

Title: Analysis of Finnish Education System to question the reasons behind Finnish success in PISA

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Analysis of Finnish Education System to question the reasons behind Finnish success in PISA

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Abstract

Finnish students have been showing outstanding achievement in each domain since the very first The Programme for International Student Assessment (PISA) in 2000. Finland has consistently been not only one of the top achievers but one of the countries with exceptional educational equity as well. In other words, very high literacy scores are just one side of the coin for Finland, what is more extraordinary is very little between-school variation, very high academic and social inclusion, and a high percentage of resilient students, which all point out the "Finnish Miracle" in educational equity. In this paper, we analyze the Finnish Education System to question the reasons behind this extraordinary success. We use three different sources to do that; a literature review, about 100 hours in-class observations, and the interviews with 11 teachers in an international school and a training school in Finland. The literature review covers a variety of related documents, such as articles, books and some official documents like national core curricula and Finnish Basic Education Act. We also scrutinized some other documents provided by The Ministry of Education and Culture, the highest authority regarding the education, and Finnish National Agency for Education (EDUFI). Based on the results of this study, we conclude that there is no single and isolated factor but there exists a system of interrelated factors to explain Finnish success. The quality of teachers and teacher education seems to be the most prominent factor in this system. Furthermore, the emphasis on the educational equity, long-term educational policy, culture of trust, reading habit of Finnish people can be the other reasons for this success. Finally, a high level of cooperation helps the educational system to work smoothly.

Keywords: Finnish Education System, reasons behind Finnish success, PISA.

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Introduction

Large-scale international assessments are getting increasing attention in recent years. Not only the developed countries but also the developing ones participate in these comprehensive assessments to evaluate their education system comparing with the others'. The Programme for International Student Assessment (PISA) is arguably the most prominent one of these large-scale assessments regarding both how comprehensive it is and what it measures. A sample of over 500,000 students representing about 29 million 15-year-olds in 72 countries or economies makes PISA 2015 one of the most comprehensive surveys in the world (OECD, 2016, p.28). Moreover, what is unique about PISA is that it measures literacy in different domains rather than pure knowledge. In an iterative cycle, students' literacy in one of the domains of mathematics, science, and reading is assessed in detail as the major domain. Literacy is explained by OECD (2016a) as "students' capacity to apply knowledge and skills in key subjects, and to analyse, reason and communicate effectively as they identify, interpret and solve problems in a variety of situations" (p. 25).

Finland has been shining out in these international large-scale assessments with exceptionally successful results. For example, it has been consistently among the top achievers in PISA as a result of Finnish students' very high literacy scores in each of the domains as well as its outstanding achievement in terms of educational equity. Finnish education system has attracted extraordinary attention of the many countries all over the world, as it has been one of the top performers since the first PISA administration in 2000. The very high scores Finnish students have been getting in all domains in PISA is the popular aspect of Finnish success, yet this success is essentially multifaceted. Finland regularly has one of the lowest between-school variances in literacy scores along with very high percentage of resilient students. It has also one of the highest coverage of 15-year-olds (97%) among all the participants in PISA (OECD, 2016a, p. 207). All of these indicators make Finland a constant member of the countries that have both above-average performance and above-average equity in education.

Another key point to underline is that Finland gets these outstanding results within the shortest total learning time for students among all participant countries in PISA. According to PISA 2015 results, Finnish students spend 36.1 hours totally to study all the subjects per week, which includes the learning time both at school and out of

school. The shortest total learning time along with very high scores result in the highest score points per hour of total time learning in each domain for Finland. In PISA 2015, this ratio is 14.7, 14.6, and 14.2 points per hour of total learning time in science, reading, and mathematics, respectively, which moves Finland to the first rank among all participant countries in this ratio. This ratio gives us an idea about the efficiency of the Finnish education system.

Consequently, many researchers in variety of countries, including Finland itself, has started to investigate the reasons behind this consistent success of Finnish students (Ahtee, Lavonen, & Pehkonen, 2008; Çobanoğlu & Kasapoğlu, 2010; Darling-Hammond, 2009; Eraslan, 2009; Kim, Lavonen, & Ogawa, 2009; Kivirauma & Ruoho, 2007; Linnakylä, 2004; Malaty, 2006; Sahlberg, 2007, 2011a, 2011b, 2012, 2013; Sarjala, 2013; Simola, 2005; Valijarvi, Linnakyla, Kupari, Reinikainen, & Arffman, 2002). All of these studies evidently show that the reasons behind this success is multidimensional. Furthermore, these dimensions are highly interrelated and most of them are culture-dependent. Therefore, the analyses of the reasons behind “Finnish Miracle” by different researchers from and outside of Finland is essential to investigate the underlying explanations from different perspectives.

