

Education in the United States and Finland:

A Comparative Analysis

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Abstract

This paper addresses selected factors contributing to the educational outcomes in the U.S. compared to Finland. The U.S. system is the focus, but it is compared and contrasted to the education system in Finland because the international comparisons of educational outcomes position Finland at the top of the list. Basic information related to education and employment in each country is provided, and the tools used to measure educational outcomes are explained. The literature review provides suggestions regarding the possible causes of educational disparities within the U.S., as well as the factors contributing to educational outcomes. In addition, the results of an empirical survey of college students' opinions about the factors playing the most important role in shaping educational outcomes are presented, analyzed, and interpreted by means of selected sociological classical and contemporary theoretical perspectives.

Education in the United States and Finland: A Comparative Analysis

This analysis was conducted in order to examine educational disparities within the United States (U.S.) education system. Within this system, there exists evidence of disparities between funding, curriculum, and test scores. Some schools have higher or lower funding, varying curriculum content, and a wide range of test scores, depending on the school. This thesis is based on two major components: one based only on secondary sources & another one based on data I generated by conducting an exploratory study of college students' opinions about the factors contributing to disparities in education and education outcomes. Both the literature review and the survey focus solely on the U.S. system of education with no comparisons made to the education system in any other country. The importance of the literature review rests on the illustration of disparities in educational attainment within the U.S. education system and the discussions surrounding these disparities. The survey is important because it provides an appraisal of the assessment that college students have about the U.S. education system. Knowing how college students assess the current education system is crucial to the future of the U.S. education system because they are the future educators and leaders of the U.S.

I chose to assess the education system in Finland and compare it to the education system in the United States because, although Finland has a smaller economy than the U.S., its students have consistently scored higher than U.S. students on an international assessment called the Program for International Student Assessment, or the PISA (Organization for Economic Cooperation and Development [OECD], 2008). The PISA assesses students in different countries to measure what they have learned in school in approximately the last 10 years of their lives. This seems to be a good measure in determining the outcomes of an education system because it measures the knowledge of students who are close to finishing high school.

In addition to tests that measure students' academic performance in each country, other tools are needed to gauge the outcomes of each education system. I explore other statistics, including, but not limited to the following:

- a. The rates of high school dropout and completion in each school system;
- b. The rates of students who continue schooling by attending college;
- c. The dropout and completion rates of these college students;
- d. The employment rates for primary school graduates;
- e. The types of jobs/careers that these graduates pursue; and
- f. The amount of money that the population in each country makes based on level of education.

The examination of each of the factors listed above provides us with a specific illustration of the state of each country and the impact that the education system in each country has on the job market. This provides important information about the disparities, or lack thereof, in educational attainment in the U.S. and in Finland.

In addition to using statistics related to each system, I also examine the U.S. and Finland by means of sources that explain:

- a. The social, political, and cultural background of the systems of education in the United States and Finland;
- b. The specific impact of the Basic Education Act on the current system of education in Finland;
- c. The specific impact of the "No Child Left Behind" Act on the current system of education in the US;
- d. The structure of the education systems in the US and in Finland;

- e. The goals and objectives of each system;
- f. Government expenditures on education in each country; and
- g. Academic ratings for the U.S. and Finland from the PISA.

Investigating these provisions gives a well-rounded view of the education systems in each country and how they function. By assessing these factors, I should gain a reliable picture of the outcomes of the education systems in the U.S. and in Finland.

Background

United States

To begin, I outline some of the main characteristics of the United States. The Central Intelligence Agency (CIA) estimates that the U.S. has a population of approximately 307,212,123 people and is the third largest country in the world (2009). The U.S. population is approximately 58.5 times larger than that of Finland. The U.S. has 97 males per 100 females. The urban population consists of 82% of the total population. Approximately 79.96% of the U.S. population is white, 15.1% Hispanic, 12.85% black, 4.43% Asian, 1.61% two or more races, 0.97% American Indian or Alaskan native, and 0.18% native Hawaiian or other Pacific islander (2007). The CIA estimates that Protestants make up 51.3% of the U.S. population, Roman Catholics comprise 23.9%, Mormons encompass 1.7%, other Christians make up 1.6%, Jewish comprise 1.7%, Buddhists comprise 0.7%, Muslims comprise 0.6%, other/unspecified makes up 2.5%, unaffiliated encompass 12.1% of the population, and those with no religion make up 4% of the total population (2007). The official language of the U.S. is English, and 82.1% of the population speaks English, while 10.7% speak Spanish.

The literacy level is defined by those aged 15 and over who can read and write (CIA, 2009). Ideally, the literacy rate in any country should be 100% because there is no reason why

anyone over age 15 would not be able to read or write. According to the CIA, the literacy rate in the U.S. is 99% (2003). The school life expectancy is 16 years from primary to tertiary schooling. The U.S. spends approximately 5.3% of its gross domestic product (GDP) on education, and it ranks 57 in comparison to the rest of the world. The U.S. has a per capita GDP of \$46,400 and an official exchange rate GDP of \$14.27 trillion. The labor force contains 154.5 million (includes unemployed) (2009). This is approximately 50% of the total U.S. population. The breakdown of the labor force includes: farming, forestry, and fishing (22.6%); manufacturing, extraction, transportation, and crafts (24.8%); managerial, professional, and technical (37.3%); sales and office (24.2%); other services (17.6%). The unemployment rate is 9.4% (2009 est.) country comparison to the world: 109. Twelve percent of the population is below the federal poverty line (U.S. federal poverty level is \$13,530.00).

According to the CIA World Factbook (2009), the U.S. is a Constitution-based federal republic with a strong democratic tradition. The U.S. is divided into 50 states and one district, and dependent areas are American Samoa, Baker Island, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Northern Mariana Islands, Palmyra Atoll, Puerto Rico, Virgin Islands, and Wake Island. The U.S. gained independence from Britain on July 4, 1776, and the U.S. Constitution was enacted in 1789. Any legal U.S. citizen 18 years of age or older has the right to vote. U.S. citizens elect the President, Chief of State and head of government, currently Barack H. Obama (since January 20, 2009), who serves a four-year term and may serve a second term. The Vice President is Joseph Biden, and the president and vice president are elected on the same ticket by a college of representatives from each state.

The United States Education System

Primary (elementary), upper primary/lower secondary (middle), and secondary (high) schools are governed by local school districts. Primary school usually takes the form of grades 1 through 4-7, middle school usually includes grades 6-8, and secondary school typically includes grades 9-12. The principal, or headmaster in some cases, is in charge of the school, teachers and teachers' assistants work in the schools, and other administrative staff usually work in schools, including counselors, librarians, computer/technology specialists, school nurses, food services staff, and custodial staff (U.S. Department of Education, 2008). Within school districts, policies and regulations tend to be uniform, but these may vary among school districts. States usually put some regulations on the curriculum of schools within the entire state, but this may also vary between states. This is the basic structure of the public school system in the U.S.

In addition to public schools, there are also private schools in the U.S. Private primary or secondary schools are governed by their own board of trustees and receive no funding from the state or government (U.S. Department of Education, 2008). Private schools determine their own curricula and academic policies, and they make their own hiring and admissions policies. While private schools have the room to act independently of the state education regulations, they usually keep their standards close enough to the standards of public schools within their area to easily facilitate transfer students and make sure students are as prepared for education at other institutions in the area (i.e., a student coming from a private middle school to a public high school will not have difficulty adjusting to the curriculum) and for postsecondary education.

Along with public and private schools, charter schools, magnet schools, and homeschooling also exist within the U.S. education system. Over 3000 charter schools currently exist in the U.S. Charter schools are public schools established by parent groups, communities, or organizations to fulfill specific needs, serve special populations, or adhere to special curricula

or instructional practices (U.S. Department of Education, 2008). Charter schools receive public funding, but they have room to operate independent of district regulations. Charter schools operate according to an agreement, or charter, outlining the mission, program, student population, and methods of evaluation (U.S. Department of Education). Charters usually last 3-5 years and can be renewed. Another type of school recognized within the U.S. education system is the magnet school. Magnet schools are public schools that have a special educational theme, mode of instruction, subject emphasis, or other characteristic, and they are not limited to enrolling students from a specific district (U.S. Department of Education). The purpose of magnet schools is to promote equal access to unique educational opportunities by minority students who would not otherwise have this opportunity. Finally, homeschooling is also recognized within the U.S. education system. The U.S. has a long history of homeschooling, as this was the first method of teaching before schools were built (U.S. Department of Education). According to the U.S. Department of Education, there are over one million students being homeschooled every year. Parents or tutors are usually responsible for homeschooling students, and homeschooling is regulated by each state. Students successfully completing their education through homeschooling are recognized as secondary school graduates. Each state provides homeschooling services, materials, and resources, including professional tutors, which contribute to the effective education of students that are homeschooled.

The U.S. education system is based on a variety of laws at the federal level, the state level, and the level of the individual institution (U.S. Department of Education, 2008). The U.S. government has a narrow role in running the education system, as this is primarily in the hands of each educational institution or district. The duty of the U.S. government is limited to:

- Exercising leadership in promoting educational policies and reform efforts of national scope;
- Administering federal assistance programs authorized and appropriated by Congress;
- Enforcing federal civil rights laws as they pertain to education;
- Providing information and statistics about education at the national and international levels; and
- Providing technical expertise to the U.S. Department of State, U.S. Department of Homeland Security, other federal agencies and Executive Office of the President in conducting the foreign affairs of the United States as these pertain to education and within the limited scope of federal power in this area (U.S. Department of Education).

