		Policy Focused		Influence & Support Strategy		Row Total
		Qualitative	Mixed	Qualitative	Mixed	Qualitative	Mixed	Qualitative	Mixed	
Competency-based Education	Policy Scan	1		1		2		2	1	7
	Empirical. Research.	3	1			1		2		7
Personalized Learning	Policy Scan	2	1	1						4
	Empirical. Research.			1	1					2
Column Totals		6	2	3	1	3		4	1	20

Note. Adapted from “Making sense of K-12 competency-based education: A systematic literature review of implementation and outcomes research from 2000 to 2019” from Evans et Al., 2020, P. 5. Copyright 2020 by Western Governors University

Table 5:*Summary Characteristics of Included Studies*

Author/Year	Content Category	Methodology	Key Terms	Number of Participants
(Babadogan & Açıkgöz. (2021)	CBE Influence on Equity	Qualitative (Empirical research)	CBE	N/A
Casey & Sturgis (2018)	CBE Influence on Equity & Support Strategy	Qualitative (Empirical research)	CBE	100 experts in CBE
Cuyacot & Cuyacot. (2022)	CBE Influence on Equity	Qualitative (Empirical research)	CBE	N/A
Evans et al. (2020)	CBE Influence on Equity	Qualitative (Systematic Review)	CBE	25 Studies
Marion et al. (2020)	Support Strategy	Qualitative (Policy Scan)	CBE	N/A
Levine et al. (2020)	CBE Influence on Equity & Support Strategy	Qualitative	CBE	N/A
Levine & Patrick. (2019)	CBE Influence on Equity	Qualitative (Policy Scan)	CBE	N/A
Lewis et al. (2014)	CBE Influence on Equity & Support Strategy	Qualitative (General Research)	CBE	N/A
Lopez et al. (2017)	Support Strategy	Qualitative	CBE	N/A
Navarre Cleary & Breathnach, (2017)	CBE Influence on Equity	Qualitative (Empirical research)	CBE	N/A
Patrick & Sturgis (2013)	Policy Focused	Qualitative (Policy Scan)	CBE	N/A
Steele et al.,(2014)	CBE Influence on Equity	Qualitative (Empirical research)	CBE	12 public Schools across 5 school districts

Author/Year	Content Category	Methodology	Key Terms	Number of Participants
Sturgis & Patrick. (2010)	Support Strategy	Qualitative (Policy Scan)	CBE	N/A
Williams et al., (2022)	Policy Focused	Qualitative (Empirical research)	CBE	4 Education Officials
Worthen & Patrick. (2014)	Policy Focused	Qualitative (Literature Review)	CBE	10 articles
Gross et al. (2018)	Support Strategy	Qualitative	Personalized Learning	3,800 Teachers 1,100 Students
Strekalova-Hughes et al. (2021)	Support Strategy	Qualitative (Policy Scan)	Personalized Learning	N/A
(Surr et al., 2018)	CBE Influence on Equity	Mixed (Empirical research)	Personalized Learning	892 Students 138 Teachers 30 Classrooms 4 Racially Diverse Classrooms
Pane et al. (2015)	CBE Influence on Equity	Mixed (Empirical research)	Personalized Learning	62 Public Schools
Phan, (2020)	Support Strategy	Mixed (Empirical research)	Personalized Learning	15 Elementary, Middle, and High Schools Teachers 14 Middle School Students

Note. Adapted from “Making sense of K-12 competency-based education: A systematic literature review of implementation and outcomes research from 2000 to 2019” from Evans et Al., 2020, P. 5. Copyright 2020 by Western Governors University

The researcher also determined how educational equity was defined or mentioned as being a result of CBE intervention or program for the findings of each research study. I determined from the studies if they include an analysis of strategies that can be employed to ensure that CBE is indeed realizing its goal of enhancing equity. The findings showed that though it wasn't part of the original definition of CBE, studies conducted before 2017 either mentioned or specifically focused on the problem of equity. Studies published after 2017 tended to focus on critical elements required for CBE to achieve its equity goal. Studies that were focus on policy implementation were very limited. Only three studies on policy implementation were found.

Findings

Definition of Educational Equity.

