

The Production and Reproduction of Education Inequalities by Socioeconomic Status and Practical Approaches to Reduce Educational Inequality

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Abstract: Unequal distributions of education resources in the United States disproportionately affect children from lower socioeconomic backgrounds to pursue higher education. This severely limits their academic and career opportunities, as well as hinders the social stability and economic potential of this nation. This essay examines how inequalities are embedded across key educational stages and utilizes a chronological approach to reveal education inequalities, through unequal access to resources and potential system barriers from the preschool level to college. By analyzing the nature of the income-education spiral, this essay reviews how financial constraints and other roots perpetuate the unequal distribution of education resources in all stages. Practical solutions, including the role of the federal government, the role of the states, reforming financial aid systems, and educational savings accounts will be proposed. Through emphasizing feasible steps for all parties in the society, this essay highlights the idea that reducing educational inequality in the United States is essential, for individual empowerment, innovations and advancements of the society, and the economy of the nation.

Keywords: Education Inequality, Long-term impacts of Education, Income-education spiral, Intergenerational inequalities, Innovative education funding models

1. Introduction

Despite access to educational resources and overall educational attainment has improved globally in the past decades, educational inequalities persist in the United States. The difference between college attendance rates among peers from different socioeconomic classes reflects the unequal distribution of educational resources manifested in all stages of education, displays the disparity of the contemporary education gap across the country, and illustrates that individuals' participation in education is directly affected by their socioeconomic status- children's zip code determines their future. Unequal distributions of educational resources cause an income-education spiral, which further enhances educational inequalities- Intergenerationally, a higher education level increases the opportunities of earning a higher income in the future, leading to intergenerational impacts, as higher-income households are willing and able to invest more in education for the next generations compared to lower-income households. To effectively understand and address education inequalities, it is not only important to see income as the sole contributor to educational inequalities but also to dive deep

into the roots that cause this spiral. In this essay, I will examine how each level of education, following a traditional chronological progression in the United States, from preschool to higher education in college, contributes to individuals' overall academic success. Then, I will examine how a lack of financial resources prevents students from receiving education and how financial deficiency acts as a boundary that limits children's access to education at each stage. At last, I will propose practical solutions to address education inequality at each stage being discussed and suggestions for potential improvements on the existing actions taken by the federal government, states, and social organizations.

2. The Importance of Education and Unequal Distribution of Education Resources at Each Educational Stage

Education is a process of development of self-awareness and a cornerstone to self-actualization and individual empowerment. Each stage of education, from pre-school to higher education, plays a significant role in the development of children both academic and non-academically- providing pieces of training on comprehensive and communication abilities, cognitive development, as well as self-disciplinary skills. Each stage acts as a stair, providing fundamentals for advancements to the next stage. However, financial barriers cause unequal distribution of resources in all key stages, creating systematic challenges for students from low socioeconomic backgrounds to further pursue education, hindering potential career growth and self-development opportunities for millions of students across the nation.

2.1. Preschool

Starting with chronological progression, the first opportunity children receive education for fundamental knowledge is preschool, which is the crucial starting point of children's education journey.

2.1.1. The Importance of Preschool

It is important to address the vitalness of preschool education as it is an opportunity to nurture children's overall self-disciplinary skills and academic abilities. Children often develop cognitive and physiological skills, as well as self-controlling and self-sufficiency during the early childhood period of 2 to 6 years old [1]. This is proven by the fact that children's brains are extremely sensitive to environmental enrichment in early childhood as their neuron system undergoes very fast growth and pruning based on environmental inputs, such as language, activities, as well as human interactions and responses. At the same time, children who have the advantage of using this period well tend to show stronger performance beyond their later academic careers- The head start from preschool education had an effect of 0.23 standard deviations on an index of young adults' outcomes comprising high school graduation, college attendance, joblessness, crime, teen parenthood, as well as health [2].