In this context, the main purpose of this study is to question the reasons for Finnish success from the perspective of a foreigner visiting-researcher in education. This questioning procedure is built on not only an extensive literature review but also in-class observations and semi-structured interviews with 11 Finnish teachers. As we have stated above, there already exist some studies aiming to explain the reasons behind Finnish success in the literature. Yet, this study differs from some of them in that it reflects the perspective of a researcher out of the Finnish education system. It also differs from some others in that it is not grounded on just the literature review but combines the data revealed from observations and interviews as well.

How did we conduct the study?

This is mainly a narrative review study supported by in-class observations and the semi-structured interviews conducted with teachers in Finland. In other words, we benefit from three different sources to explain the reasons behind the Finnish success in PISA. The first one is an extensive literature review. We analyzed both the

documents provided by Finnish Ministry of Education and the previous studies about the Finnish Education System itself and the reasons for its success.

The next source is in-class observations, which one of the researchers has conducted for about 100 class-hours in an international elementary school and a teacher training school in Finland. The observation covers the classes of environmental study at the elementary level, science at the middle level, and physics at the high school level. The researcher kept an observation diary to take notes about his observations regarding several aspects like the general structure of the schools, the quality of teachers, the teaching methods followed by the teachers. The researcher was a complete observer for most of the time but in one of the classes, he taught science for four weeks.

The final source of the data in this study is the interviews with 11 teachers working in Finland for one to 35 years. The semi-structured interviews were conducted with teachers to get their opinions about the reasons for Finnish students' success in the international exam like PISA. The participants were selected using purposive sampling to cover the teachers from a variety of teaching grade levels (from 1st grade to upper secondary), teaching experience (1-35 years), and subject areas (class teachers, physics teachers with chemistry and mathematics minors). The majority of the teachers working in the international and teacher training school was female; accordingly, nine of the participants were female teachers with two male teachers, who were selected on purpose because of their gender and teaching experience.

The interviews covered two broad themes: the teaching methods administered by the teachers in the classes and the reasons behind Finnish success in PISA. This study mainly focused on the second part of these interviews. A video camera was used to record their voice. The pictures of the interviewees were not recorded to make them feel more comfortable. The interviews were conducted with one teacher at a time. After the teachers kindly accepted to be an interviewee, we scheduled an appropriate time for the interviews based on their time schedules. All of the interviews were conducted in the private rooms, mostly in the teachers' room attached to their classes. At the beginning of the interviews, the aim of the interviews were explained to all participants explicitly. Because of semi-structured nature, the length of the interviews varied from 30 minutes to an hour depending on the number of the follow-up questions.

In order to interpret the reasons for Finnish success properly, we first need to comprehend the basics of the Finnish education system. Thus, we will indicate the main characteristics of the education system in the next section.

Finnish Education System

Education Population and Language of Instruction

By the year 2017, the population of Finland is about 5.5 million with a small growth rate of 0.5%. There are approximately 560,500 students attending 2341 comprehensive schools, 95% of which ran by municipalities in Finland (Official Statistics of Finland, 2018). The percentage of young people aged 15-29 is 17.8% (Youth Wiki, 2018). Finnish and Swedish are the national languages, which are equal throughout the country for official purposes while there is a regional language, Sami, as well (Eurydice, 2018). Approximately 6% of students in basic and upper secondary education attend a school in which language of education is Swedish. In addition, local authorities are supposed to provide the students with instruction in Sami language in Lapland where there are some Sami-speaking areas. Additionally, the language of instruction is partially or completely English in some of the schools in Finland (Eurydice, 2009).

Key features of Finnish Education System

Finnish Basic Education Act (Finnish National Agency for Education, 1998) indicates three main objectives of education in Finland. Some parts of these objectives highlight the keywords regarding the characteristics of Finnish Education System: "...to provide them (pupils) with knowledge and skills needed in life..." in the first objective, "...to promote civilization and equality in society..." in the second one, and "...to secure adequate equity in education throughout the country..." in the last objective.