In most of the studies reviewed the definition of educational equity was absent, though all 20 studies mentioned the influence of CBE on equity. Five studies, however, provided definitions for educational equity (Casey & Sturgis, 2018; Levine & Patrick, 2019; Lewis et al., 2014; Lopez et al., 2017; Patrick & Sturgis 2013). Four of the five studies cited the definition of educational equity provided by the National Equity Project. (n.d.).

Educational equity means that each child receives what he or she needs to develop his or her full academic and social potential. Working toward equity in schools involves:

- Ensuring equally high outcomes for all participants in our educational system; removing the predictability of success or failures that currently correlates with any social or cultural factor.

- Interrupting inequitable practices, examining biases, creating inclusive multicultural school environments for adults and children; and
- Discovering and cultivating the unique gifts, talents, and interests that every human possesses (para. 1)

While Lewis et al. (2014) noted that this definition of equity offered a vision for a world in which all students thrive in addition to focusing on closing academic achievement gaps. Casey and Sturgis (2018) drew from and build upon the National Equity Project definition, identifying ten pillars of equity-focused, competency-based systems. One of the 10 pillars is termed *Interrupt Inequitable Practice*, and it makes the case that equity-oriented systems acknowledge, validate, and work to eliminate the processes of historical and institutionalized racial and socioeconomic oppression. They identified and took proactive measures to address the specific marginalization that students from minority communities have experienced.

Patrick and Sturgis (2013) claimed that educational equity was not just about equal access and input, but also about ensuring that students' educational paths, curriculum, instruction, and schedule are personalized to match their specific needs inside and outside of school. Educational equity meets all students where they are and helps them reach their full potential through a variety of tools and strategies tailored to their learning styles, abilities, and interests, in addition to their social, emotional, and physical circumstances.

How CBE Can Influence Educational Equity

Each of the 20 reviewed studies had findings related to how CBE affects equity in K 12 education. Most of the studies reviewed are consistent in stating that the approach will reduce

existing achievement gaps over time by closely monitoring student progress, encouraging personalization of learning to increase engagement, and assisting teachers in providing rapid, targeted support to keep students engaged. Levine and Patrick (2019), for example, indicated that CBE systems provide structures that increase the effectiveness of personalized learning, such as validation of proficiency based on student work, careful monitoring of pace and progress, and a deliberate focus on equity to ensure all students achieve the same high standards. They argue that these competency-based structures serve as the foundation for equity for all students, with the requirement that mastery is demonstrated by the evidence. These structures also ensure that personalization does not perpetuate historical, inequitable systems such as tracking (Levine & Patrick, 2019). Lopez et al., (2017) agree with this assumption and suggest that educational equity guarantees that every student will fulfill their potential by constructing an educational system that responds to students and ensure they are developing the skills they will need in college, careers, and life. They argue further that to fulfill this promise, it is necessary first to believe that the same high expectations (preparedness for college, profession, and life) are achievable for all students. Patrick et al. (2016) observed that personalized, competency-based learning guarantees that all students are held to the same high, international standards and are given the tools and support to meet those goals by making progress and moving on based on proving proficiency. Proving mastery before moving on to the next level, they claim, enables all students to lay a solid foundation for success.

In one of the studies by Pane et al. (2015), 65 public schools included. effect sizes (a straightforward method for determining the difference between two groups, typically to determine the efficacy of an intervention or educational practice relative to a reference group or method.),

as a common metric used by researchers to gauge the effectiveness of educational strategies, were used to analyze the effects of personalized learning on students' accomplishments. According to the study, there were positive effects on students' reading and math skills, and the lowest-performing students significantly improved in comparison to their peers. A significant portion of pupils with lower initial accomplishment levels showed faster growth rates than their peers, notably in mathematics, according to the study.

Other studies, however, raised questions about the effectiveness of CBE to enhance equity. For example, Lewis et al. (2014), examined these concerns through the lens of family income. Citing several studies, they argued that there may be a "rich get richer" and "poor get poorer" effect in a system where students must demonstrate their knowledge and skills to advance. They also suggested that those whose backgrounds give them access to a wider range of learning environments and who start school having already acquired more skills may continue to widen the gap between themselves and their less fortunate peers. They equally explored some scenarios in which CBE might unintentionally enhance inequity in outcomes and opportunities. The research specifically outlined three types of resources that are regarded to be essential to CBE's effectiveness and which may disproportionately help the most advantaged students. One of the resources mentioned is digital access and use. Lewis et al. state that:

Competency education, at scale, will benefit greatly from the appropriate use of high-quality learning management software to track competency and from access to digital learning tools, collaboration tools, and content that supports the personalization of learning experiences both during and beyond the traditional school day and year...With the importance of digital access and use in supporting competency education, students

coming from homes that encourage the use of technology will be at an advantage simply because those students do not need to acquire these skills in school (pp. 10-11).

