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An Analysis of Education Reforms and Assessment in the Core Subjects Using an Adapted Maslow's Hierarchy: Pre and Post COVID-19

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Abstract: Through the lens of an adapted Maslow's hierarchy of needs, I have analyzed (1) the impact of the three main educational reforms of the 20th and 21st centuries on culturally and linguistically diverse (CLD)and low-socioeconomic (SES)students in the core subjects up to the COVID-19 pandemic; (2) the efficacy of current classroom assessment practices, and (3) a brief reimagining of how changing equity standards in teaching and assessment post-COVID-19 could aid in CLD and low-SES students achieving a higher self-esteem level. I contend that student success, or self-esteem, can only be achieved by first satisfying the needs at the lower hierarchy levels. By analyzing CLD and SES students' school experiences, educators and policy-makers can extrapolate the requirements for inclusive, rigorous, and responsive assessments that recognize students' needs and utilize their cultural and linguistic diversity. As states begin the shift from remote learning back to face-to-face in the fall, more significant considerations of CLD and low-SES students must be ensured.

Keywords: assessment; Maslow's hierarchy of needs; educational reforms; culturally and linguistically diverse students; COVID-19 pandemic

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1. Introduction

From the Elementary and Secondary Education Act (1965) to the Every Student Succeeds Act (2015), reforms and reauthorizations to U.S. education over the past sixty years have aimed to improve the learning experiences of those students considered marginalized. Through varying degrees of federal guidance and regulations on funding, educational practices, and assessment, these reforms have ostensibly remained focused on reducing the achievement gap [1]. This achievement gap is "a matter of race and class ... a gap in academic achievement [that] persists between minority and disadvantaged students and their white counterparts ... and is one of the most pressing education-policy challenges that states currently face" [2,3]. However, this gap, for some scholars, is actually attributed to a lack of opportunity rather than academic ability; it is the "predictable result of systemic causes—a representation of the disparities in opportunities available to children of different racial, ethnic, socioeconomic, and cultural backgrounds" [4]. Scholars have found that "achievement disparities emerge not from race but from structural constraints and systematic biases, which propound 'racialized' outcomes" [5]. The opportunity gap shifts the discourse from one of outputs (achievement) to one of inputs. These inputs are "the deficiencies in the foundational components of societies, schools, and communities that produce significant differences in educational—and ultimately socioeconomic—outcomes" [4]. Those from marginalized communities, where these deficiencies are most common, have limited access to: (a) expert teachers; (b) personalized attention; (c) high-quality, rigorous curricula and educational materials; (d) information resources [6].

Federal and state policy-makers have long upheld the belief that education is the best antipoverty program [7], thereby leading to a reliance on educational reforms to fix the

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issues of poverty, inequality, and economic insecurity. Instead of focusing government reforms and funds on social provisions to combat poverty, policy-makers have *reformed* education into a system based on economics, accountability, and compliance [8].

This market-driven approach to education has dramatically influenced educators' assessment and teaching practices across the U.S. The accountability era, beginning with the No Child Left Behind Act (2002), has led teacher-driven assessment to shift to datacentric systems that utilize "standardized tests developed by a small number of educational services companies . . . [that] contain questions culled from the cultural experiences of, and based on the language abilities of, the test content developers" [9]. The lack of cultural and linguistic diversity within these assessments automatically disadvantages many students who make up 21st century classrooms. For culturally and linguistically diverse (CLD) and low-socioeconomic (SES) students, the requirement to "answer questions in a formal and rigid way, questions that may call for cultural acuity or information they may not have, and questions written by unseen experts for whom this information is often intuitive" [9], has expanded the achievement gap. A lack of context and real-world connection in these highstakes tests is causing many students, such as CLD and those from low-SES communities, to fail to identify with many of the core academic subjects such as science, math, and reading. In an era impacted by a severe health crisis, these market-driven reforms will only create a larger disparity between those who have access and opportunity and those who do not.

Through the lens of an adapted Maslow's hierarchy of needs, I have analyzed (1) the impacts of the three main educational reforms of the 20th and 21st centuries on CLD and low-SES students in the core subjects up to the COVID-19 pandemic; (2) the efficacy of current classroom assessment practices, and (3) a brief reimagining of how changing equity standards in teaching and assessment post-COVID-19 could help CLD and low SES students in achieving a higher self-esteem level. I contend that student success, or self-esteem, can only be achieved by first satisfying needs at lower hierarchy levels. Students cannot attain a the self-esteem level until: (a) social policies—not just educational—change to combat poverty; (b) schools become more equitable; (c) socially just educators teach and assess from culturally responsive perspectives. By analyzing CLD and low SES students' school experiences, educators and policy-makers can extrapolate the requirements for inclusive, rigorous, and responsive assessments that recognize students' needs and utilize their cultural and linguistic diversity. As states begin the shift from remote learning back to face-to-face in the fall, more significant considerations of CLD and low-SES students must be ensured.