In this regard, Ahtee et al. (2008) claim that there exist three prominent principles in Finnish educational policy: supporting the vision of *knowledge-based-society*, promoting *educational equality*, and enhancing *local authorization*. Similarly, Lavonen and Laaksonen (2009) indicate these three principles beside teacher education as the critical educational policy issues for successful Finnish education. Kupiainen,

Hautamaki, and Karjalainen (2009) emphasize *decentralization*, that is, enhanced local authorization, as one of the most important changes in the Finnish Education System from the 1970s to the 2000s. They also highlight three important aspects of the Finnish System comparing with general western model: *flexibility and diversity* rather than standardization, *emphasis on broad knowledge* including all aspects of individual growth and learning, and *culture of trust* through professionalism. Finally, Laukkanen (2008) explains five preconditions met by Finland for good performance, which are “resources for those who need them most, high standards and supports for schools, qualified teachers, evaluation of education, and balancing decentralization and centralization” (p. 312).

Another important feature of Finnish Education is that it is free at all levels including higher education. There is no tuition fee for any level of education from kindergarten to university. Furthermore, all the learning materials including the textbooks, health services and transportation for the students who live away from school are free of charge during kindergarten and basic education. All students from kindergarten to upper secondary level are provided a free lunch at the schools as well (EDUFI, 2018).

In addition, there is no national examination throughout the ten-year-compulsory education in Finland. Schools do not select their students in basic education; that is, students are not grouped into different schools based on their success. Most students go to a public school near their homes (EDUFI, 2018).

Administration of Finnish Education System

Finnish education system has a two-tier administrative structure: The Ministry of Education and Culture, the highest authority regarding the education, and Finnish National Agency for Education (EDUFI), which operates under the ministry but it is relatively autonomous within its own working area (Eurydice, 2018). Its working area includes the educational stages from early childhood education and care to upper secondary in addition to adult education. Higher education, on the other hand, is the responsibility of the ministry (EDUFI, 2018).

As we mentioned in the previous section, a key feature of the Finnish education is the *decentralization*. That is, local authorities have enhanced autonomy to maintain the basic and upper secondary level education institutions. Local authorities (municipalities) are responsible for the organization of the basic education

institutions at local level. They are also in charge of partial financing the schools providing basic education (about 75%). The remaining part of the financial funding (about 25%) is provided by the state (Eurydice, 2018).

The Finnish schools have some degree of autonomy as well. The local authorities decide the degree of this autonomy. In general, the schools have the authority to organize their educational services as long as the basic requirements, stated by the law, are met (Eurydice, 2009).

Because of the *culture of trust*, another principle of the Finnish education system, there are no inspection visits to the schools in Finland. The system, as well as the Finnish society, relies on the proficiency of the teachers. There is, on the other hand, Finnish Education Evaluation Centre (FINEEC), which conducts nationwide evaluations in education. Yet, the main purpose of these evaluations is to provide educational stakeholders with appropriate feedback and they do not include inspection visits to the teachers (Eurydice, 2018).

General Structure of the Finnish Education System

Figure 1 illustrates each level of Finnish education starting from early childhood education and care to doctoral degrees. One-year pre-primary and nine-year basic education is compulsory in Finland. Pre-primary education was included in the compulsory education in August 2015 but almost all 6-year-old students had already been attending pre-primary schools even before this date. 10-year-compulsory-education starts at the age of six (with pre-primary education) and finishes at the age of 15 (EDUFI, 2018).

Early Childhood Education and Care (ECEC) and Pre-primary Education

Free compulsory education starts with pre-primary education in Finland. That is, ECEC before pre-primary education is neither compulsory nor free. However, families can easily find day-care centers even for babies with reasonable fees, which are calculated depending on the parents' income and family size. On the other hand, pre-primary school is completely free of charge. However, it is about four hours a day. Therefore, most of the preschoolers go to another ECEC since typically both parents work full time in Finland (Eurydice, 2018).

Basic Education

Basic education, regulated by the Basic Education Act (EDUFI, 2018) since 1999, is an integrated primary and lower secondary education. It starts at the age of seven and generally finishes in nine years. There is also an extra voluntary year provided for the students who would like to enroll.

As we stated before, everything in basic education, including teaching-learning materials, health and welfare services, transportation (if necessary) and a healthy lunch, is provided for students free of charge. Furthermore, any assistance for students who need special education is also completely free (EDUFI, 2017).