Strategies to Improve Equity Within CBE

There were 11 studies that discussed the strategies to employ within a CBE system to enhance equity. A framework for how states, districts, and schools might create an equity agenda within their CBE systems was provided by Casey & Sturgis (2018). They recommended that states, districts, and schools that want to proactively eliminate inequality recognize the need for a variety of approaches to deal with the nature of unfair practices at various levels of the educational system, including individual biases and beliefs, instruction, and assessment, school design, and systemic policies and resource distribution. The framework provided a starting point for governments, districts, and schools to develop and integrate equity policies that consider their local contexts within competency-based, individualized systems.

On their part, Marion et al. (2020), focused on assessment as a key element in the competency-based model that can help enhance equity. They contend that CBE systems are incapable of achieving equity unless they are supported by effective assessment tools and methods. They indicated that leaders in schools, districts, and states must work to create balanced assessment systems that are consistent with learning progressions. This according to the authors must target competencies, that fully provide a range of evidence for each student and serve a variety of stakeholders, and continuously track students' development over time. For information to be provided at various levels of the system to monitor, assess, and advance equality agendas, balanced assessment systems are essential.

Worthen and Patrick (2014) contended that fair, equitable, and sufficient funding is necessary to give teachers and students the support networks they require to succeed, as well as ensure that students have access to high-quality, fully accessible blended and online learning models. They indicated that the shift towards highly personalized, mastery-based online and blended learning models will be enabled by blended and online learning pathways that will allow each student to customize learning trajectories toward college and career readiness. To drive this vision, the “digital divide” must be narrowed, and schools equipped with high-speed broadband connectivity.

Discussion

A critical question in this study was to examine whether the CBE model differs significantly from the conventional educational approach in terms of equity. That is, whether the two approaches differ substantially with regard to positively influence equity. Little research has been conducted in this area. There were very few studies that sought to compare the traditional teaching methods with CBE in order to determine how CBE influenced educational equity - only two primary studies were reported in the included studies (Lopez et al.,2017; Pane et al., 2015). It is important to highlight that only one of these studies had a study design that provided strong evidence.

Twenty studies on equity in CBE were found, but only a small number of them were of high enough quality (That is, studies that adhere to a scientific procedure encompasses all elements of research design, including methods and research questions, and clear measurement of results) to allow for definite conclusions. Therefore, the findings must be interpreted with care. The studies

examined in this review are consistent regarding the concept that CBE will contribute to closing the achievement gap, provided it is properly implemented, and the appropriate resources are made available, particularly to students from low-income households. Very limited empirical evidence was found to either support or disprove the assertion that CBE or personalization can help bridge the performance gap and improve equity, even though authors of the included studies generally agreed on this point. The majority of the studies under review either did not assess equity or did so as a secondary consideration, while most of the studies offered results or hypotheses about actual or perceived equity.

Only one study made a comparison between CBE and the traditional model to determine the impact of CBE on equity (Pane et al., 2015;). This is a high-quality study that used effect size as a metric to compare personalized learning and the traditional teaching approach in 65 public schools. There is some evidence from this that the lowest-performing students significantly improved in comparison to their peers in the traditional classrooms, which is a unique finding from my review.

The influence of CBE on educational equity has been extensively documented in the literature, but there has not been a high-quality evaluation (rapid review) that gives a thorough summary of the current state of the field. It draws attention to the inconsistencies in the existing research regarding the impact of CBE on equality (whether it is positive or negative), strategies to increase equity within a competency-based system, and the dearth of empirical research data demonstrating these effects. Additionally, it contributes to the body of knowledge on CBE by providing clearer policy and practice recommendations than those found in earlier reviews.