2. U.S. Education 1965-Present

Throughout the reforms of the 20th and 21st centuries, policy-makers have frequently used the concept of equality as a key guiding principal when considering how best to reduce the achievement gap. Equality, in how it is used in reform discourse, refers to all students receiving the same resources, teachers, assessments, and curriculum [10]. By treating individual students as the same or equal, there is no recognition of individual student needs or SES. The terms equality and equity are two distinct structures. Equality is about equal distribution or sameness for everyone, while from a social justice perspective, equity is viewed as proportional fairness [10]. The terms horizontal and vertical equity have been used to distinguish between equity and equality. Chu [11] argued that "horizontal equity is concerned with providing equal treatment and provisions to all schools and students whereas vertical equity is concerned with ensuring that students with greatest needs or in disadvantaged conditions will receive more resources". Horizontal equity is only concerned with the equal distribution of materials and funds regardless of the needs of the school or students [12]. In contrast, vertical equity takes into consideration SES and current and historical racial inequities. The use of the term equality in reform language is limiting, and creates an inherently unequal school experience when used as the benchmark

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for resource distribution. Therefore, it is imperative for school reform terminology to be modified.

In order to meet the needs of all learners, educational reforms have undergone many iterations over the past sixty years. These reforms have all aimed to reduce the achievement gap. Equality, a buzzword throughout many of these reforms, remains the foundational tenet through which all policy is filtered (see Table 1).

Table 1. Educational reforms of the 20th and 21st centuries.

	Elementary and Secondary Education Act (ESEA) Enacted 1965	No Child Left Behind (NCLB) Enacted 2000/1	Every Student Succeeds Act (ESSA) Enacted 2015
Goal	 To fight the war on poverty through educational reforms Equality for low-income, gender, language learners, and students with disabilities 	 Ostensibly focused on closing the achievement gap in reading and math between CLD students and their white counterparts [13] To fight the war on poverty through educational reforms [14] 	- Equity and excellence by focusing on the achievement and opportunity gaps among students, especially those who are historically underserved [11]
Priorities	Increase funding to schoolsTo reduce the achievement gap	 To reduce the achievement gap Impose sanctions on underperforming schools 	 Revert fiscal power back to the states [10] Dedicate federal funding for preschool education
Teaching, Learning, and Assessment	No changes to teaching profession, education standards, or curricula (Black, 2017)	 Adoption of challenging standards on a state-by-state basis Implementation of annual standardized tests to measure "adequate yearly progress" (AYP) All teachers in core academic subjects be deemed highly qualified [1] 	 Individual states determine assessment tools and curricula Assessment remains focused on standardized tools; however, other measures can be used to assess school quality and student success [1]
Limitations	 Only those schools who complied with anti-segregation policies from Title VI of the Civil Rights Act received federal funds No clear enforcement of Title VI policies except through funding 	 Standards were not unified and curricula became narrowed and restricted in many districts to meet AYP [15,16] Standardized assessments as the only means to determine student progress created larger achievement gaps [13] Pressure to meet AYP caused many educators to teach to the test and focus on test-taking skills instead of curriculum [15] Schools deemed in need of improvement incurred sanctions; thus increasing the gap [17] 	 The return of power to the states minimizes the federal authority to demand progress A failure to set student performance benchmarks and local accountability measures A failure to limit current patterns of gross inequality in access to resources A lack of federal government intervention to ensure that the outstanding needs of low-income students are met [1]

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2.1. Universal Standards

The Common Core State Standards (CCSS) for English Language Arts/Literacy and the Common Core State Standards for Mathematics (CCSSM) were first released in 2010. The intention of this program was to "establish consensus on what students are expected to learn in Grades K–12. They are to help teachers and parents have a consistent and clear understanding of what they need to do to help them succeed in college, career, and the global economy" [18].

This was not designed to be a universal curriculum, but rather a clear set of standards of the knowledge and skills students need for success. It is the schools' responsibility to determine the learning outcomes and how they will achieve each of the standards. These *internationally benchmarked* standards "are explicit in their focus on what students are to learn . . . [the] intended curriculum, and not on how that content is to be taught, what often is referred to as pedagogy and curriculum" [19]. The intention of these standards is to offer shared experiences, focus, efficiency, and quality of assessments [19].

CCSS and CCSSM have been considered more rigorous than individual state standards, which is posing a challenge for both educators and administrators, as "trying to learn the nature of the CCSS, how to incorporate them into their curricula, and how to assess them" is requiring "much deliberation" [18]. The standards are fewer in number, and they emphasize conceptual understanding as well as procedural skills in order to enable greater depth of comprehension and use.

Initial adoption of the CCSS and CCSSM was extremely high, at 46 states; however, because of the difficulty in implementation, many of the states who adopted it have yet to fully carry-out the standards. According to the World Population Review [20], of the original states to adopt the standards, at least 16 states have now repealed or are in the process of repealing the use of CCSS.