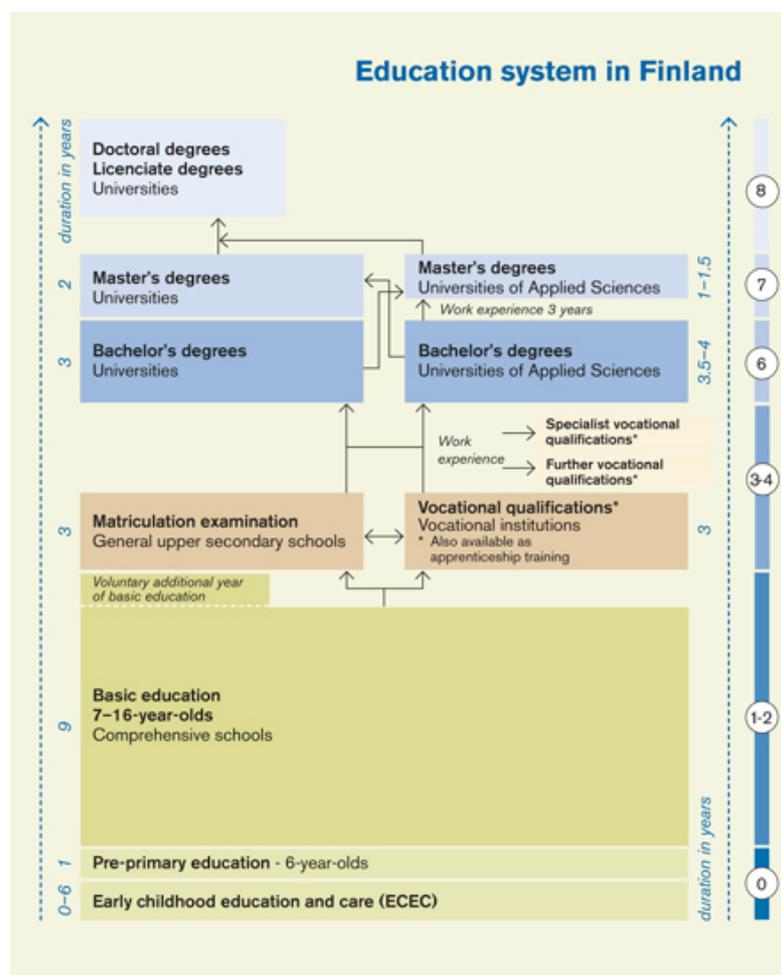


Figure 1. General Structure of the Finnish Education System (EDUFI, 2018).

There exists a national core curriculum covering the objectives, core contents and assessment criteria, which was revised in 2014 by the Finnish Board of Education (named as EDUFI since 2017). The revised version of the national core curriculum has been used in the primary schools (grades 1-6) gradually since August 2016 and it will be used for the lower secondary part of basic education by 2019 (Eurydice, 2018). Local authorities (municipalities and schools) are responsible for developing their own local sensitive curriculum based on this national framework (Kupiainen et al., 2009).

Upper Secondary Education

The students who have successfully completed the basic education have two main options for upper secondary education: general upper secondary education or vocational upper secondary education. In 2016, 52.7% of the students continued studies in general upper secondary education while 42.5% of them chose to go to an upper secondary vocational school after the basic education. The rest either did not continue to study in upper secondary immediately after the basic education (2.5%) or continued other studies like the voluntary tenth year in the basic education (2.3%). Comparing to 2000, the percentage of the students enrolled in general upper secondary education decreased slightly by 1.0% whereas the percentage of those enrolled in vocational upper secondary education increased significantly by 6.2% thanks to a noteworthy decrease of those who did not continue studies in upper secondary education by 5.2% (Official Statistics of Finland, 2016).

Similar to basic education, there exists a national core curriculum, which defines the objectives and core contents of the different subjects, cross-curricular themes, subject groups, thematic subject modules, and student counseling. It was revised in 2015 and the upper secondary schools started to use the local curricula developed on the revised national framework in August 2016 (EDUFI, 2018).

General upper secondary education ends with a matriculation exam. The first national exam in Finland includes four compulsory tests but students can get some optional tests as well. Completing the upper secondary syllabus and having the matriculation exam entitles the students to continue his or her studies in higher education level (EDUFI, 2017).

Higher Education

Finland has a dual-structured higher education with universities and universities of applied sciences (UAS). Universities mostly focus on scientific research and education while UAS are mainly working life oriented (EDUFI, 2018). There are about 157,800 students enrolled in 14 universities and 144,900 students in 25 UAS in Finland (Official Statistics of Finland, 2017a). Higher education is free of charge; that is, there is no tuition at any of the universities, all of which are public institutions. Universities have academic freedom and substantial autonomy in their decision-making processes.