The U.S. government has a very limited role in the structuring of the education system. There is no mention of specific curriculum that should be included in all schools, there is no mention of the requirements that all students, teachers and schools should meet, and there is no mention of any direct interaction between the federal government and individual institutions. This means that most of the structure and organization of the U.S. education system is dependent upon smaller institutions, and this could explain some of the disparities in educational attainment. If there is minimal regulation at the federal level, states, districts, and/or schools have the room to function independently and have differing organization and curriculum. The federal government does not: set any standards for academic content; set standards for admission, enrollment, or graduation of students; inspect, accredit, or license educational institutions; or determine educational budgets for states, localities, or institutions (U.S. Department of Education).

Without the regulation of these crucial elements of the education system, the U.S. government fails at creating a unified system of education.

As briefly mentioned above, the prime operation of the U.S. educational institution is based at the individual level. The institution is responsible for all academic matters with very little government regulation and restriction. There are nearly 117,000 primary and secondary schools, nearly 6,000 postsecondary career and technical schools, and just below 4,000 degree-

granting institutions of higher education in the U.S. (U.S. Department of Education, 2008). If we have specific education guidelines and regulations at the individual level, this means that primary and secondary school students throughout the U.S. may be taught using 117,000 different teaching methods, theoretically. If each educational institution is responsible for setting guidelines for itself, this could very well be the result: students from different high schools may have the same diploma that is meant to represent their completion of a basic education, but students obtaining diplomas from one institution may know the basics of quantum physics, while students obtaining diplomas from the school ten miles away may only know basic algebra. This is a problem.

While this thesis focuses solely on secondary high school, it should be noted that this problem persists in institutions of higher education as well. Students may graduate with the same degree, but the degree does not mean that these students have the same knowledge base. This issue is one of great severity in any case, but it achieves its highest level of severity when it involves disparities in educational attainment among colleges and universities because this is the training that students receive that is meant to prepare many of them for specific careers immediately after completion. An example of one of these careers is an educator. The level of education an education major receives matters profoundly, as it *directly* influences the level of education that the next set of students will receive wherever this future educator decides to teach. Going back to secondary education, the level of education that a high school student receives also has a profound impact on the student's ability to excel in the college program that he or she chooses. Two students can graduate as the valedictorian of their classes, and they may go to the same college or university, only to discover that life in college will be much more difficult for one of these students because this student comes from a school that did not provide the same

level of quality education as the other valedictorian's school. Here, I discuss the theory and possibilities of the consequences of educational disparities, but this theory and possibility discussed above represents the reality. This reality begins with a lack of country-wide regulations being imposed onto schools. With individual school boards constructing an educational system and format devoid of much federal provisions, the quality of education systems remains the same: inconsistent.

The same scenario applies to early education programs. Preschool, or early childhood education, is available in almost every community in the U.S. and most states require that public early education programs are available through school districts (U.S. Dept. of Education). Similar to primary, secondary and postsecondary educational institutions, there are no specifications as to what should be taught within early education programs in the U.S. to prepare children for elementary schools. Just as this lack of uniformity within the U.S. education system creates disparities in educational attainment in secondary and postsecondary educational institutions, this creates disparities at the start of primary education. This may be the most crucial aspect of education because the rest of a student's education depends on this foundation. The main point is that it is problematic for educational institutions to develop an educational curriculum and structure individually: this leads directly to educational disparities. Some of these disparities may be alleviated by state regulation of educational institutions.

The state is held more much accountable than the federal government for organizing schools and formulating curriculum in schools. The degree to which states and territories control education depends on the constitutions, statutes, and regulations imposed by each state. Among the duties performed by state authorities are:

- Providing funding for public education at all levels;

- Licensing or chartering private schools and public and private institutions of higher education;
- Providing oversight and guidance to local school boards;
- Setting broad policies for school-level curricula, texts, standards, and assessments (but not higher education);
- Licensing school teachers and other educational personnel;
- Overseeing the provision of educational services for persons living with disabilities, adults needing basic education services, and other special needs populations;
- Setting the standards for examining and licensing persons seeking to work in any regulated professional occupation; and
- Electing or appointing some or all of the members of the governing boards of public higher education institutions and state boards of education (U.S. Department of Education, 2008).

Each state is responsible for organizing and regulating schools, while there is some variability among school districts within states. Each individual institution is left with much of the responsibility of structuring the institution and formulating the curriculum. The federal government does have a limited role in the organization, structuring, and formulation of education within schools, but the U.S. government has created education legislation, primarily aimed to eliminate disparities between schools, districts, and states. In 1965, President Lyndon B. Johnson passed the Elementary and Secondary Education Act (ESEA) as a part of the *War on Poverty*. ESEA emphasizes equal access to education and establishes high standards and accountability for schools. This law authorizes federally funded education programs that are administered by each state. In 2002, Congress amended ESEA and reauthorized it as the No Child Left Behind Act (Office of Superintendent of Public Instruction, 2009). The No Child Left Behind (NCLB) Act, which is 670 pages long, is the most well known piece of legislation impacting education in the U.S.

No Child Left Behind in the U.S.

The goal of the No Child Left Behind Act is “To close the achievement gap with accountability, flexibility, and choice, so that no child is left behind” in the U.S. education

system (Weekly Compilation of Presidential Documents, 2002). NCLB highlights education factors including: improving the academic achievement of the disadvantaged; preparing, training, and recruiting high quality teachers and principals; language instruction for limited English proficient and immigrant students; promoting informed parental choice and innovative programs; flexibility and accountability of schools; Indian, native Hawaiian, and Alaska native education; and the Impact Aid Program. Each of the provisions outlined in NCLB are basically references to the funds that will be given to specific programs to meet the requirements outlined by NCLB by the deadlines outlined in this act. This act focuses on specific groups that should not be “left behind” other high-achieving students, but there is no focus on setting specific standards for all students, and there is no focus on these high-achieving students. There are programs listed that are meant to assist schools in educating low-achieving groups of students, but there is nothing that aims at attempting to understand why these low-achieving groups of students have a lower level of educational attainment, lower test scores, etc. There is no mention of the structure of each of the programs outlined. The amounts of money are given, and the requirements that each program should meet are given, but there is no specific breakdown of how the funds should effectively be utilized. Money is given to programs that are meant to improve literacy, but there is no mention of how schools can work with these programs to effectively improve literacy. Also, the standards that schools should meet are provided, but there is no mention of specific programs within schools or curricula that might help schools meet these standards. Upon examining NCLB, we see the recurring theme in the U.S. education system: inconsistency. As we know, this inconsistency in the formulation and regulation of educational institutions leads to the disparities in educational achievement.

After taking a look at the U.S. system, questions arise concerning the success of this education system. How successful is the U.S. education system if there are constant disparities in educational attainment? How do we gauge the overall success of any education system? How does the U.S. compare to other systems of education? The latter question may be answered by comparing the scores of U.S. students to students from other countries on international assessments. One international assessment referenced earlier, called the Programme for International Student Assessment (PISA), students from over 30 countries, including the U.S. and Finland, were surveyed, and Finland stands out because Finland's students have scored the highest on this assessment. Since the results of this assessment point to Finland as having the most successful education system (based on educational achievement on this assessment only), comparing Finland's education system to the U.S. education system could provide valuable insight about the structure of the U.S. education system and the source of educational disparities.

Finland

The CIA estimates that Finland has a population of approximately 5,250,275 people. Finland's country population comparison to the world is 112, being geographically the size of the U.S. state of Montana. Finland's population is 1.71% of the U.S. population. Finland has 96 males per 100 females. The urban population comprises 63% of the total population in Finland (2003). Finland's population is 93.4% Finn, 5.6% Swede, 0.5% Russian, 0.3% Estonian, 0.1% Roma, and 0.1% Sami (2006). The official languages spoken in Finland are Finnish (91.2% of total population) and Swedish (5.5%), and about 3.3% of the population speaks Sami or Russian. Those who belong to the Lutheran Church of Finland comprise 82.5% of the total population, members of the Orthodox Church make up 1.1%, other Christians make up 1.1%, 0.1% have another religion not listed, and 15.1% of the population has no religion. The entire Finnish

population is literate by age 15, and the school life expectancy is 17 years. Finland spends 6.4% of its GDP on education, which ranks 33 in the world. Finland has a GDP of \$238.2 billion and a per capita GDP of \$34,900. The labor force in Finland is approximately 2.68 million people, which is roughly %51 of the total population. The labor force is composed of: agriculture and forestry (18.2%); industry (15.9%); construction (6.9%); commerce (15.9%); finance, insurance, and business services (14.5%); transport and communications (6.9%); and public services (32.7%). The unemployment rate in Finland was 6.4% in 2008 and estimated to be about 8.5% in 2009. In Finland, class is difficult to identify because of the wide use of social service programs and a high level of income equality (Encyclopedia of the Nations, 2009).