2.2. Assessment

Federal and state standardized tests are norm-referenced assessments used as accountability tools to gauge how well students comprehend and apply concepts. These tests are utilized for many reasons; most notably they are one of the most objective ways to measure student performance, and have high validity and reliability standards [21].

Standardized tests are used in education from kindergarten through to postsecondary. At the federal level, the Preliminary Scholastic Aptitude Test (PSAT), Scholastic Aptitude Test (SAT), and the American College Test (ACT) are the most commonly given exams in high school. At the state level, there is no universal tool used to gauge abilities and knowledge. Instead, each state has created its own standardized assessments.

Though there are advantages to using standardized assessments, the pressure for schools and districts to rely solely on these to gauge the effectiveness of teachers and learners has highlighted the achievement gap between white and CLD students. To ensure a more accurate account of student capabilities, these should be utilized as one tool of many, not as the entirety of assessment practices.

The Program for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS) are two standardized assessments used to gauge student learning at the international level, and which include "measurements of highly related constructs, including mathematical and scientific competency" [22].

PISA is used to assess 15-year-olds from around the world on their ability to use their reading, mathematics and science knowledge and skills to meet real-life challenges. This test is focused on outcomes of learning rather than on schooling, and is quite broad in its content. TIMSS targets students at grades 4 and 8 to assess their capabilities in math and science. It focuses on what is considered the most common core of math curricula at the international level [22]. TIMSS assesses education systems and how well these systems are implemented, whereas PISA measures how well each curriculum "serves the general needs of students in their current and future lives as citizens" [22]. TIMSS and PISA complement each other by offering insight into the mathematical literacy of participating countries.

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For example, in math, PISA focuses on assessing all of the processes involved in solving math problems that connect to real-world contexts (applied math), while TIMSS assesses the mastery of all math processes in general (pure math). Combined, both tests provide valuable insight into how well students are performing and achieving literacy in math and science.

In 2010, the U.S. Department of Education funded a Race to the Top assessment program designed to support the creation of new assessment systems. PARCC and Smarter Balanced Assessment were successful in winning the government grants to begin developing their programs. The aim of these two new assessment systems was to address current state assessment issues, such as: (a) measuring skills too narrowly; (b) returning results that are "too little, too late" to be useful; (c) not adequately assessing whether students can apply their skills to solve complex problems [23]. These new assessment systems would utilize digital devices for the completion of the tests, contain complex, multipart questions, and require students to understand and analyze complex texts across all content areas, with the goal of full implementation by the 2014–2015 school year. PARCC and Smarter Balanced systems were designed to assess CCSS in English Language Arts (ELA) and math starting in grade 3. PARCC incorporates:

- a two-part summative assessment (a performance-based assessment and an end-ofyear assessment);
- two optional components (a diagnostic assessment and a midyear assessment);
- one required non summative assessment in speaking and listening [23].

The Smarter Balanced system combines summative, interim, and formative assessments into two components: performance tasks and an end-of-year computer-adaptive assessment. Students, parents, and teachers will be able to access varying degrees of data in order to view a child's growth year to year.

3. Methodology

The achievement gap and educational reforms are not new or emerging topics. However, the use of an updated hierarchy of needs with which to reflect on the current state of affairs provides new insight and a theoretical foundation for future research.

Utilizing the ERIC database, I conducted a review of relevant research using the keywords: *Maslow's hierarchy, CLD, SES, marginalized, COVID-19, assessment,* and *educational reforms*. This initial search resulted in a limited quantity of resources related specifically to Maslow's hierarchy and education. This small sampling of resources led to the determination that more work in this area is needed. To begin this process, I created an adapted framework that could be used in an educational setting to further examine how meeting a student's needs at the lower levels can aid in academic success.

Without the keyword *Maslow's hierarchy*, a larger sampling of literature surfaced. To connect back to my adapted framework, I utilized a thematic analysis to categorize the data. As I analyzed the literature, I used short-hand abbreviations (P, S, LB, SE) to denote the levels of the hierarchy. This shorthand led to: (a) a clear organization of the data for quick referencing during the writing process and (b) a tool to ensure that all components of the hierarchy were fully researched and covered. My keywords' fluctuation and flexibility provided a broad scope of resources that enabled me to refine my searches on a case-by-case basis. Before choosing to utilize an article, I reviewed its abstract to gauge its relevance to my topic. To ensure my research's depth and quality, I also conducted manual searches within Google Scholar and the University of Calgary Library catalogue using literature citations from relevant articles.

Once I had a foundational framework and data, I expanded the search by adding the keywords: *culturally responsive assessment* and *culturally responsive pedagogy*. These terms provided additional resources that fit the framework.

I acknowledge that I reside in a place of privilege, being a white female from a mid-SES background. My experience as a classroom teacher in schools in Canada, the U.S., and England, with high populations of low-SES English language learners and ethnic Educ. Sci. 2021, 11, 376 6 of 16

minorities, has provided the anchoring to this research. This research provided evidence that clearly supports the need to reconceptualize K-12 education so as to better address the disparities in the U.S.