Universities have different student selection criteria mostly including matriculation exam result, previous study record and/or entrance exam(s). Faculty of Education is one of the most competitive faculties at the universities. The acceptance rate is generally about 10% for a five-year master program to be a primary school teacher (Sahlberg, 2013). For example, in 2013, the number of applicants for a Finnish-language class teacher was 12,493, only 886 of whom were selected for the program (Ministry of Education and Culture, 2014), which indicates an acceptance ratio of 7% for 2013.

Special Needs Education

One of the key elements of the Finnish Education System is providing “resources for those who need them most” (Laukkanen, 2008, p.312) to enhance the educational equity. In this regard, special needs education constitutes an indispensable part of Finnish Education, which is mainly constructed upon the philosophy of inclusion. Educational support for students is categorized into three groups: general, intensified and special support in the increasing order of the degree of extra support for students (EDUFI, 2018). In the school year of 2016-17, at least 29% of the students in the basic education received some degree of special support. 17.5% of them was provided with intensified or special support in the comprehensive school in autumn 2017 (Official Statistics of Finland, 2017b).

Finland in PISA

Finland has been participating in PISA since the first administration in 2000, in which the main domain was reading. Although there exists a small fluctuation in the results of six PISA administrations throughout 15 years and there seems to be a slight downtrend in the last two ones, Finland has consistently been one of the top achievers in each of the domains in PISA (Table 1).

Table 1. The results of Finnish students in PISA.

Literacy Domain	2000	2003	2006	2009	2012	2015
<i>Reading</i>	546 (1)*	543 (1)	547 (2)	536 (2)	524 (3)	526 (2)
<i>Mathematics</i>	536 (4)	544 (1)	548 (1)	541 (2)	519 (6)	511 (7)
<i>Science</i>	538 (3)	548 (1)	563 (1)	554 (1)	545 (2)	531 (3)

* The numbers in parenthesis show the ranking of Finland among OECD countries in each domain in the corresponding year.

As we stated before, another important point to underline about Finnish success is that students in Finland have an average total learning time of 36.1 hours per week, which is the shortest among all participating countries in PISA 2015. OECD average of total learning time is 44.0 hours per week, so Finland becomes one of the top achievers among OECD countries although the Finnish students spend the shortest time for learning comparing all the participating countries in PISA. In a sense, then, Finland has arguably one of the most efficient education systems. OECD (2016b) combines the total learning time and students' literacy scores in each domain to calculate a ratio of score points per hour of total learning time (p. 217). As illustrated Figure 1, Finland has the highest ratio values of 14.7, 14.6, and 14.2 points per hour for science, reading, and mathematics respectively, which are the highest values among all participating countries in all domains. It is one of the distinctive features of Finnish Education. For example, Singapore, the top achiever, has outstanding literacy results in all domains in PISA. However, Singaporean students' total learning time is higher than the OECD average. Therefore, it has relatively small ratio values of 10.9, 10.5, and 11.1 points per hour for science, reading, and mathematics respectively, two of which are smaller than the OECD averages.