2.1.2. Inequality at The Preschool Level

Unfortunately, despite the importance of preschool, not all children will have the advantage of enjoying the benefits of education at this stage. Households' financial position acts as a key determinant of whether children will have the opportunity to receive it- Children from higher-income families are more likely to receive quality preschool education whereas those from lower-income families are often unlikely to receive any or receive preschool education at a much lower quality, including both instructional and interactional quality within the classroom with the faculties. The gap in investments in preschool education can often be reflected in the preschoolers' academic

performances. Research conducted on children coming from families in the top 5 percent and bottom 5 percent of the socioeconomic status metric reveals a significant skill gap in terms of both cognitive and non-cognitive skills at the kindergarten level [3]. The study shows that children from different SES backgrounds exhibit over a standard deviation difference in reading and math skills. Additionally, there are gaps exceeding one-third of the standard deviation in self-control and approaches to learning. This indicates that a large amount of spending on children's early development from higher-income families is proven to improve skills that would better aid the children in future academics. In comparison, lower-income families are unable to afford to invest in children's early education for skill development and miss out on the opportunity that may benefit the children permanently. This results in large gaps in academic abilities between children from different socioeconomic backgrounds from a young age. Although teachers may focus more on students with relatively lower levels of skills, those who have not had good early childhood development training may still be less able to cope with academic pressures and compete with those who have received more preschool education in the long run, therefore less likely to insist on continuing to pursue education further.

2.2. K-12 Education

K-12 education is the next and longest stage for fundamental education, comprising kindergarten, elementary, and secondary school.

2.2.1. Importance of K-12 Education and the K-12 Education Disparities

K-12 education provides children with foundational skills for critical thinking, future study, career, and independence, as well as the confidence to achieve their goals. A high-quality K-12 education allows children to learn about themselves, establish themselves, and contribute to society. In fact, most Americans believe the purpose of K-12 education is not only to teach academics but to prepare students for work and to be good citizens. Most believe K-12 education has a lot of responsibility for ensuring workers have the skills and education they need to be successful in today's economy [4]. Despite the belief and the importance of K-12 education in terms of supporting students pursuing higher education and professional careers, education inequality persists in K-12 education.

This is mainly attributed to the unequal funding system of public K-12 education, which fails to address the need for an equal K-12 education for all. According to the 10th amendment: *"The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people,"* the federal government only passes legislation for education, and the policies and approaches for education are determined solely on the state and local education agencies [5,6]. In the US, public K-12 schools are funded based on community property taxes rather than directly funded by the state or federal government. This causes funding distribution and the regulatory systems to cause an unequal distribution of funds to public schools among different neighborhoods as there are fewer taxes generated to support schools in impoverished areas, leading to differences in the quality of education provided. Specifically, high-poverty district schools receive significantly less funding than low-poverty district schools: "Education funding generally is inadequate and inequitable; It relies too heavily on state and local resources, particularly property tax revenues" [7]. If education funding of public schools is heavily based on the district's tax revenues, a greater amount of funding would be provided to those districts that pay a higher amount of tax, coming from higher income and higher property values of the households. Logically, the more taxes paid, the more funding will be distributed for local public education. This mechanism can also be seen as a solid reflection of the income-education spiral phenomenon as mentioned in the introduction. The households who earn more will be able to afford more expensive houses located in relatively

richer neighborhoods, paying a larger amount of property tax and their children will attend the higher-funded local schools to receive a better-quality education. Adversely, in lower-income neighborhoods, fewer property taxes are being collected, thus less funding for public education, leading to a poorer quality of education provided to the children. Eventually, there will be a great gap between children coming from high-income and low-income families in terms of academic performance, and children in lower-income neighborhoods will end up being behind the starting line even when they get to kindergarten [8]. In the longer term, children who live in high-poverty neighborhoods would be in a huge academically disadvantaged situation compared to those living in better-off neighborhoods who have received better quality education throughout their school years.