4. Theoretical Framework

Dr. Abraham Maslow (1908–1970), touted as "one of the greatest psychologists of our times" [24], developed a human-centric hierarchy of needs (see Figure 1) that has been applied to countless educational and non-educational fields since its inception in 1943 [25]. Maslow's pyramid is leveled from a base of lower-order or deficiency needs to the top higher-order or growth needs. The lower three tiers of the pyramid require fulfillment before climbing the ladder to the pinnacle of self-actualization. The final level, self-actualization, is characterized by one's need to reach full potential. Maslow himself has had difficulty providing empirical data for this stage as "in our society, basically satisfied people are the exception, we do not know much about self-actualization, either experimentally or clinically. It remains a challenging problem for research" [26]. As this level is difficult to assess accurately, this article's focus will exclude self-actualization from the analysis.

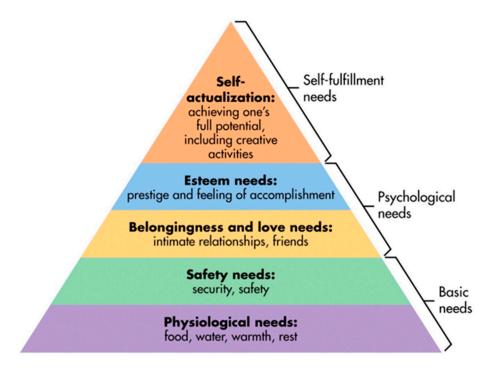


Figure 1. Maslow's hierarchy of needs. (Maslow's Hierarchy of Needs (2021) In *Wikipedia*, https://en.wikipedia.org/wiki/Maslow%27s_hierarchy_of_needs.CC.)

Maslow's research has provided valuable insight into the psychology fields; however, there has been limited research conducted on its implications for academic achievement at the school level, and the available research is outdated and primarily focused on adult populations [27].

4.1. Updated Maslow's Hierarchy of Basic Needs

This adaptation of Maslow's hierarchy is not individualized, but instead reflects the requirements for a student to achieve the self-esteem level. Concentrating on the factors that can advance or hinder students' growth through the hierarchy presents another avenue for exploring educational reform and policy. By utilizing an updated and contextualized hierarchy of needs (see Figure 2), this article provides a theoretical foundation for future studies in educational settings.



Figure 2. Adapted Maslow's hierarchy of basic needs.

4.2. Physiological and Emotional Needs

The foundational level of this model remains fundamentally the same. Each student requires food, water, rest, oxygen, health, and safety at home. However, I have expanded on the physiological level by including an emotional wellness component. It is important to recognize that mental health and wellness are a basic necessity for all humans. Mental health can impede so many facets of life, including the satisfying of other basic needs. Students require equitable access to healthcare, dental care, and safe living conditions [14,28-31]. Cramer et al. [10] argued that two-thirds of achievement discrepancy is attributable to non-school factors, such as prenatal care, parents' education, medical care, and so forth, with 60% of that attributable to family income. Socioeconomic status (SES) has been closely connected to students' academic success, and disproportionally affects those who are CLD [28,31,32]. Data show that CLD students live in poverty at almost double the level of their white counterparts. According to the U.S. Census Bureau, in 2019, over 12 million children under 18 years of age were classified as living below the poverty line. Of those, 21.2% were African American, 17.2% were Hispanic, 23% were Native American, and only 10.3% were Caucasian [33]. As these numbers reflect, poverty, race, and ethnicity are firmly tied. Students living below the poverty line struggle to have their emotional and physiological needs met. These deficits impact their motivation and abilities in school. There is a strong correlation between high test scores and high SES, and the same can be seen for the reverse [31,32]. According to the 2003 TIMSS math and science scores for grades 4 and 8, disaggregated by the degree of poverty in schools they attend, there was about a 100-point difference between schools with extreme poverty and low poverty [32]. As Medcalf et al. [34] argued, "the more capable a child feels, the higher they can reach towards self-actualization on Maslow's hierarchy. Thus, through experience, children's outlook, aspirations, and attitudes are shaped and molded to meet the demands for adaptation to the environment in which they find themselves".