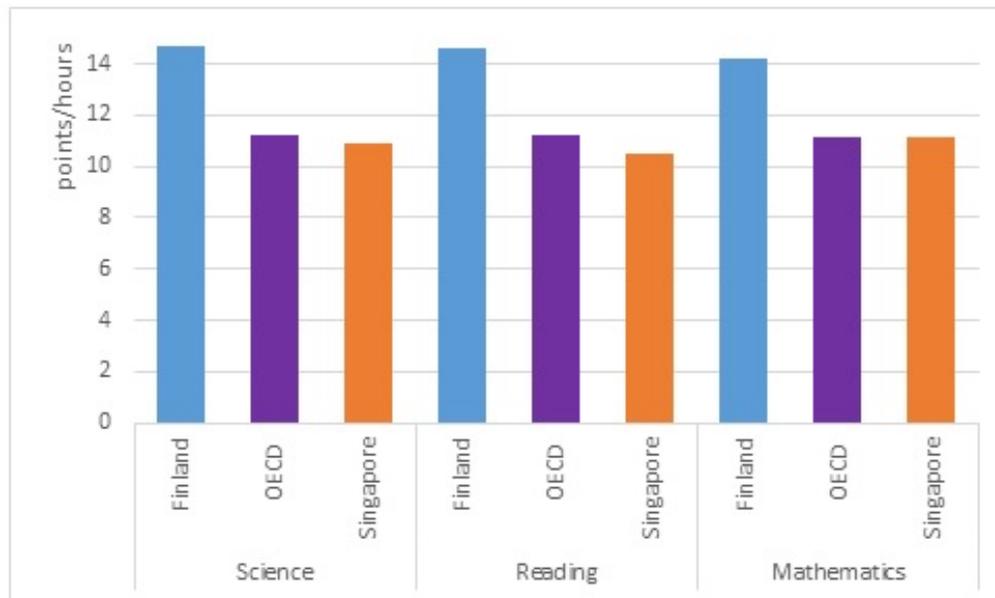


Figure 2. The ratio of score points per an hour of learning time for Finland, Singapore and OECD average.

In addition, as we stated before, the “Finnish miracle” is more than the high averages of literacy scores. Where it distinctively stands out is the *educational equity* provided throughout the country. There are many equity indicators in PISA data that indicate the high educational equity provided by Finland. For example, Finland has consistently one of the smallest between-school variations in literacy scores among all participating countries; that is, Finnish schools are very similar to each other in terms of students’ literacy scores. OECD (2016a, p. 418) provides an index of academic inclusion, which is calculated by using the variation in students’ performance within and between schools. Finland has one of the highest values (92.1%) in this index indicating a very high academic inclusion. Similarly, the variation in students’ socioeconomic status between schools is very small in Finland. OECD (2016a, p. 410) calculates an index of social inclusion, similar to the index of academic inclusion, but this time using the variation in students’ socioeconomic status within and between schools. Higher values in this index indicate better social inclusion and Finland has one of the highest values (87.2%) among all participating countries in PISA 2015.

In addition to high academic and social inclusion, another indicator of equity in Finland is the percentage of resilient students in PISA. Resilient students are the students who are in the bottom quarter regarding the socioeconomic status in their country and yet place in the top quarter among all countries regarding the

achievement, after controlling their socioeconomic status. In PISA 2015, the percentage of resilient students is 42.8 in Finland (OECD, 2016a, 418); that is, more than four of 10 disadvantaged students have shown outstanding achievement in PISA. Finally, Finland has a very high percentage of socially and emotionally resilient students, which refers to “disadvantaged students who are satisfied with their life, feel socially integrated at school and do not suffer from test anxiety” (OECD 2018a, p. 33). In PISA 2015, almost four of 10 disadvantaged students (38.6%) have been classified as socially and emotionally resilient in Finland (OECD 2018a, p.33).

Another PISA indicator showing the high level of equity is that the educational opportunities provided for the disadvantaged and advantaged schools are very similar in Finland. For example, OECD (2016a) provides two indices related to educational shortage; index of the shortage of educational material and educational staff. Finland is one of the countries with the smallest difference between the advantaged and disadvantaged schools in terms of these indices of educational shortage (OECD, 2016a, p.413).

The Reasons behind Finnish Success

Up to this section, we first summarized the key features of the education in Finland and then we clarified the general structure of the Finnish Education System so that we can question the reasons behind their success more contextually. In this section, we will investigate these reasons using three distinct resources, as we stated earlier, literature review, observation in Finnish schools and the interviews conducted with Finnish teachers.

Literature Review

First of all, we need to underline that the Finnish Education was not always as successful as it is now (Darling-Hammond, 2009; Sahlberg, 2009, 2012; Sarjala, 2013). Finland has been gradually steering a comprehensive and long-term educational reform for more than forty years. Therefore, Finnish success is closely connected to and an outcome of this consistent, long-term educational reform.

Second, many researchers investigating the reasons behind Finnish success evidently claim that Finnish success cannot be explained using just a single and isolated reason

but it is a consequence of some interrelated factors (Ahtee et al., 2008; Linnakylä, 2004; Valijarvi, 2002) mostly embedded in the cultural context. We organized these possible factors stated in the literature into three groups: factors related to teacher education, educational policy, and Finnish culture.