2.2.2. Effects on College Admissions

This significant education gap will be reflected during the college application process, and it is the key factor that prevents those children living in high-poverty neighborhoods from continuing to pursue higher education, leading to disparities in attendance at higher education. College entrance exams such as the SAT and ACT are key admission standards for selecting students and scoring a 1300 on the SAT opens paths to America's top colleges. Due to the different quality of education received before the college stage, performances on college entry exams also vary. According to statistics, 17% of students coming from the top 20% of the income quartile have reached this score, in comparison to 2.4 % of those who come from the bottom 20 % of the quartile [8]. This vividly illustrates the fact that students from high-income families are more likely to score high on college entry exams whereas students who have reached this score would likely end up in more prestige colleges to pursue higher education. Ultimately, students who come from lower-income households would receive a lower quality of education because of lower funding, leading to academic disadvantages and poor performances on college entry examinations, resulting in fewer chances of attending higher-level education, further enlarging the education gap.

2.3. Significance of College Education and Financial Issues

The next stage of the journey after K-12 is college. While the differences in financial resources contribute to great inequality in Pre-K and K-12 education levels, they also play a major role in higher education. Statistics based on attendance at college of students coming from different socioeconomic backgrounds display a fair reflection of the contemporary education gap disparities across the country, as 51 percent of students from low-income families enroll in college, compared to 89 percent of students from higher-income families [9]. Many students have reached the college level and successfully enrolled in college, however, a great number of them have dropped out. In the US, the college dropout rate averages 32.9 percent for undergraduates as of 2021 [10], and 51 percent of the dropouts drop out because of financial [11]. The statistical dropout rate illustrates there is over one-third of undergraduates decide to drop out of college, and more than half of the dropouts have dropped out due to financial difficulties. Many potential limits can prevent students with financial difficulties from continuing to pursue higher education: Students who have financial difficulties often work part-time to support themselves or their families, therefore their amount of time spent on studies has been forcefully deprived, resulting in a lack of academic skills to cope with the college's agenda; lower-income households are simply unable to financially support their children to continue their paths in higher education. Consequently, the lack of financial power would force lower-income students to drop out of higher education, either actively or passively. It is no longer a secret that earning a bachelor's degree will more likely lead to a higher career earning. Therefore, students who have dropped out will be less likely to earn a high income in the future and are less likely to be able to invest in the next generation's education, enlarging the education gap between high-income and low-

income households further. In addition, scholar Philip A. Trostel at the University of Maine indicated in his 2015 study that higher education does not only bring earning benefits but also other potential benefits in terms of higher standards of living: Americans with bachelor's degrees have 134 % higher annual earnings than those who without bachelor's degrees; the likelihood of unemployment is 2.2 times lower and the incidence of poverty is 3.5 times lower; the likelihood of reporting health to be very good or excellent is 44% greater; the probability of being married is 21% higher and the probability of being divorced or separated is 61% lower. [12]. Although it is not a guarantee that individuals will have better financial outcomes as well as higher standards of living, statistics indicate the likelihood and reflect the importance of receiving higher education.

3. Solutions

Although it is impossible to erase the existence of education inequality due to the scarce resources and the allocation mechanism of resources within our society, it is certainly possible for all parties in society to act to narrow this gap as much as possible through the encouragement to invest more in education.

3.1. Raising Public Awareness

Raising public awareness in education is the key first step. Both the federal government and the local states should also incentivize the spending on education from all families through public campaigns that help to make the public fully aware of the relationship between education and income, giving incentives for families to increase their spending on education to increase the likelihood of being able to earn higher incomes in the future. For instance, UNESCO estimates that each year of schooling raises earnings by around 10% for men and up to 20% for women [13]. This can be used as a great financial motive to illustrate to the public the positive outcomes of education and encourage all households in the nation to invest more in education. It is also very important to encourage more participation in preschool education with all the benefits discussed above. Many young parents believe that preschool education is unnecessary as early childhood education could be provided at home. This perception is the result of a lack of understanding of the scientific advantages of attending preschool, and all government parties should encourage the correction of this perception through consistent public advertisements and announcements. Contents of the public campaigns and advertisements should include the research results published by authorities to establish credibility. All benefits discussed above, ranging from short-term benefits such as improved cognitive and non-cognitive skills to long-term benefits, such as improved academic and career outcomes, can be used as the core arguments and advertising points.