Additionally, students living below the poverty line typically have a decreased *cultural capital* [28,31]. Cultural capital is defined as "the distinctions that develop between individuals and groups due to differences in access to education, family background, occupation,

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and wealth, giving them advantages and serving as a signifier of an individual's status within a group or society" [35]. Students living in poverty have limited access to this capital, as most family income pays for basic living expenses such as housing, food, electricity, and water. As there is little expendable income, many low-income children lack access to educational resources such as private schools, structured activities outside the home, books, educational toys, technological devices, and computer-related learning programs, limiting their cultural capital [31]. This lack of cultural capital will greatly impact their interest and success in more specialized fields, such as STEM. Academic pressures from educators and administrators can negate the genuine struggles and challenges faced by CLD and low-SES students. Academic achievement is greatly impacted by pressing needs at the psychological and emotional level, such as poverty, illness, faulty vision, violence, fear of rebuke, contracting coronavirus, or sick family members [36]. As a result of the inconsistencies in social policies and resources, the physiological and emotional needs of students in poverty, the majority of which are African American and Hispanic, are not equitable in terms of opportunity. Historically, educational reforms have been used as the primary tool to solve poverty, inequality, and economic insecurity [7]. As Kantor and Lowe noted, "by substituting education for direct forms of social provision, it has limited the federal government's capacity to address the poverty that destabilizes children's lives and erodes school achievement" [7]. Until federal and state governments address poverty and inequality, the gap for CLD students will continue to widen.

4.3. Safety Needs

The next level in the hierarchy addresses the safety needs of students at school. In my adaptation, I see these needs as a feeling of being safe and secure in one's school and community, and the need for students to have equitable access to good-quality schools, teachers, and materials. For CLD students and those living in poverty, equitable access is vital if these students are to achieve their growth needs. A vast majority of CLD students have been resegregated, as SES determines school boundaries [7,11,32,37–39]. Lewis et al. argued that "the urban classroom environment is the evident expression of racism and separatism because of its geographically segregated arrangement and because it prevents African American learners from participating in mainstream opportunities" [40]. This segregation forces many of these students into under-funded, high-density urban schools [41].

In the US, public education is funded in three parts: approximately 48% comes from the state, 44% is funded by property taxes, and the last 8% comes from federal sources [42]. With nearly half of a district's funding coming from property tax, a fiscal inequity is created, as more affluent districts, typically suburban, can provide better access to resources, qualified teachers, and materials [10]. In some suburban districts, academic spending is double that at urban schools [6]. It is essential to note that standardized assessments primarily determine state and federal funding allocation. The No Child Left Behind and Every Student Succeeds acts have done the inverse of what was initially envisioned. Instead of "ensuring high-quality, equitable schooling that closes gaps among groups of students, these reforms have created winners and losers (among communities, schools, teachers, and students) that reflect economic and social advantage" [43]. When considering the inequity inherent in distribution policies, it is not surprising that those who *have* continue to thrive, while those who *have not* continue to lag.

4.4. Love and Belonging Needs

This step refers to a student's need for acceptance and educators who provide rigorous, culturally responsive, and bias-free pedagogy. Culturally responsive teaching (CRT) and assessment are not standard practices in U.S. schools and are most notably absent at low-achieving schools. A vast majority of CLD students attend high-poverty, urban schools "where educational consideration and decision making are not centered around race, ethnicity, culture, language, or disability" [10]. Ramsey-Jordan argued that the "US . . .

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education of ... CLD [students] has been overtly marked by cultural oppression and cultural unresponsiveness ... [and] is arguably one of the major causes of race-based schooling disparities" [39]. With so much focus being placed on standardized practices and assessments, there has been a "shift away from culturally responsive practices such as using real-world, familiar curriculum representative of the language cultures present in the classroom" [10]. CRT recognizes that CLD students and their families possess large funds of knowledge [10]. These funds of knowledge can play an important role in ensuring CLD student success when integrated into teaching and assessment practices. Professional development opportunities need to be provided as teachers require extensive equity training in order to effectively eliminate implicit bias and engage in culturally responsive teaching. A teacher's level of competency in and understanding of cultural responsiveness will build an atmosphere of success or failure for CLD students [40].

Another component of this phase of the hierarchy is the concept of rigor. With the implementation of reforms such as No Child Left Behind, teaching to the test has become the norm [44] as standardized assessments have become the primary source for measuring the effectiveness of teachers, schools, and students. By trying to lessen the achievement gap and meet the goals of these reforms, many states' curricula have been narrowed to focus more heavily on testable subjects, such as math and literacy [7]. Studies have found that standardized assessments for math and science only cover half of the curriculum in 31 states [15]. As "it is easier to achieve proficiency in fewer skills, the pressure for proficiency gains may incentivize narrower curricula, narrower tests, and teaching to the test, thereby restricting the range of skills students ultimately acquire" [15]. The pressure for schools and districts to increase the test scores of all of their students has created a "limited and narrow curriculum" with "widespread teaching to the test", which has effectively widened the achievement gap [16]. Kozol, as cited by Hursh, stated that in the U.S. there is "an educational apartheid system with one method of instruction for poor kids and another for middle-class kids. Poor students get drill and kill; other students (within the limits of the federal testing regime) more challenging curriculum" [14,45]. The narrowing of the curriculum ultimately affects the skill range of students in the core subjects. For example, when math is restricted and narrowed, it can create "limits on depth, breadth, or both, as math skills are segmented and sequentially ordered" [15]. As math is bi-directional, students require a foundation in arithmetic before they can move on to more complex work, such as linear functions. Overall, there is less focus on deep, critical thinking in the curriculum, and more on test-taking skills and test content [44].