Finland is a republic with six provinces. Finland gained independence from Russia on December 6, 1917, and Finland's Constitution was enacted in 2000. Any citizen aged 18 or older has the right to vote in Finland. The chief of state is President Tarja Halonen (since March 1, 2000), the Prime Minister is Matti Vanhanen, and the Deputy Prime Minister is Jyrki Katainen. The president is elected by popular vote every 6 years, and is eligible for a second term. The President appoints the prime minister and deputy prime minister. Finland differs greatly from the U.S. in country composition, but it is still important to examine the structure of Finland's education system. Even though the countries differ in many areas, the education systems can still be used for comparison.

Finland's Education System

The Finnish school system is somewhat similar to the U.S. system of education. Students start school when they are 6 years old in Finland's system, and they also have the opportunity for preschool education (International Association of Universities [IAU], 2006). Within the Finnish system, students attend school until they are 16 years of age. Upon completing 9-year basic

education, students are able to choose between general upper secondary education and vocational upper secondary education. General upper secondary school, called lukio or gymnasiet in Finland, provides general education leading to the national Matriculation examination (ylioppilastutkinto or studentexamen), which gives eligibility to all forms of higher education (IAU, 2006). Vocational upper secondary education, called ammatillinen koulutus or yrkesutbildning, may be organized in vocational education institutions or in the form of apprenticeship training. A Vocational Qualification (ammattillinen perustutkinto/yrkesinriktad grundexamen) takes three years to complete, and it gives eligibility to all forms of higher education (IAU, 2006). Finland's vocational education and training also allows for students to obtain Further Vocational Qualifications (ammattitutkinto or yrkesexamen) and Specialist Vocational Qualifications (erikoisammattitutkinto or specialyrkesexamen), which can only be taken as competence-based examinations and are mainly intended for employed adults (IAU, 2006). While Finland's education is similar to that of the U.S. when it comes to primary education (elementary and secondary schooling), it differs in that students have an opportunity to prepare for institutions of higher education after completing primary education, not during this process. Along with this, the education legislation in Finland should also be examined to find the differences in the U.S. education legislation and the Finnish education legislation.

Basic Education in Finland

In contrast to the 670 page No Child Left Behind Act in the U.S., the Basic Education Act is 22 pages long. The purpose of this act is to “support pupils’ growth into humanity and into ethically responsible membership of society and to provide them with knowledge and skills needed in life” (Basic Education Act, 2004). The statement at the opening of the NCLB Act entails bridging the gaps between high and low achieving students. The Basic Education Act

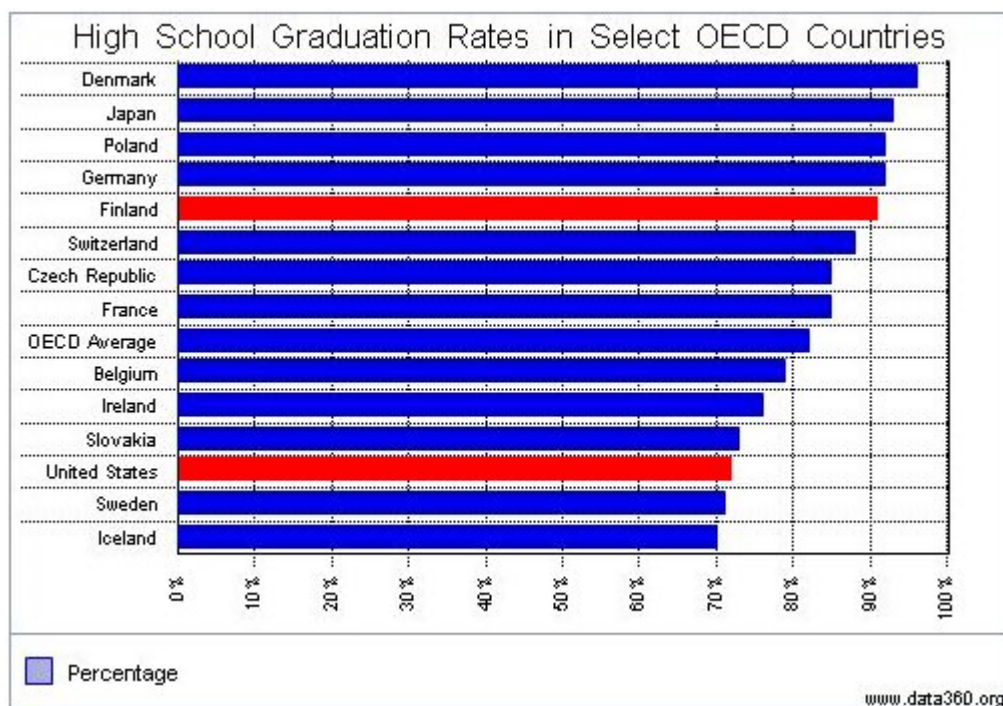
states that education should follow a “unified national core curriculum” that is outlined in this act, and that education providers “shall cooperate with the pupils’ parents/careers” (Basic Education Act). The Finland school curriculum is specified and includes the following core subjects: mother tongue and literature; the second national language; foreign languages; environmental studies; health education; religious education or ethics; history; social studies; mathematics; chemistry; biology; geography; physical education; music; arts; crafts; and home economics. Provided by the Basic Education Act of Finland, all children have the right to obtain pre-primary education (pre-schooling). In addition, teaching, the necessary textbooks and learning materials, and school equipment and other materials shall be free of charge to the student. With this information on the systems in the U.S. and in Finland, an analysis can be made comparing the advantages and disadvantages of each system.

Comparing the United States and Finland

There are multiple areas where the U.S. and Finland are dissimilar when looking at country characteristics alone. For one, the U.S. is over 50 times larger than Finland in population. Also, the total GDP of the U.S. is about \$14.27 trillion, and Finland’s is \$238.2 billion, which again marks a large difference between these nations. At this level, the differences in population and in economy highly impact the ways that each of these societies function. For one, the size of the U.S. and the homogeneity of Finland may account for some of the differences in educational disparities. Also, Finland provides social welfare at a much wider level than does the U.S., which reduces income disparities in Finland. Even with the differing country characteristics, there are some notes that may be taken from looking at the provisions of the No Child Left Behind Act and the Basic Education Act.

One major difference between the No Child Left Behind Act in the U.S. and the Basic Education Act in Finland is apparent even in the title given to each—one refers to disparities within an education system, while the other refers to equity within an education system. NCLB specifies many of the provisions relating to the amount of money that will be given to schools and other organizations to try to “close the gaps between high- and low-achieving students,” which can be detrimental to high-achieving students if educators are focused solely on low-achieving students and making sure that there are not huge differences in educational achievement (Weekly Compilation of Presidential Documents, 2002). Very different from the NCLB Act, the Basic Education Act focuses on the specific criteria of the education curriculum and, and the purpose of the entire education system, not just focusing on specific groups, but outlining the same education for all, even though education providers may tailor the education slightly within his or her own syllabus (Basic Education Act, 2004). Here, the obvious difference on one hand is the focus on money and on eliminating disparities in achievement by the No Child Left Behind Act and, on the other hand, the focus on a specific curriculum and this being provided to all students free of charge to the student.

The high school graduation rates in selected OECD countries (including the U.S. and Finland) are presented in the graph below:



The OECD country with the top high school graduation rate is Denmark with 96%, in Finland the high school graduation rate is 91%, and in the U.S. the graduation rate is 72%. The Conference Board of Canada (2010) compares the rates of the number of college graduates in 17 countries (Canada, Finland, U.S., Australia, Austria, Belgium, Denmark, France, Germany, Ireland, Italy, Japan, Netherlands, Norway, Sweden, Switzerland, and U.K.), and shows that Canada is at the top with 23.7% of its total population aged 25-64 with a college degree, 15.4% of Finland's population aged 25-64 has a college degree, and 9.4% of the U.S. population aged 25-64 has a college degree.

Assessments

Now that we have examined the education systems in each country directly, background information is provided on the assessments used here for a greater understanding of how they are administered, used, and interpreted. I will begin by providing an explanation of the PISA, which is used to measure educational outcomes in this review. I will also explain *Measuring Up 2008*:

The National Report Card on Higher Education issued by the U.S. National Center for Public Policy and Higher Education, which will be used to assess the educational disparities in the U.S. education system.

Program for International Student Assessment

First, it should be noted that, while the Program for International Student Assessment is prominently used for country comparison, it must be noted that it is only one international assessment and is not infallible. Researchers from the Urban Institute have pointed to possible flaws in the PISA: social scientists may have incorrectly interpreted the results from the PISA; different countries administer the test to different populations; and the PISA is given on the basis of age and not school grade. In addition, PISA focuses on literacy and how concepts and skills learned in the classroom are applied to real life circumstances, thus testing basic skills and not specific knowledge. It is important to keep this in mind when using the PISA as a basis for comparison of academic outcomes.