3.2. Funding Equality- The Role of The Federal Government

Improving K-12 education quality in high-poverty neighborhoods is vital and desperate. It is no longer a secret that college entry examinations are, in a sense, wealth tests. Regardless of the doubting voices in college admission policies, it is proven that students with high SAT scores tend to be more able to handle college-level work [8]. "They've gone to better schools, they've read more novels, they've learned more math," said Jesse Rothstein, a professor of public policy and economics at the University of California, Berkeley [8]. At the same time, Northwestern University economist C. Kirabo Jackson revealed in her study in 2018 that there is a positive correlation between increased school spending and student outcomes on average [14]. Therefore, the priority focuses of reducing the equation inequality should not be on eliminating the policies that may assist students to have better academic performance, rather, focus on how to effectively address the academic weakness of those who are lacking quality education and help them to achieve the national standard. Since K-12

education is the key to developing students' academic skills and the longest path to receiving school education, it is crucial to ensure public schools in all neighborhoods are well-funded and function efficiently to provide quality education for students of all socioeconomic backgrounds. The biggest contemporary issue is the lack of presence of the federal government. According to statistics, the federal government only accounts for approximately 8 percent of the funding for schools, with the rest of the funding being accounted for by the state for around 47% and local communities for around 45%, mainly from property taxes [15]. Funding public K-12 education and improving the quality of education provided in all state neighborhoods is certainly not a small project. Thus, the federal government should play a more dominant role, increasing the national funding for public schools and working alongside the states and local communities to ensure more public schools are well-funded enough to provide quantifiable education.

There are many channels the federal government could achieve this, such as through the Department of Education and government organizations. It is noticeable that the federal government has been increasing its funding for K-12 education within the last decade, particularly for elementary and secondary schools- the federal government spends an estimated 79 billion dollars on elementary and secondary education mainly through the Department of Education [16]. It is also noticeable that federal funds also flow through some of the largest wide-reach initiatives such as Race to the Top, Common Core, and ESSA. For example, Race to the Top awarded \$4 billion to 18 states and the District of Columbia through a competitive grant and supported comprehensive education reform and innovation focused on developing standardized assessments [17]. These actions need to be taken consistently with a gradual increase in the amount of funds since they have been proven to be effective, particularly on lower-income minority racial groups such as Hispanic groups, as they have proven to have a steady increase in the college attendance rate. Although improvements have been seen from the actions of the federal government over the years, it is simply not enough. This is reflected if we look at the spending per pupil, in which the top ten states with the highest spending per pupil all had an above-national average median household income [18], indicating that states with higher poverty levels are still unable to compete with lower poverty states in terms of education investment distributed to each student. Therefore, the federal government needs to play a further supportive role in it and encourage a gradual increase in spending on education from the side of the federal government. The only way to redeem this unequal funding system is to manually inject more financial resources into poor states and poorer districts for the states and local communities to have more funds to be used in building and improving the local public schools.

3.3. The Role of Each State Government

Alongside the federal government, states also need to ensure the effectiveness and efficiency of their distribution of funds. However, what is known as the "funding disparity within states" reflects the fact that districts with higher poverty do not benefit more than the lower-poverty districts in terms of the amount of funding. For example, in Philadelphia, the highest poverty district is reported to have received 33% of funds than the lower poverty district [19]. Lower Merion School District, one of the wealthiest districts, spent around 24000 dollars per pupil in comparison to another school district, Philadelphia City School District, spent only 11000 dollars per pupil, which is less than half of Merion School District's spending [18]. This directly reflects that the state needs to carefully plan the distribution of the funds and distribute more to the highest poverty districts. It is key to avoid keeping the poorest districts continue to operate with budget deficiencies. If the fund is not equally allocated among the school districts according to the overall level of wealth of districts, a higher level of fund injection will only lead to more unequal quality of education being provided to students coming from different SES backgrounds.