4.5. Self-Esteem Needs

This level focuses on a student's need for self-esteem and respect. This phase recognizes that students also require esteem and respect from others. The respect and esteem from others needs to be stable and based in reality. This will enable the student to gain self-confidence and view themselves as valuable. If the respect and esteem from others is false or made-up, the student may develop feelings of inferiority or inadequacy [34]. The two components of this level are bias-free schools and the use of various assessment tools and practices.

To develop self-esteem, students need to feel confident and a sense of respect in all aspects of their school lives. Bias and discrimination, referred to as microaggressions, are ongoing threats to students fulfilling their self-esteem needs, especially those who are CLD. These are defined by Sue as "the brief and commonplace daily verbal, behavioral, and environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial, gender, sexual-orientation, and religious slights and insults to the target person or group" [46]. Microaggressions are often masked in reforms and policies that are intended to provide equality to everyone but have outcomes that work in the favor of some groups to the detriment of others, e.g., No Child Left Behind [46,47]. The impact of "chronic exposure to these negative micromessages is emotional and cognitive stress that depletes individual resources for STEM success and leads to attrition for less resilient

members of marginalized groups" [48]. These subtle slights, biases, and assumptions can also lead to stereotype threat [17,49–51].

Stereotype threat, well documented by Steele, is the "social-psychological threat that arises when one is in a situation or doing something for which a negative stereotype about one's group applies. This predicament threatens one with being negatively stereotyped, with being judged or treated stereotypically, or with the prospect of conforming to the stereotype" [51].

For some students, even documenting their race on a standardized assessment is enough to cause a stereotype threat [50].

The accountability era has standardized both assessments and pedagogy. This "standardization of instruction, assessment, and behavioral expectations, with the promise that all students will ultimately perform as one, that is, learn the same thing, at the same time, in the same way" [10], has undermined the wealth of abilities and knowledge that CLD and low-SES students bring to school. The focus on classifying and labeling students based on their annual achievement test results has widened the gap in achievement. As Kearns argued, "Good students are shown to be literate successful standardized test takers; whereas those who fail are deficient, illiterate, flawed, and in need of remedy, remediation, and transformation" [52]. Using standard terms, such as proficient, partially proficient, and unsatisfactory, as a means of categorizing students has unduly influenced teachers' curriculum and assessment design [53]. Applying these labels to students reinforces feelings of marginalization and low self-esteem and can lead to decreased confidence, loss of enjoyment for learning, and performance impairment [54,55]. This standardization of terminology has created a learning environment wherein many students are led to believe that academic ability is fixed rather than developmental.

5. Discussion

5.1. COVID-19: Impacts on Education

March 2020 saw the dawn of a new era in education as schools closed, leaving students, families, and educators to deal with the emotional and physical turmoil of a global pandemic. Classrooms went remote, and fears surrounding learning loss became rampant. Students and teachers were thrust into a unique learning environment. The "attempt at a 'seamless' transition to home-based school learning came with many seams, varying substantially across our 15,000 districts and 130,000 schools" [56]. Educators and researchers were concerned that COVID-19 would lead to:

- structural impediments and uneven access to learning;
- disruption in student engagement;
- limited and disrupted access to mental health supports;
- difficulties in online learning for special populations;
- barriers to effective communication with families and caregivers;
- challenges to teachers and staff [56].

This shift in teaching and learning due to COVID-19 publicized and made mainstream the rampant inequities plaguing the U.S. educational systems for decades [3,56,57]. Images of CLD and low SES students sitting in parking lots on tech devices became a daily reminder of the "error in the ways that the system of education treats the marginalized" [57]. These inequities were only amplified as schools across the U.S. were closed.

From the outset, there was a lack of cohesion in the amount of online instruction. There was no federal directive for how states should address student learning; therefore, as remote learning was not clearly outlined, the amount of student learning varied from state to state, district to district [58]. Initially, all schools remained closed as cases of COVID-19 increased. As the end of the 2019–2020 school year approached, some reopened face-to-face, whereas others remained remote.

In the spring, instruction was significantly different across the country, with many educators teaching fewer hours during the day than pre-COVID-19 instructional hours [59]. Many teachers reported working fewer hours a day in rural areas, towns, cities, and high-

poverty districts than those who teach in higher SES suburban areas [59]. On the other hand, some districts, such as Providence, RI, required students to attend class online from 8:00–3:30 pm every day. Teachers took attendance and used monitoring apps to track their students' participation [60]. Other districts were not even tracking attendance or student progress throughout the spring term. Some teachers provided live video lessons every day during the early shutdown, whereas others were providing little to no real-time instruction [60].