According to the evidence from the studies included in this review, CBE will, if properly implemented, have a positive impact on educational equity. A CBE system's equity facilitators were also included in the majority of the studies. In one study it was referred to as an equity framework and described how districts and schools purposefully built for equity depending on the local context, including the community, previous approaches used, and the amount of trust and readiness of the staff to address bias and institutional practices (Sturgis & Casey, 2018). Three of the studies focused heavily on access to technology. Results regarding the impact of CBE on equity revealed conflicting findings. The study was unable to demonstrate a causal relationship between CBE and equity since there was very little empirical evidence to support or refute this claim in the reviewed studies. The next chapter covers the conclusion and recommendations that emerged from the study.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

This chapter describes the conclusions drawn from this study's findings regarding the impact of CBE on educational equity. The conclusions were based on this study's objective, research questions, and results. These findings' implications and resulting recommendations will also be discussed. The recommendations were based on the study's findings and goal.

Educational inequity is one of the challenges confronting teachers and policy makers . Due to these inequities, society and students now have different expectations regarding how teaching and learning should be approached. In this circumstance, there have been growing calls for a shift from the one-size-fits-all traditional education common in some public schools, which many believe promotes inequality. CBE has seen the potential to be a particularly powerful tool for advancing equity. Critics claim that it will make socioeconomic and educational inequality worse. For example, using the aspect of CBE that emphasizes anytime, anywhere learning, Lewis et al. (2014) claimed that students who had access to private teaching may have been able to learn faster and, perhaps, more deeply than those who do not.. They stated that:

The ability to afford individualized after school, in-person tutoring, or attendance at for-profit, after-school learning centers, will differentially benefit those who participate. Part of the reason is simply spending more time in structured learning environments. However, part is also due to the increased access to the same elements of teaching advantage of competency education: small-group instruction and individual, human-delivered tutoring that can provide tailored instruction and very fast, personalized responses to perceived

challenges. While well-implemented competency education could bring such advantages to low-income students during the school day, they will lack the access of their more advantaged peers in the non-school hours (p.14).

Given these controversies among the different studies, this review study was required to obtain a better understanding of how CBE might support equity. In K–12 classrooms throughout the United States, the adoption of the CBE model has witnessed a steady increase. Moreover, how effectively Competency Based Education is applied in K–12 schools has been the subject of numerous research. To attain educational equity, this study aimed to ascertain what the body of literature said about how CBE could move beyond a history of inequity that has shaped K–12 education. Add another aim of your study here]. I used the PRISMA guidelines and recommendations to conduct a systematic review of the literature. I chose a rapid review over other types of systematic literature studies because of time restrictions. A rapid review is a methodological approach that entails reviewing a body of literature more quickly while balancing bias and time considerations. Unfortunately, finding empirical research on CBE and equity was challenging because it is a relatively new area of study. Several studies were unavailable for access. A rapid review that used the PRISMA reporting strategies to compare similarities and differences between studies was used to circumvent this restriction. This chapter examines the conclusion of the research question, discusses the significance of this study, and offers recommendations for further research.

Research Question Discussed

What does the existing literature tell us about how CBE has affected educational equity in K-12 classrooms in the United States over the past 12 years?

The research question focused on CBE component(s) (policies, and strategies) that the various studies under review have identified as being connected to educational equity. The extent to which each of these components indicated a positive or negative impact on educational equity will be clarified.

Strategies to Improve Equity Within CBE

Most of the studies focused on strategies employed within a CBE system to enhance equity. A framework for how states, districts, and schools might create an equity agenda within their competency-based systems was provided by Casey and Sturgis (2018). They recommended that states, districts, and schools that want to proactively eliminate inequity recognize the need for a variety of approaches to deal with the nature of unfair practices at various levels of the educational system, including individual biases and beliefs, instruction, and assessment, school design, and systemic policies and resource distribution. The framework provided a starting point for governments, districts, and schools to develop and integrate equity policies that consider their local contexts within competency-based, individualized systems.

On their part, Marion et al. (2020), focused on assessment as a key element in the competency-based model that can help enhance equity. They contended that CBE systems are incapable of achieving equity unless they are supported by effective assessment tools and methods. They indicated that leaders in schools, districts, and states must work to create balanced assessment

systems that are consistent with learning progressions. This according to the authors must target competencies that provide a range of evidence for each student and serve a variety of stakeholders, and continuously track students' development over time. For information to be provided at various levels of the system to monitor, assess, and advance equality agendas, balanced assessment systems are essential.