This test has been administered every 3 years since the year 2000 and is given to 15-year-olds in many countries across the world. This age group is assessed because students are nearing the end of their compulsory education in most of the countries assessed (OECD, 2008). PISA provides internationally comparative information on the reading, mathematics and science literacy of students in various countries (Stephens & Coleman, 2007). The goal of the PISA is to measure the accomplishments of education systems by the time most students are finishing up their primary education. PISA focuses on literacy and how concepts and skills learned in the classroom are applied to real life circumstances. The PISA is sponsored by the Organization for Economic Cooperation and Development (OECD), which represents the world's most industrialized countries. The PISA reports scores at the national level, and even though 57

countries participate in the PISA, only the results from the 30 countries that are members of the OECD are used to compute the international average (Stephens & Coleman, 2007). PISA specifically assesses students at the age of 15, regardless of school grade, while some other international assessments survey students based on grade level. Within the scientific evaluation, PISA assesses the ability to identify scientific issues, the ability to explain phenomena scientifically, the ability to use scientific evidence, the level of knowledge about science, knowledge of earth and space systems, knowledge of living systems, and knowledge of physical systems. Within the scientific evaluation, PISA assesses the ability to identify scientific issues, the ability to explain phenomena scientifically, the ability to use scientific evidence, the level of knowledge about science, knowledge of earth and space systems, knowledge of living systems, and knowledge of physical systems. This is important to note because schools in the U.S. may not have the same focus or even teach some of these specific areas of scientific knowledge.

There were 5,611 students sampled for the 2006 PISA, and 166 schools represented by these students. The countries that participated in the 2006 PISA were: Australia, the Czech Republic, Finland, Greece, Ireland, Japan, Korea, Mexico, Portugal, Switzerland, Turkey (all OECD members who only participated in the PISA); Argentina, Azerbaijan, Brazil, Chile, Colombia, Croatia, Estonia, Jordan, Kyrgyz Republic, Macao-China, the Republic of Montenegro, the Republic of Serbia, Thailand, Tunisia, Uruguay (all non-OECD members who participated in the PISA only); Austria, Belgium, Canada, Denmark, France, Germany, Hungary, Iceland, Italy, Luxemburg, the Netherlands, New Zealand, Norway, Poland, the Slovak Republic, Spain, Sweden, the United Kingdom, and the United States (all members of the OECD who participated in the PISA and in the PIRLS). PISA 2006 shows that there are no significant

changes in U.S. students' mathematics scores since 2003 (Stephens & Coleman, 2007). Also, the U.S. score is below the average for all the member countries of the OECD.

In science, Finland is ranked number 1 among all the OECD countries with an average student score of 563, while the U.S. is ranked number 18 with an average student score of 489. When looking at the average scores of students taking the 2006 PISA, Finland is still ranked number 1, while the U.S. ranking falls to 24. The scores on the 2006 PISA are presented below.

Mean Score on the Reading Scale

	All students			
	Mean score		Standard deviation	
	Mean	S.E.	S.D.	S.E.
OECD				
Australia	513	(2.1)	94	(1.0)
Austria	490	(4.1)	108	(3.2)
Belgium	501	(3.0)	110	(2.8)
Canada	527	(2.4)	96	(1.4)
Czech Republic	483	(4.2)	111	(2.9)
Denmark	494	(3.2)	89	(1.6)
Finland	547	(2.1)	81	(1.1)
France	488	(4.1)	104	(2.8)
Germany	495	(4.4)	112	(2.7)
Greece	460	(4.0)	103	(2.9)
Hungary	482	(3.3)	94	(2.4)
Iceland	484	(1.9)	97	(1.4)
Ireland	517	(3.5)	92	(1.9)
Italy	469	(2.4)	109	(1.8)
Japan	498	(3.6)	102	(2.4)
Korea	556	(3.8)	88	(2.7)
Luxembourg	479	(1.3)	100	(1.1)
Mexico	410	(3.1)	96	(2.3)
Netherlands	507	(2.9)	97	(2.5)
New Zealand	521	(3.0)	105	(1.6)
Norway	484	(3.2)	105	(1.9)
Poland	508	(2.8)	100	(1.5)
Portugal	472	(3.6)	99	(2.3)
Slovak Republic	466	(3.1)	105	(2.5)
Spain	461	(2.2)	89	(1.2)
Sweden	507	(3.4)	98	(1.8)
Switzerland	499	(3.1)	94	(1.8)
Turkey	447	(4.2)	93	(2.8)
United Kingdom	495	(2.3)	102	(1.7)
United States	m	m	m	m

OECD total	484 (1.0)	107 (0.7)
OECD average	492 (0.6)	99 (0.4)
Partners		
Argentina	374 (7.2)	124 (3.7)
Azerbaijan	353 (3.1)	70 (2.1)
Brazil	393 (3.7)	102 (3.4)
Bulgaria	402 (6.9)	118 (4.0)
Chile	442 (5.0)	103 (2.5)
Colombia	385 (5.1)	108 (2.4)
Croatia	477 (2.8)	89 (2.1)
Estonia	501 (2.9)	85 (2.0)
Hong Kong-China	536 (2.4)	82 (1.9)
Indonesia	393 (5.9)	75 (2.4)
Israel	439 (4.6)	119 (2.8)
Jordan	401 (3.3)	94 (2.3)
Kyrgyzstan	285 (3.5)	102 (2.5)
Latvia	479 (3.7)	91 (1.8)
Liechtenstein	510 (3.9)	95 (4.0)
Lithuania	470 (3.0)	96 (1.5)
Macao-China	492 (1.1)	77 (0.9)
Montenegro	392 (1.2)	90 (1.1)
Qatar	312 (1.2)	109 (1.1)
Romania	396 (4.7)	92 (2.9)
Russian Federation	440 (4.3)	93 (1.9)
Serbia	401 (3.5)	92 (1.7)
Slovenia	494 (1.0)	88 (0.9)
Chinese Taipei	496 (3.4)	84 (1.8)
Thailand	417 (2.6)	82 (1.8)
Tunisia	380 (4.0)	97 (2.5)
Uruguay	413 (3.4)	121 (2.0)

Source: Organization for Economic Cooperation & Development

Mean Scores on the Mathematics Scale

	All students			
	Mean score		Standard deviation	
	Mean	S.E.	S.D.	S.E.
OECD				
Australia	520	(2.2)	88	(1.1)
Austria	505	(3.7)	98	(2.3)
Belgium	520	(3.0)	106	(3.3)
Canada	527	(2.0)	86	(1.1)
Czech Republic	510	(3.6)	103	(2.1)
Denmark	513	(2.6)	85	(1.5)
Finland	548	(2.3)	81	(1.0)
France	496	(3.2)	96	(2.0)
Germany	504	(3.9)	99	(2.6)
Greece	459	(3.0)	92	(2.4)
Hungary	491	(2.9)	91	(2.0)
Iceland	506	(1.8)	88	(1.1)
Ireland	501	(2.8)	82	(1.5)

Italy	462	(2.3)	96	(1.7)
Japan	523	(3.3)	91	(2.1)
Korea	547	(3.8)	93	(3.1)
Luxembourg	490	(1.1)	93	(1.0)
Mexico	406	(2.9)	85	(2.2)
Netherlands	531	(2.6)	89	(2.2)
New Zealand	522	(2.4)	93	(1.2)
Norway	490	(2.6)	92	(1.4)
Poland	495	(2.4)	87	(1.2)
Portugal	466	(3.1)	91	(2.0)
Slovak Republic	492	(2.8)	95	(2.5)
Spain	480	(2.3)	89	(1.1)
Sweden	502	(2.4)	90	(1.4)
Switzerland	530	(3.2)	97	(1.6)
Turkey	424	(4.9)	93	(4.3)
United Kingdom	495	(2.1)	89	(1.3)
United States	474	(4.0)	90	(1.9)
OECD total	484	(1.2)	98	(0.7)
OECD average	498	(0.5)	92	(0.4)
Partners				
Argentina	381	(6.2)	101	(3.5)
Azerbaijan	476	(2.3)	48	(1.7)
Brazil	370	(2.9)	92	(2.7)
Bulgaria	413	(6.1)	101	(3.6)
Chile	411	(4.6)	87	(2.2)
Colombia	370	(3.8)	88	(2.5)
Croatia	467	(2.4)	83	(1.5)
Estonia	515	(2.7)	80	(1.5)
Hong Kong-China	547	(2.7)	93	(2.4)
Indonesia	391	(5.6)	80	(3.2)
Israel	442	(4.3)	107	(3.3)
Jordan	384	(3.3)	84	(2.0)
Kyrgyzstan	311	(3.4)	87	(2.1)
Latvia	486	(3.0)	83	(1.6)
Liechtenstein	525	(4.2)	93	(3.2)
Lithuania	486	(2.9)	90	(1.8)
Macao-China	525	(1.3)	84	(0.9)
Montenegro	399	(1.4)	85	(1.0)
Qatar	318	(1.0)	91	(0.8)
Romania	415	(4.2)	84	(2.9)
Russian Federation	476	(3.9)	90	(1.7)
Serbia	435	(3.5)	92	(1.8)
Slovenia	504	(1.0)	89	(0.9)
Chinese Taipei	549	(4.1)	103	(2.2)
Thailand	417	(2.3)	81	(1.6)
Tunisia	365	(4.0)	92	(2.3)
Uruguay	427	(2.6)	99	(1.8)