In addition to this varied instructional model, many teachers were unprepared to transition to an online platform. When asked, teachers noted that 87% more time is spent troubleshooting computer challenges, and 69% less time spent on presenting new, standards-aligned curricula [59]. This shift not only impacted students. This variation in teaching across the U.S. was due, in part, to the lack of district and state support, "a lack of knowledge of evidence-based pedagogical approaches to teaching online, lack of knowledge of technology, family/personal issues, illness" [61]. Educators were also required to quickly develop their computer skills to transition to an online learning environment. For some this was a smooth transition, but for others it was a stressful and challenging experiences. To ease this transition and lessen the gaps in learning, many districts focused their efforts only on math and ELA, as these were accountable via annual standardized tests. Science, Social Studies, and specials, such as P.E., art, and music, became optional. Zoom and other video-conferencing tools became the new classroom. Many educators also relied on pre-recorded lessons and online digital games to reinforce the curriculum.

Flexibility and balance became the guiding principles of the spring term. Districts had to ensure they were meeting their students' learning needs while being considerate of the needs of families and working parents. Too much flexibility and softening of requirements can be seen as letting students fall behind, whereas too much rigor and pressure was seen as a lack of compassion for families' needs. For the coming 2020–2021 school year, many districts around the country worked to determine the best plan to educate and support learners, with the *reopening* of schools being the priority. Some districts offered blended (a mix of online and face-to-face learning), fully remote, or fully face-to-face learning [62]. This flexibility in school options provided many families with choice.

5.2. COVID-19 Pandemic: CLD and Low-SES Students within the Updated Hierarchy

While all students and families encountered challenges throughout the pandemic, none were as greatly impacted as those who are marginalized [56,58,63,64]. Low-SES and CLD students faced numerous obstacles from the outset of the pandemic. Accessibility to academic resources, healthcare, mental health supports, food and nutrition, and safe places to learn were just a few of the challenges COVID-19 presented to the marginalized [65].

In the context of the adapted hierarchy, all levels were impacted. For many CLD and low-SES students, schools provide mental and physical health support, food and nutrition, and safe, structured environments [66]. With the closing of schools, many of these students were unable to satisfy their lowest-level needs. The bias and discriminatory treatment many of these students faced before COVID-19 were exacerbated during the crisis, as there are "unjust societal inequities which cut across all systems, including employment, insurance, income and access to health care, including mental health treatment" [62]. The closure of schools may lead to greater incidences of abuse and violence towards children and adolescents due to increased financial, logistical, and existential stressors that are affecting parents and caregivers [62,66].

From a safety needs standpoint, CLD and low-SES populations were disproportionally affected by COVID-19. Equitable access to resources, learning materials, and teacher-directed learning were greatly hampered. There are significant gaps in access and resources for many students, causing problems for virtual instruction and equipping children to work online [61]. Approximately 21 million people lack any access to broadband, with slow and unreliable network access inflating this number to 157 million [67]. With schools closing and learning moving online, many students were left with little to no connection to

learning. Some teachers provided photocopied review work and used the telephone as a means for communication; however, this lack of equity in resources greatly affected the learning of CLD and low-SES students. Many districts around the country had already been transitioning to a 1:1 student:device ratio, enabling every student to have a technological device for completing work at school and home. However, in many rural areas and low-SES districts, there are few devices available for students to use at school, let alone take home [68]. Approximately 72% of teachers in mid–high-SES districts report that their schools offer 1:1 student:device ratios, versus only 44% in low-SES communities [59].

For many students, learning shifted from the acquisition of new concepts to the review of old concepts. Students were not receiving rigorous, culturally responsive learning. Many districts prioritized learning continuity that focused on reviewing and strengthening core content areas but did not teach new skills. Districts serving low-SES and CLD students told schools "Not to teach new material ... because they worried that the 'huge discrepancy' in parents' abilities to manage at-home teaching could exacerbate achievement gaps" [60]. In high-poverty districts, over 76% of teachers reported spending less time presenting new material, in comparison to 55% in low-poverty areas [59]. Teaching and learning time were primarily focused on review and technology troubleshooting. On average, students in high-poverty areas spent less than two hours a day learning [59]. Learning quality for CLD and low-SES students varies greatly, and is much lower than that provided for white and mid-high-SES students. For African American and Hispanic students, about 14-21% of learning is considered average or above average, versus 38% for white students. On the other end of the spectrum, the average percentage of students receiving no instruction at all is between 30–40%, as compared to only 10% for white students [58]. If this discrepancy continues, it is predicted that the achievement gap will increase by 15–20%.

During online instruction, student engagement and motivation decreased, while truancy increased, which will lead to learning losses and challenges with meeting self-esteem needs. According to the surveyed teachers, there is a high rate of truancy noted for CLD and low-SES students—approximately 28%, versus only 11% for those in high-SES populations [59]. More than 56% of teachers working in predominantly mid- to high-SES areas reported that they are interacting and communicating with their students at least once per day, as compared to less than 33% in low-SES districts [59]. Learning loss will be impacted by access to remote learning, the quality of the learning, home support, and the degree of engagement. This learning loss will be greatest for CLD and low-SES students as "lower income students are less likely to have access to high-quality remote learning or to a conducive earning environment, such as a quiet space with minimal distractions, devices they do not need to share, high-speed internet, and parental academic supervision" [58].