Our first group is “factors related to teacher education”. Some researchers claim that high-quality, research-based teacher education (Ahtee et al., 2008) or highly qualified teachers (Sahlberg, 2011b) might be the most influential factor among the others affecting Finnish success. Another factor related to teacher education is that teacher education programs are highly selective. Therefore, some of the best high school graduates are selected to be a prospective teacher (Sahlberg, 2011b). The second group of the factors related to Finnish success is “the ones related to the educational policy”. Lavonen (2008) describes four of the main foundations of Finnish Education Policy are consistent and long-term policy, commitment to a knowledge-based society, educational equity and enhanced local authority. These have also constituted the foundations of the successful educational reform since the 1970s, as a result of which, a strong educational system has been created (Sahlberg, 2012; see also Sarjala, 2013). Finland has a well-functioning system of special education, which is also rooted in educational equity, an important factor affecting Finnish success (Kim et al., 2009). Another factor related to educational policy is the balance of central and local authorization regarding the educational administration (Laukkanen, 2008). Local authorities, schools, and teachers have plentiful autonomy in their decision-making process, which, in turn, gives them a lot of responsibility to organize the educational processes effectively. The last group we created is “the factors related to Finnish Culture”. The first factor categorized in this group is the culture of trust, which means that educational authorities trust other stakeholders especially teachers and the parents believe in teachers as well (Lavonen et al., 2009). The second factor related to Finnish Culture is that teaching is one of the most popular and highly regarded professions in Finland (Kansanen, 2003; Simola, 2005).

Finally, Sarjala (2013) points out the importance of Finnish core values to explain the educational reform in Finland. He claims that these values, equality and cooperation, both shape the educational reforms and make it possible to perform them altogether. Therefore, he suggests that the researchers always need to evaluate the mechanism of transformation in Finnish Education within the context of the core values of equality and cooperation. In addition, Sahlberg (2012) indicates that high equity in Finnish

education results from the cooperation between Finnish education system and the other parts of well-functioning welfare services to provide social justice.

Observations

In-class observations provided a great opportunity to see what is really happening in Finnish classrooms. The results of these observations have many similarities with what is stated in the literature regarding the reasons of Finnish success. We also realized that it was not easy (if possible) to explain this success using only one isolated factor because what we observed in schools was a system performing in a harmony. Therefore, we will indicate a couple of factors making Finnish Education so successful.

First, what is emphasized in Finnish Education is closely related to what is assessed in PISA. Rather than the transfer of knowledge, literacy skills are at the center of Finnish Education, which may give Finnish students an advantage in the assessments focusing on literacy like PISA. It is also admirable to observe how well the teachers transfer the foundations of the education system into the classrooms. What you observe in the classrooms is closely parallel with what is intended on the official documents like the education act or curriculum. This brings us the quality of teachers. Both class teachers and subject teachers are well educated in terms of content knowledge and pedagogy. They know the content they teach very well and use a variety of teaching techniques to make their students active in the classrooms. They also use many daily life examples to explain the concepts. Based on the observations, we can evidently speculate that this is a consequence of a well-functioning teacher education, which involves clinical teacher training schools. Prospective teachers generally spend 10-15% of their study time in these training schools (Sahlberg, 2013). The training school, observed in this study, provides student teachers with a separate teachers' room with ample space and some educational materials they might need. Student teachers not only observe but also get actively involved in the teaching process. It is a win-win situation for Finnish Education because student teachers gain a lot of experience while teachers and students in these schools get very useful help from them.

Another factor might be flexibility and autonomy the teachers have in the education system. For example, if a teacher would like to join in an in-service training, the

administrator makes it easier for him/her to do that. A substitute teacher is scheduled for his/her classes. All he/she might be expected to do is to share what he/she has learned in the training program with other teachers at the school. The administrators and the parents respect and trust the teachers, who, in turn, work hard feeling that responsibility.

Based on the observations, the next factor explaining Finnish success might be the integration of equity in Finnish Education System. It is integrated into the system so well that all teachers and administrators appreciate equity as an indispensable part of Finnish Education. They willingly spend extra energy and money for the students with special needs.

In addition, reading habit in Finnish Society directly affects the students' success because meaningful reading is a precondition for success in any domain. The library network is very dense in Finland because Finnish people borrow many books from the libraries (Sahlberg, 2007).

Interviews

The last source of this study is the interviews conducted with 11 teachers working in an international elementary school or a teacher training school. Six of these teachers were class teachers in the international school, four of them were physics teachers with mathematics or chemistry minor, and the last one was head of the international school. One of the researchers conducted semi-structured interviews with them questioning the reasons behind the Finnish success as a part of these interviews. First, it was obvious that the teachers were familiar with this kind of questions. They provided clear explanations based on their experiences. We have created four categories to represent the teachers' ideas about the reasons why Finnish students are so successful in the international assessments like PISA: educational equity, high-quality teacher education, knowledge-based society, and flexibility.