3.4. Reforming Distribution Criteria of Financial Aid

Another pertinent approach is to provide educational financial aid for higher education, including grants and scholarships provided by the school and the government. Grants and scholarships are generally considered extremely useful as they can make higher education affordable for those who struggle to pay the tuition and reduce the burden of students working part-time, allowing more focus on academics. While scholarships and grants have already covered 29 percent of college costs for a typical family as of 2023 [20], there are inequalities within the mechanism of how aid has been distributed and needs to be improved. The debate between need-based and merit-based has been ongoing. “Despite the increasing gap among those who can and can’t afford college, billions of dollars in scholarships are awarded each year based primarily on students’ academic, extracurricular, and athletic achievements instead of those students not being able to afford tuition expenses” [21]. Nowadays, students are mostly funded based on their academic performance rather than the actual need for financial support. In other words, the better the students do, the more funds they will get. As discussed above, students who come from higher-income backgrounds tend to have stronger academic performances, thus, this mechanism would likely reward the ones who may be academically strong but do not need the financial support to complete higher education. Those who need financial support are often omitted, which would not help to reduce education inequality. Therefore, institutional and private scholarship providers should use a larger portion of funds to support those who are deeply in need of financial support to complete their studies. A perfect example is set up by Scholarship America partner Achieve Atlanta, as they provide need-based scholarships of \$5,000 for four-year colleges and \$1,500 for associate’s or technical degrees to all qualified Atlanta Public Schools graduates, which is proven to be effective. “Students who receive the scholarship and support are 11 percentage points more likely to persist to their second semester in college than their peers who are similar academically and demographically but did not receive the Achieve Atlanta Scholarship” [21]. While this result demonstrates that the students are more likely to persist in college once being financed, it also evokes the likelihood of students being able to focus greater on academics without the worry of financial difficulties. Achieve Atlanta has shown a vivid illustration of a scholarship organization focusing on financially supporting need-based students, which should influence the approaches of all other educational aid providers to pay more attention to those in need and contribute to supporting their education paths practically.

3.5. Increase of Availability for Education Spending

In addition, other approaches could be taken by the federal government and the states to increase the household financial ability for education investments, other than direct funding of the local school districts. To some extent, the following methods are proven to be more cost-effective. High-poverty households financially struggle with the survival aspects of living, not to mention spending and investing large amounts of money in education. Suppose the income of these households can be improved and have spare income after spending on necessities, they may use this amount of money on education. This assumption can be supported by Maslow’s hierarchy of needs, in which people are likely to follow the hierarchy of needs and pursue different levels of interests based on the level of needs that have been met [22]. In other words, once basic physiological and safety needs are met, people are likely to pursue in the interest of self-esteem. Education is a way of self-actualizing and self-improving, thus pursuing education for further self-development can be greatly encouraged if the basic needs of people can be met. This would require the welfare systems in the society to operate efficiently and allocate enough funds to meet the basic needs of high-poverty households.

Apart from increasing direct funding, the federal government could also implement other alternative strategies to increase the potential amount of money available for education from each

household. Education Savings Account, otherwise known as the ESA, is an illustrative example of how the government can indirectly subsidize each child's education without directly providing funds to the schools. An Education Savings Account established for parents is a publicly funded account with restricted use for educational purposes, such as school tuition, tutoring, textbook expenses, etc. Unused expenses during the K-12 education could also be used for further education activities such as college tuition [23]. The EAS program is seen to have brought Milton' Friedman's school voucher idea into reality in the 21st century, and a fully realized system of ESAs would generate powerful incentives for innovative schooling practices and better outcomes for lower costs [24]. ESA has already been implemented in seventeen states, and with its level of efficiency, it is expected to be used in more states as a micro approach to increase the spending on education for each student.

4. Conclusion

To conclude, education in all stages is very crucial for both the academic and career success of young individuals. Educational inequalities are greatly attributed to income inequality, and through the logic of the income education spiral, more spending on education may result in higher future income, and lower spending on education is likely to deprive the higher-paid opportunities. As this essay has demonstrated, the income-education spiral continues to widen the gap between the top and bottom of the socioeconomic ladder, threatening social equity and mobility- the gap will further widen if no action is taken. While it is not possible to erase inequality, the path forward requires efforts and collaborations from all parties in society, including the federal government, individual households, and education organizations- taking practical approaches to be more supportive of the next generations' education and contribute together to create a brighter future for the next generations, laying foundations for a more cohesive and innovative society.

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