Source: Organization for Economic Cooperation & Development

Mean Scores on the Science Scales

	All students
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	Mean score		Standard deviation	
	Mean	S.E.	S.D.	S.E.
OECD				
Australia	527	(2.3)	100	(1.0)
Austria	511	(3.9)	98	(2.4)
Belgium	510	(2.5)	100	(2.0)
Canada	534	(2.0)	94	(1.1)
Czech Republic	513	(3.5)	98	(2.0)
Denmark	496	(3.1)	93	(1.4)
Finland	563	(2.0)	86	(1.0)
France	495	(3.4)	102	(2.1)
Germany	516	(3.8)	100	(2.0)
Greece	473	(3.2)	92	(2.0)
Hungary	504	(2.7)	88	(1.6)
Iceland	491	(1.6)	97	(1.2)
Ireland	508	(3.2)	94	(1.5)
Italy	475	(2.0)	96	(1.3)
Japan	531	(3.4)	100	(2.0)
Korea	522	(3.4)	90	(2.4)
Luxembourg	486	(1.1)	97	(0.9)
Mexico	410	(2.7)	81	(1.5)
Netherlands	525	(2.7)	96	(1.6)
New Zealand	530	(2.7)	107	(1.4)
Norway	487	(3.1)	96	(2.0)
Poland	498	(2.3)	90	(1.1)
Portugal	474	(3.0)	89	(1.7)
Slovak Republic	488	(2.6)	93	(1.8)
Spain	488	(2.6)	91	(1.0)
Sweden	503	(2.4)	94	(1.4)
Switzerland	512	(3.2)	99	(1.7)
Turkey	424	(3.8)	83	(3.2)
United Kingdom	515	(2.3)	107	(1.5)
United States	489	(4.2)	106	(1.7)
OECD total	491	(1.2)	104	(0.6)
OECD average	500	(0.5)	95	(0.3)
Partners				
Argentina	391	(6.1)	101	(2.6)
Azerbaijan	382	(2.8)	56	(1.9)
Brazil	390	(2.8)	89	(1.9)
Bulgaria	434	(6.1)	107	(3.2)
Chile	438	(4.3)	92	(1.8)
Colombia	388	(3.4)	85	(1.8)
Croatia	493	(2.4)	86	(1.4)
Estonia	531	(2.5)	84	(1.1)
Hong Kong-China	542	(2.5)	92	(1.9)
Indonesia	393	(5.7)	70	(3.3)
Israel	454	(3.7)	111	(2.0)

Jordan	422 (2.8)	90 (1.9)
Kyrgyzstan	322 (2.9)	84 (2.0)
Latvia	490 (3.0)	84 (1.3)
Liechtenstein	522 (4.1)	97 (3.1)
Lithuania	488 (2.8)	90 (1.6)
Macao-China	511 (1.1)	78 (0.8)
Montenegro	412 (1.1)	80 (0.9)
Qatar	349 (0.9)	84 (0.8)
Romania	418 (4.2)	81 (2.4)
Russian Federation	479 (3.7)	90 (1.4)
Serbia	436 (3.0)	85 (1.6)
Slovenia	519 (1.1)	98 (1.0)
Chinese Taipei	532 (3.6)	94 (1.6)
Thailand	421 (2.1)	77 (1.5)
Tunisia	386 (3.0)	82 (2.0)
Uruguay	428 (2.7)	94 (1.8)

Source: Organization for Economic Cooperation & Development

When looking at the results of the PISA, we see that students in the U.S. score much lower than students in Finland, and that the student average in the U.S. is also below the OECD average.

While the PISA is only one assessment and may be flawed, it is still important to note that U.S. students are not doing as well as students in many other countries, including Finland. There is evidence that the PISA selects the brightest students in some of the other countries and that the student composition is mixed in others. Even if this is the case, with the U.S. being a “world power,” should the lowest achieving students in the U.S. not be able to compete with students from other countries, highest-achieving or not? Ideally, the U.S. education system should produce students who can compete internationally within the realm of higher education, and it should produce workers who can compete internationally, or even just nationally, for jobs. Even if the assessment is flawed, it still brings light to some of the problems within the U.S. education system, resulting from educational disparities. Along with the PISA, other sources point out problems within the U.S. education system. One of these sources is the *National Report Card*.

National Report Card

The *Measuring Up 2008 National Report Card on Higher Education* is produced by the National Center for Public Policy and Higher Education, which is an independent, non-profit organization with no affiliations to any institutions of higher education or government agencies. State performance is graded in the areas of: preparation for college, participation in higher education, affordability, completion, benefits of higher education, and learning. This report shows that the U.S. ranks number 7 in the percent of young adults (aged 18-24) enrolled in college in comparison to the other OECD countries with 34 percent. Korea ranks number 1 with 53 percent, Greece ranks number 2 with 50 percent of 18-24 year olds enrolled in college, and Finland ranks number 9 with 32 percent. The U.S. ranks number 15 when looking at the percent of certificates and degrees awarded to students enrolled in college with 18 percent. Australia, Japan, and Switzerland all have 26 percent of students obtaining degrees or certificates, and Finland ranks number 27 with 13 percent. When looking at the percent of adults aged 35-64 holding an associate's degree or higher, the U.S. ranks number 2 with 39 percent. Canada ranks number 1 with 44 percent, and Finland ranks number 5 with 34 percent. When looking at the percent of adults aged 25-34 holding an associate's degree or higher, the U.S. ranks number 10 with 39%, Canada ranks number 1 with 55%, Japan and Korea follow close behind with 54% and 53%, and Finland ranks number 14 with 38%.

The *National Report Card* not only points out differences among countries, but it also points out educational disparities within the U.S. According to The National Center for Public Policy and Higher Education, the national on-time high school graduation rate was 77.5 percent in 2005, the rate for African Americans was 69.1 percent, and the rate for Hispanics was 72.3 percent. Also, a growing number of high school students are taking longer to complete high school or leaving without obtaining a diploma. Among high school graduates, 73 percent of

whites, 56 percent of blacks, and 58 percent of Hispanics enroll in college the following fall. When looking at disparities based on family income, 91% of high school students from the highest income bracket (above \$100,000), 78% of students in the middle income bracket (\$50,001-\$100,000), and 52% of students from the lowest income bracket (\$20,000 and below) enroll in college. In addition, 59% of white students complete a bachelor’s degree within 6 years, while 47% of Hispanic students, 41% of black students, and 39% of Native American students complete a bachelor’s degree within 6 years.

Measuring Up 2008 also shows the existence of gaps between educational achievement based on racial/ethnic groups by state. For example, in Illinois 95% of white 18-24 year olds have a high school credential, compared to 82% of blacks in the same age group. In Arizona, 93% of whites aged 18-24 have a high school credential, compared to only 69% of Hispanics. In Illinois, 45% of whites aged 18-24 are enrolled in college, while only 29% of blacks aged 18-24 are enrolled in college. This report also shows the disparities in the percentage of students completing a bachelor’s degree within 6 years or entrance. The report highlights some of the major disparities between states. These disparities are outlined below in the figures below.

18-24-Year-Olds with a High School Credential

	Whites	Blacks
Illinois	95%	82%
Kansas	93%	79%
Michigan	91%	80%
New York	95%	85%

Source: National Center for Public Policy and Education

	Whites	Hispanics
Arizona	93%	69%
California	95%	75%
North Carolina	92%	56%
Texas	93%	74%

18-24-Year-Olds Enrolled in College

	White	Black
Connecticut	50%	34%
Illinois	45%	29%
New Jersey	47%	32%
New York	50%	34%

	White	Hispanic
Arizona	40%	18%
California	45%	27%
North Carolina	41%	12%
Texas	39%	24%
Utah	45%	16%

	White	Native Americans
Washington	36%	13%
Alaska	33%	11%
Arizona	40%	16%

Source: National Center for Public Policy and Education

First-time, Full-time Students Completing a Bachelor's Degree within Six Years of College Entrance

	White	Black
Delaware	73%	41%
Illinois	65%	34%
Maryland	73%	42%
Michigan	58%	32%

	White	Hispanic
Illinois	65%	45%
New Jersey	66%	49%
New York	63%	43%
Texas	56%	38%

	White	Black
New Mexico	47%	25%
North Dakota	48%	17%
Washington	56%	41%

National Center for Public Policy & Education

Education Expenditures

At the combined elementary and secondary level in 2005, the United States spent \$9,769 per student, which was 38 percent higher than the OECD average of \$7,065. At the postsecondary level, U.S. expenditures per student were \$24,370, more than twice as high as the OECD average of \$11,821 (Organization for Economic Cooperation and Development, 2008). Finland spent \$6,610 per student on elementary and secondary schooling combined, and \$12,285 per student on postsecondary education in 2005. These numbers are highlighted in comparison with each other and the OECD averages below:

Country	Elementary & Secondary	Postsecondary	Total (% of GDP)	GDP Per Capita
OECD Average	\$7,065	\$11,821	5.8	\$29,659
Finland	\$6,610	\$12,285	6.0	\$30,468
United States	\$9,769	\$24,370	7.1	\$41,674

While the economies of the U.S. and Finland vary, there is no significant difference between education expenditures in the two countries. The examination of education expenditures takes us toward the popular discussion of economic factors in the discussion surrounding educational outcomes. It was noted previously that the education in the U.S. outlines the funding for education programs, and states regulate the amount of money that is allotted to individual educational institutions, and this highlights funding as a possible factor determining the quality of education and educational outcomes. Even though economic factors are a popular focus when discussing educational quality, disparities, and outcomes, I wanted to discover what other factors may contribute to these factors.