The impact of COVID-19 on student learning will be reflected in student scores on standardized tests for at least the next two years, if not longer, due to the divergence from traditional teaching practices [61,69]. Initial projections predict that students will return with less than 50% of typical learning gains in math when returning to school in fall 2020 [64]. Initial testing comparing math scores in fall 2019 and 2020 showed that there was a 5–10 percentile reduction in the scores post-COVID-19 school closures. This same study also noted that 25% of the students present in the 2019 test were no longer accounted for in the 2020 testing cycle. They attribute this to a lack of reliable technology, and the possibility that many of these students may have disengaged from school due to economic and health factors [69].

To ease the stress felt by students, teachers, and families, the federal government waived the requirements for standardized achievement exams for the 2019–2020 school year. However, for the 2020–2021 school year, the new government mandated that achievement exams will proceed as per usual [70]. Again, standardized assessments will be used as the primary accountability measure of students' math and reading skills in grades 3–8 and 10, and science in grades 5 and 8. With the ongoing pressure to account for student learning through standardized assessments, the focus on the core subjects from a siloed approach continues to dominate.

5.3. Post-COVID 19: Moving Forward

In a post-pandemic world, the idea of returning to *normal* should not be the priority of policy-makers. As Ladson-Billings argued, "normal is where the problems reside ... that "going back" is the wrong thing for children and youth who were unsuccessful and oppressed in our schools before the pandemic" [71]. Now is the time to change the systemic flaws that are widening the opportunity gap for CLD and low-SES students.

Classrooms across the U.S. are becoming more and more culturally complex and require a new methodology for teaching and learning [72]. As students return to face-toface teaching, educators need to develop a better understanding of the contextual factors that are impacting their students. By utilizing culturally responsive pedagogy (CRP) recognized as an effective tool for improving student success in school as it involves incorporating the cultural experiences of students into teaching and learning—student engagement, motivation, and achievement are increased [39,47,71]. CRP is framed by academic achievement/student learning, cultural competence, and socio-political/critical consciousness, with student learning being at the heart of teaching [71]. Ladson-Billings defined cultural competence to mean "that students are secure in their knowledge and understanding of their own culture—language, traditions, histories, culture, and so forth, AND are developing fluency and facility in at least one other culture" [71]. Cultural capital is relevant for all students, including those in the majority. Socio-political/critical consciousness refers to providing students with the tools to be able to address present-day concerns. CRP teachers integrate elements of the curriculum into these issues with less reliance on worksheets and busy work and more on problem-solving.

CRP in the core subjects "promote[s] the engagement and achievement of underrepresented students in all content areas" [49]. Understanding where students come from culturally and linguistically and incorporating their values, interests, competencies and experiences into learning opportunities is highly relevant for classroom learning and assessment [49,72].

Knowledge and skills in the core subjects come from students' experiences and interactions with the environment (first-order knowledge), as well as learning that takes place in school (second-order knowledge), and continues to adapt and change throughout their lives. Creating assessments that include open-ended tasks and items targeting both first-order and second-order knowledge will provide educators with a greater snapshot of a student's learning [54]. By utilizing assessment tools that "provide contextualized information for students, and opportunities for them to demonstrate the ability to identify problems, collect data, and find solutions" ensures a more robust assessment that does not "alienate them or punish them for not intuiting knowledge that is not part of their lived experience" [9]. Assessments that rely solely on closed items and multiple-choice, as reflected in most standardized assessments, are ineffective in fully determining a student's mathematical and science capability [54].

6. Conclusions

When considering the impact of COVID-19 on student achievement through the lens of an adapted hierarchy, it is clear that many students, most notably CLD and those of low SES, are working at a deficit. Without the means to attend to physical, mental, and emotional health, these students are not going to be able to maintain focus in a remote setting. Without equitable access to broadband and tech devices, these students will not be able to participate in synchronous and asynchronous activities. Without rigorous, culturally responsive teaching, these students lose valuable time learning new, standards-aligned curricula. Without, considering self-esteem and varied assessment tools, these students disengage and drop out of school at higher rates. Without satisfying the needs of the level before, students are struggling to develop into confident, academically capable students. Assessment practices need to change. They are literally failing our CLD and low-SES students.

As noted in the data, educational reforms are not enough to narrow the gap. Reforms that address the physiological and safety needs of our students should become the priority. Until these needs are satisfied, students are not able to progress. Through equitable funding structures, students will have a greater chance of succeeding both academically and socially. It is imperative that all of our students are given an equitable footing in the push for academic excellence. Our CLD and low-SES students bring a diversity of ideas, experiences, and perspectives that are vital and should be valued.

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