Worthen and Patrick (2014) contended that fair, equitable, and sufficient funding is necessary to give teachers and students the support networks they require to succeed, as well as to ensure that students have access to high-quality, fully accessible blended and online learning models. They stated that:

The shift towards highly personalized, mastery-based learning models will be enabled by blended and online learning pathways that will allow each student to customize learning trajectories toward college and career readiness. To drive this vision, we must narrow the “digital divide” and equip our schools with high-speed broadband connectivity (p.1).

Unlike the previous authors, Surr et al. (2018) placed more emphasis on collaboration, They drew attention to the fact that while personalized learning strategies serve a variety of student learning needs, they may also restrict students' abilities to collaborate with others. They contend that educational practices that prioritize personalization while restricting pupils' chances for collaborative learning may have an impact on equity. This finding suggests that students' views of personalization acted as a crucial relationship to both high-quality collaboration and outcomes, in addition to being a critical link to student outcomes.

Policy Implementation

A few other studies focused on policy implementation that supports equity in a competency-based classroom. For instance, Patrick and Sturgis (2013) noted that educational equity goes beyond ensuring equal access and inputs for students, and also includes ensuring that their educational path, curriculum, instruction, and schedule are personalized to meet their specific needs both inside and outside of the classroom. Through a variety of tools and practices that are suitable for their learning styles, talents, and interests, as well as their social, emotional, and physical circumstances, educational equality meets all students where they are and helps them realize their potential. Patrick & Sturgis stated that:

There is tremendous risk and responsibility associated with competency-based systems in this regard: when implemented without preparation and comprehensive support for both learners and teachers, they can be executed so poorly that they are yet another false promise to students who are already at risk (p.10).

Overall, these studies give no conclusive evidence about how CBE implementation might improve equity. While various components of CBE have been claimed to have a possible impact on equity, none have been consistently identified across studies.

Limitations

This study, like any other, has limitations. First, the low quality of the studies found made it difficult to draw a definitive conclusion about the impact of CBE on equity. Because CBE is a new concept, there was not much empirical research on the subject. Though some of the research used high-quality design methods, the majority of the studies were policy scans. Another limitation

was that just two of the studies were primary studies, which limited the generalizability of the results; and finally, the inclusion and exclusion criteria limited the search to papers in English, which was the researcher's primary language.

Significance of the Study

This research builds on existing literature on CBE as it is one of the few if not the only rapid reviews focusing on CBE and equity. The study did not find any definitive evidence to affirm or disprove the claim that CBE leads to equity. As a result, this will serve as the foundation for my Ph.D. research. I hope to undertake a primary research in a developing country like Cameroon, that compares CBE to the traditional model, to investigate the extent to which CBE differs from the traditional system in promoting equity.

Recommendations

Based on the findings, CBE has the potential to improve equity if it is properly implemented. For the successful implementation of CBE that leads to greater equity, that ensures greater academic rigor as well as student and teacher engagement, it is important for policymakers to recognize the significant general variations in school funding and teachers' experiences, as well as the physical differences between schools in high- and lower-income neighborhoods, such as quality of building, teachers' experiences, availability of resources like technology, and the need to correct these systemic inequity. Policymakers may wish to finance the creation of high-quality learning content for free or low-cost dissemination which will in turn influence the quality of teaching and learning.

Conclusion

This research aimed at examining existing literature on K-12 CBE to determine if it has a positive influence on equity. Using a rapid review, 20 research and unpublished data on K-12 education from 2010 to 2022, were analyzed and synthesized to determine the impact, if any, that CBE had on educational equity. According to the findings, there was little empirical research concentrating on CBE and equity. The majority of the literature were policy scans. Across research, the notion that CBE will improve equity was rather constant. Within the competency-based paradigm, factors viewed as hurdles to equity included a lack of access to technology and unequal funding between schools from low socioeconomic backgrounds and those from middle-income and rich homes. Moreover, this study could not conclude that CBE implementation promoted educational equity. As a result, more empirical investigations are required to arrive a definite conclusion.

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