Literature Review

Literature is reviewed to assess the current literature that exists concerning college students' views of the most important factors affecting educational disparities. While there is a profound number of sources published addressing factors affecting educational disparities, there is practically no literature published that addresses college students' opinions of factors affecting educational disparities. College students are an important population to focus on when discussing factors affecting educational disparities because they are the world's future leaders, specifically the world's future educators and education policy-reformers. It is important to survey college students to discover the amount of knowledge or the lack of knowledge that college students have about factors that contribute to educational disparities amongst students, amongst districts, and amongst states. I was unable to find any studies focusing specifically on an assessment of college students' opinions of factors affecting educational disparities or even on college students' opinions of educational disparities in general. The literature I present has focused on: the level of educational disparities; the factors contributing to educational disparities among students, among school districts, and among states; the factors contributing to providing a quality education, with an emphasis on economic factors; and the structure of education systems overall.

Because of the lack of literature concerning college students' assessments of the factors contributing to educational disparities and educational outcomes, this literature review focuses just on the educational disparities and outcomes within the U.S. education system. Much literature has been published that exemplifies disparities in educational achievement. Palardy (2008) used data from a large-scale survey conducted by the National Educational Longitudinal Study of 1988 to examine differential school effects among low, middle, and high social class

composed public schools. Palardy recognizes that individual student characteristics—such as ethnicity and gender, family characteristics (including socio-economic status), and academic background—are related to educational achievement and learning. Palardy also outlined the school characteristics that have been found to predict educational outcomes, including school location, school size, type of school (public or private), teacher and parent involvement in decision-making, teaching methods and expectations, and school social and academic climate (e.g., the number of advancement courses offered, the homework load, etc.). Palardy found that students attending low social class schools learned at significantly slower rates than students in middle or upper social class schools.

Much literature has been published outlining economic factors and the contribution to educational disparities and outcomes. Hiram (1974) outlined some factors that contribute to educational outcomes, including: rapid changes in the number of city-dwellers and their employability; diminishing revenues for schools and other public services; serious funding inequities among schools; rising costs of education and other social services; and rising unemployment rates. These factors all point to the importance of economic factors in providing a quality education to students. Another article pointing to the importance of economic factors in shaping educational outcomes concerns education in East Africa. Marcucci, Johnstone, and Ngolovoi (2008) characterize the demands of higher education globally, and they point to the issue that no East African nations have been able to meet these demands on the basis of public education expenditures alone. These researchers specifically examine the dual-track policies for paying for an education, which includes admissions tests that award high-achieving students a free education and grant other students entry on a fee-paying basis. One problem with this is that those who were more economically advantaged were the ones who had more previous

educational opportunities and scored higher on these merit-based exams (2008). Marcucci, Johnstone, and Ngolovoi found that these policies were helpful for some, but they did very little to assist the poor with obtaining a quality higher education. This shows the importance of economic factors in obtaining a quality education, and it shows the disparities in education depending on socio-economic status.

Klein (2008) wrote an article examining the U.S. education budget proposed by former President George H. W. Bush. Klein points out that the \$59.2 billion budget proposed by Bush would not be sufficient to fund special education programs or the No Child Left Behind Act. This budget would also call for cuts in after school programs and the Career and Technical Education program. This is a basic illustration of the focus on money alone as a factor influencing educational outcomes.

Magnuson, Meyers, Ruhm, and Waldfogel (2007) focus on educational disparities among students by examining inequalities in school readiness and the effects that this has on the educational attainment of specific student populations. Researchers examine the increase in education funding to find out whether or not it has had positive impact on educational disparities. Researchers found that children from economically disadvantaged backgrounds experienced larger positive effects from preschool programs than did their peers. Overall, preschool has positive effects on all children, but the effects are more statistically significant for children from economically disadvantaged backgrounds. This study demonstrates the need for preschool programs in reducing or eliminating some of the disparities among students.

Driscoll and Salmon (2008) focus on educational disparities among school districts by examining and explaining how increased state aid for education resulted in greater disparities among school districts in Virginia. Researchers outline a specific policy that was enacted to

increase state spending on education in each school district. This policy was expected to and seemed to be efficient at decreasing disparities between school districts in Virginia. Disparities seemed to be decreasing from 1994-2003, but disparities had gotten worse from 2003-2005, even though more money was being allocated to school districts each year. Researchers found that districts were using the extra money as tax relief instead of using it for school funding, and they found that the districts most likely to do this were the ones who were the lower end of the disparities. This study is important because Driscoll and Salmon defined equity within districts as fiscal capacity, attendance, structure, percent of students eligible for free or reduced lunch, and expenditure per student, which are all factors contributing to disparities and educational outcomes. They also showed that money matters within educational systems, but the use of that money and the structure of education systems also matters.

One piece of literature focusing on educational disparities among states is the proposal introduced by Witte (2007). Witte points out major problems within the U.S. education system and proposes income-targeted preschool vouchers for each state as a possible solution. According to Witte, these vouchers would improve equality and efficiency within the U.S. education system. Witte notes that the highest spending on education is in wealthy areas, and he argues that the state vouchers will fix this disparity because: investment in preschool education has positive educational outcomes; investment in preschool education has been found to have better educational outcomes for low-income students and minority students than other strategies; and a state-level voucher program for preschool is more cost-effective and has better outcomes than other methods.

One piece of literature that focuses on education reform is a study conducted by Hill (2008) which examines how money is spent on education in the U.S. and focuses on how

education spending and the structure of education varies depending on the state system of education. Hill argues that we are putting money into an education system that has no structure, and there is a lack of knowledge about how to use money effectively within education systems in the U.S. to decrease the disparities found within education systems. Hill argues that states need to keep track of how money is spent, how children are being taught, who teaches children, and also which schools, programs, and teachers are most effective and least effective in decreasing disparities within education systems. He also argues for the development of new instructional programs and experimentation with the use of funding in education systems to see what works and get rid of the methods that do not work to decrease disparities.

Grubb, Huerta, and Goe (2006) research the claim that money is the primary determinant of educational outcomes. They point out that debates about money within education typically overshadow debates concerning teaching and learning. They note that spending has increased per student in the U.S., but there are still problems and disparities within education systems. They found it difficult to link funding directly to educational outcomes and resources, and that all discussions involving education need to address the relationship amongst funding, resources, and educational outcomes. They also argue that a conception of educational resources needs to be agreed upon in order to provide a sufficient analysis of this relationship. They show that funding alone does not equate effective educational resources, and that new models of the link amongst educational revenues, resources, and outcomes need to be developed.

To take it a step further, Grubb (2009) examines the level of equality within the U.S. education system. Grubb argues that money is necessary but not sufficient in attempting to fix the disparities within this system. He also argues that there exists a gap between discussions about education on the micro and macro levels, and it is crucial that this gap be bridged. Grubb

acknowledges the role that money plays in contribution to educational disparities and outcomes, but also emphasizes the importance of function of money within the U.S. education system.

Apple (1990) also focuses on the structure of education in the U.S. and the effects that the U.S. economy has on education. Apple evaluates the school as an institution, the forms of knowledge maintained within schools, and the qualities of the educator. These factors are important factors in the analysis of the structure of educational systems. Apple argues that schooling directly affects the economic advancement of society, and that schools contribute to inequality because they are structured in a way to distribute different kinds of knowledge to different groups of students. This provides a basis for understanding how the structure of educational systems can impact educational outcomes and societal outcomes in the case that economic factors are or are not the largest contributor to educational outcomes.

De Marrais and LeCompte (1999) provide a theoretical analysis of education systems, using the perspectives of functionalism, conflict theory, interpretivist theory, and critical theory. They attempt to provide a framework for understanding and explaining the causes of problems existing within the U.S. education system. De Marrais and LeCompte also focus on the organization of schooling, which is one factor that contributes to educational outcomes. They examine school funding on the micro and macro levels, and provide evidence for the effect that these structural factors have on educational outcomes.

These studies have been effective at outlining factors that contribute to educational disparities and outcomes among students, within districts, within states, and the education system overall. I would like to conduct a study to discover the factors that college students believe are the factors determining educational disparities and outcomes, and which of these factors they believe are most important. After learning which factors college students, the people who are

future educators and other world leaders, believe determine educational outcomes we can raise awareness of their knowledge about these factors and affect change in the discussions surrounding the quality of education in the U.S.

Summary of Lit Review

The review of literature shows that the discussion about factors concerning educational disparities and educational achievement does revolve around economic factors. There exist many other factors that contribute to educational outcomes and disparities within the U.S. education system, but the majority of literature focuses on those relating to money. Some researchers recognize the importance of examining how money is used within the U.S. education system and the importance of examining the structure of education systems in evaluating its success or failure. Some researchers also recognize that the curriculum needs more focus within the discussion surrounding education in the U.S. The literature review highlights some of the key factors affecting educational disparities and outcomes, but it would be interesting to know what people perceive are the most important factors determining the quality of education and contributing to educational disparities. For this purpose, an empirical survey was conducted to assess college students' evaluations of the U.S. education system, focusing solely on U.S. high schools.

Method

Students were asked which factors they believe contribute the most to providing students with a quality high school education. They were given eight options (internet access, money spent on each student, diversity of student body, access to computers, class size, teacher salary, updated classroom materials, and teaching methods), and they were able to add any one-three factors they felt necessary in providing a quality education if it was not on the list provided.

Students were also asked how effectively they think that the U.S. education system prepares students to enter the workforce and for college. Students were also asked to rate the level at which their own high schools effectively gave them a quality education based on the factors they chose as most important in providing students with a quality education. These ratings were given on a scale of one to seven, and students were asked to provide an explanation for each rating. Students were also asked what, if anything, needed to be done by U.S. high schools to more effectively prepare students for the job market and for college. Finally, students were asked the primary purpose of pursuing an education at a four-year college or university.

I hypothesized that many Aurora University students would choose money spent on each student as one of the strongest factors contributing to a quality high school education. I do not think that money is the most important factor, but I did hypothesize that many students would think that money is the most important factor in determining a quality education. If this were true, it would mean that countries that have a lower per capita gross domestic product (GDP) than the U.S. should score lower on assessments like the PISA. But this is not the case. With this survey, I set out to answer the following question: Why does the U.S. score so much lower than other developed countries on international assessments like the PISA? I also hypothesized that money does play a role in education outcomes, but only because the U.S. has structured its education system in a way which makes money an important factor. Also, many students may not pick money spent on each student as one of the top three factors in determining a quality education, but they may choose factors directly related to money, such as access to computers and updated classroom materials.

Data

I surveyed a total of 92 participants in the classroom setting at a small private suburban college in the Midwest. The survey sample includes 16 participants who were age 18, 23 participants that were 19 years old, 26 participants that were 20 years old, 13 participants that were 21 years old, 8 participants that were 22 years old, 2 that were 26 years old, one was 28 years old, one was 32 years old, and one was 54 years old with a mean age of 20.44. There were Freshman/first-year students (22 of 92), Sophomore/second-year students (32/92), Junior/third-year students (29/92), and Senior/fourth-year students (7/92) represented in this survey. The majors represented by the participants were Elementary Education (26/92), Criminal Justice (25/92), Psychology (3/92), Business (3/92), Political Science (2/92), History (7/92), Secondary Education (2/92), Nursing (6/92), Health Science (2/92), Physical Education (1/92), Undecided (4/92), Special Education (5/92), Theatre (1/92), Social Work (4/92), and Mathematics (1/92). There were 18 participants who listed a second major, and they were Elementary Education (2/18), Criminal Justice (1/18), Psychology (1/18), Business (1/18), Political Science (1/18), History (3/18), Secondary Education (7/18), and Spanish (2/18). The ethnicities of the participants were African-American/Black (7/92, 7.6% of participants), Hispanic/Latino (12/92, 13%), Caucasian/White (68/92, 73.9 %), and mixed race (3/92, 3.3%). Two participants did not specify ethnicity. The countries represented by the participants were the United States (86/92, 93.5%), Mexico (4/92, 4.3%), Russia (1/92, 1.1%), and Peru (1/92, 1.1%). None of the participants specified attending school in a country other than the U.S. There were 63 (68.5%) traditional (non-transfer) students, 5 (5.4%) students who transferred from a four-year college at the sophomore level, 10 (10.9%) students who transferred from a two-year college at the junior

level, 9 (9.8%) students who transferred from a two-year college at the sophomore level, and 5 (5.4%) students who transferred from a four-year college at the junior level.

When participants were asked to choose the most important factors in determining a quality education, the following options were chosen as the number one most important factor: internet access was chosen one time, money spent on each student was chosen 6 times, diversity of student body was chosen 1 time, access to computers was chosen 1 time, class size was chosen 11 times, updated classroom materials was chosen 11 times, teaching methods was chosen 60 times, location was a factor that was added and chosen as number 1 by one student, and none of the participants chose teacher salary as the number one factor in determining a quality education. When looking at the factors that were chosen as either the most important, second most important, or third most important factor in providing a quality high school education, teacher salary was chosen a total of 3 times, money spent on each student was chosen a total of 12 times, access to computers was chosen a total of 14 times, internet access was chosen a total of 19 times, diversity of student body was chosen a total of 31 times, updated classroom materials was chosen a total of 50 times, class size was chosen a total of 64 times, and teaching methods was chosen a total of 81 times.

When participants were asked to rate the extent to which their high school provided them with a quality education, the average rating on a scale from 3-21 was 14.65, where 3 is considered to be poor quality, 12 is considered to be neutral, and 21 is considered to be high quality. The rating occurring the most often was 15 (14/92 participants), and the frequency of ratings is shown in the chart below.

Participant H.S. Quality

Rating	Frequency	Percent	Valid Percent	Cumulative Percent
5.00	2	2.2	2.2	2.2
7.00	2	2.2	2.2	4.3
8.00	3	3.3	3.3	7.6
9.00	2	2.2	2.2	9.8
10.00	5	5.4	5.4	15.2
11.00	4	4.3	4.3	19.6
12.00	4	4.3	4.3	23.9
13.00	6	6.5	6.5	30.4
14.00	10	10.9	10.9	41.3
15.00	14	15.2	15.2	56.5
16.00	10	10.9	10.9	67.4
17.00	8	8.7	8.7	76.1
18.00	8	8.7	8.7	84.8
19.00	9	9.8	9.8	94.6
20.00	4	4.3	4.3	98.9
21.00	1	1.1	1.1	100.0
Total	92	100.0	100.0	

When asked to rate the extent that the typical U.S. high school prepares students with a quality education, the average rating was 11.99. Most of the participants (34/92) gave a rating of 12. The frequency of student ratings of the typical U.S. high school are shown in the chart below.

Typical H.S. Quality

Rating	Frequency	Percent	Valid Percent	Cumulative Percent
8.00	4	4.3	4.3	4.3
9.00	6	6.5	6.5	10.9

10.00	11	12.0	12.0	22.8
10.50	1	1.1	1.1	23.9
11.00	9	9.8	9.8	33.7
12.00	34	37.0	37.0	70.7
13.00	11	12.0	12.0	82.6
14.00	3	3.3	3.3	85.9
15.00	7	7.6	7.6	93.5
16.00	3	3.3	3.3	96.7
17.00	2	2.2	2.2	98.9
18.00	1	1.1	1.1	100.0
Total	92	100.0	100.0	

When students were asked to rate the extent that the typical U.S. high school prepares students for two-year colleges, the average rating was 12.94. The rating occurring the most often was 12, and the frequency of all the student ratings of the preparation of U.S. high schools for two-year colleges is displayed in the chart below.

Two Yr. Prep

Rating	Frequency	Percent	Valid Percent	Cumulative Percent
4.00	1	1.1	1.1	1.1
6.00	3	3.3	3.3	4.3
7.00	1	1.1	1.1	5.4
8.00	2	2.2	2.2	7.6
9.00	5	5.4	5.4	13.0
10.00	3	3.3	3.3	16.3
11.00	5	5.4	5.4	21.7
12.00	26	28.3	28.3	50.0
13.00	9	9.8	9.8	59.8

14.00	10	10.9	10.9	70.7
15.00	10	10.9	10.9	81.5
16.00	3	3.3	3.3	84.8
17.00	7	7.6	7.6	92.4
18.00	5	5.4	5.4	97.8
19.00	1	1.1	1.1	98.9
21.00	1	1.1	1.1	100.0
Total	92	100.0	100.0	

When students were asked to rate the extent that the average U.S. high school prepares students for a four-year college, the average rating was 12.21. Most participants (23/92) rated U.S. high schools at 12 for preparation for a four-year college, and the frequency of all the participant ratings is shown below.

Four Yr. Prep

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	1	1.1	1.1	1.1
	6.00	2	2.2	2.2	3.3
	7.00	1	1.1	1.1	4.3
	8.00	6	6.5	6.5	10.9
	9.00	10	10.9	10.9	21.7
	10.00	9	9.8	9.8	31.5
	11.00	4	4.3	4.3	35.9
	12.00	23	25.0	25.0	60.9
	13.00	8	8.7	8.7	69.6
	14.00	6	6.5	6.5	76.1
	15.00	11	12.0	12.0	88.0
	16.00	3	3.3	3.3	91.3

17.00	1	1.1	1.1	92.4
18.00	2	2.2	2.2	94.6
19.00	1	1.1	1.1	95.7
20.00	3	3.3	3.3	98.9
21.00	1	1.1	1.1	100.0
Total	92	100.0	100.0	

When students were asked to rate the extent that the average U.S. high school prepares students for the job market, the average rating was 11.34. The rating occurring most often is 12 (19/92 participants). The frequency of the rest of all the college students' ratings of U.S. high schools' preparation of students for the job market is shown in the chart below.

Job Prep

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	2	2.2	2.6	2.6
	6.00	5	5.4	6.6	9.2
	7.00	3	3.3	3.9	13.2
	8.00	3	3.3	3.9	17.1
	9.00	6	6.5	7.9	25.0
	10.00	7	7.6	9.2	34.2
	11.00	8	8.7	10.5	44.7
	12.00	19	20.7	25.0	69.7
	13.00	5	5.4	6.6	76.3
	14.00	7	7.6	9.2	85.5
	15.00	5	5.4	6.6	92.1
	16.00	2	2.2	2.6	94.7
	17.00	1	1.1	1.3	96.1
	18.00	3	3.3	3.9	100.0

	Total	76	82.6	100.0
Missing	System	16	17.4	
Total		92	100.0	

When students were asked if there is anything that needs to be done to improve the quality of education offered by U.S. high schools to adequately prepare students for the job market, students responses included: nothing; (10/92); giving more focus on academics and more school work in classes (17/92); providing more specific and useful job/career information (3/92); more college preparation classes (12/92); more business specific classes (2/92); more money or equal funding for all schools (13/92); better resources (1/92); full reform of education system (12/92); better teachers (8/92); minimize class size (2/92); one participant said yes something needs to be done without specifying what it is that should be done; and 11 participants did not answer this question.

Improve.Edu

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Nothing	10	10.9	12.3	12.3
More Work	17	18.5	21.0	33.3
Job Info	3	3.3	3.7	37.0
College Prep	12	13.0	14.8	51.9
Bus. Classes	2	2.2	2.5	54.3
Funding	13	14.1	16.0	70.4
Resources	1	1.1	1.2	71.6
Yes	1	1.1	1.2	72.8
Reform	12	13.0	14.8	87.7
Teachers	8	8.7	9.9	97.5
Class Size	2	2.2	2.5	100.0

Total	81	88.0	100.0
Missing System	11	12.0	
Total	92	100.0	

When participants were asked if there is anything that needs to be done to improve the quality of education offered by U.S. high schools to adequately prepare students for college, responses included: nothing (16/92 participants); more focus on academics and/or more school work (5/92); provide more job/career information in classes (28/92); offer more business or job related courses (6/92); better money management by schools (1/92); offer more diverse courses (1/92); more state regulation of school funding (1/92); reform of the school system (1/92); better teachers (5/92); 2/92 participants answered yes without specifying what should be done; 3/92 participants responded that it is not the duty of high schools to prepare students for the job market; and 23 participants did not respond.

Improve Job Prep

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Nothing	16	17.4	23.2	23.2
More Work	5	5.4	7.2	30.4
Job Info	28	30.4	40.6	71.0
Bus. Classes	6	6.5	8.7	79.7
Money Mgmt.	1	1.1	1.4	81.2
Diverse Class	1	1.1	1.4	82.6
Regulation	1	1.1	1.4	84.1
Yes	2	2.2	2.9	87.0
Reform	1	1.1	1.4	88.4
Not Duty	3	3.3	4.3	92.8
Teachers	5	5.4	7.2	100.0

Total	69	75.0	100.0
Missing System	23	25.0	
Total	92	100.0	

When asked the primary purpose for pursuing an education at a four-year college, responses were: to get a degree (3/92 participants); for a specific job or career (34/92); to make more money (24/92); to expand knowledge base or pursue a better education (2/92); to play sports (1/92); pressure from family or societal expectations (9/92); to pursue goals in life or the “American Dream” or to be successful (8/92); and 11 participants did not respond.

Purpose of College

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	To get a degree	3	3.3	3.7	3.7
	Job/Career	34	37.0	42.0	45.7
	Money	24	26.1	29.6	75.3
	Sports	1	1.1	1.2	76.5
	Expectations	9	9.8	11.1	87.7
	Pursuit of knowledge	2	2.2	2.5	90.1
	Success	8	8.7	9.9	100.0
	Total	81	88.0	100.0	
Missing	System	11	12.0		
Total		92	100.0		

Results

The results of my study basically show that the majority of students find that teaching methods or the curriculum is the most important factor contributing to educational outcomes, which does not support my hypothesis that money spent on each student would be chosen as the

most important factor contributing to the quality of education. These results support the idea that the structure of education determines educational outcomes more than economic factors. Many participants did choose factors that were directly related to money (such as access to computers, internet access, updated classroom materials, and class size) as one of the top three factors in determining a quality education. This shows that students suggest that money does play a part in providing a quality education whether directly or indirectly. Also, the majority of participants rated the quality of their own high schools as higher than the quality of the typical high school. Many of the participants also recognized the disparities in the quality of U.S. high schools in the explanations of the ratings given on their surveys by making statements such as “I have no clue how it is at other high schools,” “all student[s] aren’t given an equal amount of money [and] being provided with less resources. It seems like schools are either really good or they are really bad.” In addition to the survey highlighting students’ assessments of the U.S. education system, it also brought light to the level of preparation of the participants completing the survey. Many of the participants did not answer all of the questions on the survey, which all asked for written explanations for the responses given, and one participant stated that “this survey is too long.”

Discussion

The review of literature and the results of the survey show that many factors contribute to educational outcomes. While the majority of students surveyed did not identify money as one of the most important contributing to educational outcomes, many of them identified factors that directly relate to money, such as access to computers, class size, internet access, and updated classroom materials. The schools with the most money will have more computers and internet access, will be able to hire more teachers to keep class sizes lower, and will be able to purchase updated classroom materials much more frequently than those with less money. Overall, the

results show that economic factors do impact the quality of education in the U.S., in addition to other factors. One way to examine the impact of economic factors in shaping educational outcomes is by considering the impact that capitalism in the U.S. has on education. Marx focused on capitalism, but the basis of his argument lies in the concept of class conflict (Appelrouth & Edles, 2008). Marx saw society composed of two classes—the owner and the worker—who interacted on terms of domination and subordination. According to Marx, capitalism inevitably leads to exploitation of workers, and wealth becomes concentrated in the hands of the wealthy. According to Marx, the class conflict stemming from capitalism prevents individuals from cultivating their natural talents and actualizing their full potential (Appelrouth & Edles, 2008). If education is tied to money, this means that the wealthy have more educational opportunities than the poor. The amount and quality of education that an individual can receive will depend on the amount and quality of education that they can afford. Also, education is seen as the key to a revolution that would eliminate class conflict. Antonio Gramsci argued that the working class would develop class consciousness and eliminate class conflict through technical education (Appelrouth & Edles). The relationship expressed here is paradoxical because access to education is more widespread for the wealthy than for the poor, but the key to eliminating class conflict is through education.

In addressing education as a tool for success, Harriet Martineau and W.E. Burghardt Du Bois also provide a framework for analysis of education. Martineau describes education in the U.S. as “the necessary qualification for the enjoyment of social privileges” (1838; 2004). This supports the idea that education is a tool for success, or social privilege, but Martineau does not agree that education should be linked to social privilege. Martineau argues that the extent of universal education shows the level of liberty of a society, and that all should have access to an

education: education should be free to all (1838; 2004). Martineau also points out that everyone does not have access to a quality education in the U.S. (true in the 1800s and still evident now), and those who do have access to a higher quality education do not even always value this education or use it for the good of society. Here, Martineau highlights problems with the U.S. education system in the mid-1880s that still seem to exist today, but more importantly she acknowledges education, free universal education, as the key to freedom in any given society.

Along with Martineau, W.E.B. Du Bois also highlights the importance of education in the fight for liberty. Du Bois focused on racial oppression, and he argued that the ultimate evil was stupidity (1903; 1986). He also argued that black people were held down by poverty and ignorance, stressing the importance of education in gaining freedom from oppression. Du Bois argues that it is the duty of those black individuals who have had an opportunity to pursue a higher education to help liberate all black people from poverty, ignorance, and the oppression of white people. He also called for reform of black institutions of higher education so that they would provide a quality of education that compares to the education of the white person (1903; 1986). Here, a quality education is seen as a means for a more free and equal society.

Conclusion

One limitation of this study is that the PISA, which is used for primary analysis of educational outcomes, only uses measurements of 30 out of the countries assessed. These 30 countries are members of the OECD, which is why they are used, and it biases the results of the PISA because only the results from these industrialized countries are used for analysis. One limitation of this study is that the figures used to determine educational disparities and outcomes may not have included all of the factors that could be used to determine educational disparities and outcomes. Therefore, some factors relevant to the discussion could be missing in this

analysis. Another limitation is that there are education acts besides the Basic Education Act in Finland and the No Child Left Behind Act in the U.S. that would outline specific criteria and details about the education systems in each country. One other limitation is that the survey included in this analysis contained a convenience sample and cannot be generalized to other populations, and the number of males and females participating in the survey was not specified. In addition to these, the survey asked students to rate the quality of U.S. high schools based on the factors they chose to define a quality education. This means that each participant defined what it means to have a *quality education* for him- or herself. If there was an operational definition provided for all participants to make their ratings, the results may have been different.

In this analysis, I found evidence that economic factors greatly impact educational disparities and outcomes. I also found that other factors, like teaching methods and the way that money is spent within an education system, greatly contributes to educational disparities and outcomes. This analysis brings light to some of the discussion surrounding education by focusing on disparities within the U.S. education system, the comparison of the U.S. system to the one in Finland, and examining how a sample of undergraduate college students view the quality of U.S. education. I hope that my analysis may serve as a tool to help increase the consideration of restructuring of the ways our education system is financed. I also hope that my analysis shifts the basis of the discussion surrounding the quality of education in the United States. One issue that was mentioned briefly but was not elaborated in my analysis is the right to education. Education should be addressed as a human rights issue. The Basic Education Act outlines the free universal education system in place in Finland, and in the U.S. education depends on the amount of money paid for it because students have to pay for their own educations. In Finland, education is regulated by the government, and the same quality of

education is provided to all, regardless of how much money the student can afford to pay for schooling. This means that all materials that students need will be paid for by the government and not by the students or the teachers themselves.

Also, all those who identified teaching methods as a factor in providing a quality education and the need for quality teachers need to recognize that the current education system is producing our future educators. If the education system was uniform and produced more effective outcomes, then all teachers would be taught the same way to be able to effectively educate their future students. If we start now by reforming the entire system and making education a right for all and regulating the curriculum to nurture *all* students' talents, this would possibly eliminate the current disparities existing within the U.S. education system. Also, more students might continue with schooling and become more productive members of society if they are not plagued with the burden of figuring out how to pay for their education.

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