First, all of the teachers consistently talked about the importance of educational equity. They believe focusing on the students with special needs and pushing the low achievers to the middle makes Finnish students more successful in the international assessments narrowing the gap between the low and high achievers. Second, they underlined the high quality of both pre-service and in-service teacher training in Finland. All of the interviewee teachers had at least a master degree and one of them

had a Ph.D. degree. The teacher with a Ph.D. degree said that she got the doctorate degree on teaching multicultural students after she had started to work in the international school to help her international students more effectively. They also highlighted how effectively the pre-service teaching practice worked in the training schools. The third category we created is knowledge-based society. Finnish people read a lot and visit the public libraries very often (Sahlberg, 2007). They also give emphasis to lifelong learning creating a variety of opportunities for adult learners. The final category is about flexibility. Teachers believe the school administration is flexible enough for them to plan in-service training activities. Their teaching time is not very long providing them with enough space to plan all the educational activities and to meet with the parents.

In addition to these categories, the teachers also know that teaching is highly regarded in Finland. They believe the parents trust them and they underline the importance of the cooperation between parents and teachers. Finally, some teachers state that Finnish is an easy language to read because it is read exactly the same way it is written.

Discussion

The main purpose of this study is to analyze the Finnish Education System to question the reasons behind Finnish students' astonishing success in PISA. In this regard, we use three sources: literature, in-class observations, and interviews with 11 teachers in Finland. The findings from each source are expressively coherent indicating a network of reasons rather than a single and isolated one.

First of all, the core principles underlying Finnish Education are very important to question their success because they directly shape all aspects of the educational services. For example, the principle of *educational equity* highly affects the entire educational system. This is the major reason why education is free at all levels of education from pre-primary to higher level in Finland. The principle of *resources for those who need them most* along with *educational equity* lead Finnish educators to focus on the students with special needs spending more time and educational resources for them. Therefore, we can arguably speculate that the Finnish Education system is a product of the underlying core principles, which are highly embedded within Finnish Culture.

Second, all three sources indicate that one of the most prominent factors affecting Finnish success is the quality of teacher education and teachers. However, as we stated before, many factors have a high level of interaction with each other. For example, the quality of teachers is directly correlated with Finnish Culture. Teaching is a highly regarded profession and parents trust teachers very much, which makes teaching one of the most popular professions in Finland. Therefore, teacher education programs can select their students among the best ones. So, well-qualified teachers result from not only the quality of teacher education but characteristics of Finnish culture as well. We can also speculate that teachers' autonomy provided by the education system makes this profession even more charming for Finnish people. All these factors work together to result in the fact that Finnish teachers are one of the most qualified teachers in the world. Nevertheless, the quality of Finnish teachers is evidently one of the most dominant elements of Finnish students' success. Regarding the quality of teachers, OECD (2018b, p. 4) claims that the quality of an education system is shaped by the teachers' quality. However, teachers' quality is limited by the educational policies to determine working conditions in schools, teachers' selection and employment processes, and their professional development.

Another important factor, which is revealed by all three sources in this study, is the high level of educational equity in Finland. As we stated before, equity is the most shining part of Finnish success, which is a consequence of many elements working in a harmony. Educational policy based on equity, a very well-functioning special education program along with high-quality teachers who are well-trained to help students with special needs are some examples of these elements.

Next, we believe that education is multidimensional and highly connected to many other administrative components in a country. Finland astonishingly exemplifies that long-term and consistent educational policies implemented by the departments working with extraordinary cooperation can create an admirably literate society. Therefore, we can clearly claim that long-term policy and cooperation are other central reasons to explain the success of Finnish Education System.

Finally, the values, which are also closely connected to the culture, are of critical importance for any kind educational reform or revision in a country as well. In Finland case, these values are equity and cooperation (Sarjala, 2013). Taking lessons from Finnish success does not mean that we need to copy and paste Finnish Education System into ours, which, we believe, would not work. Yet, Finnish success

provides us with a clear example how an average (or below average) education system can be transferred into admirable one by adapting some core principles into your own cultural context using the help of your own values.

Conclusion and Suggestions

The results of this study, in which we investigated the reasons behind Finnish success by analyzing Finnish Education System in detail, provides us with some important conclusions and suggestions. Some of the important ones are as follows:

- It is not possible to explain Finnish success using a single factor because there exist a network of factors, which are highly interrelated. Therefore, rather than making a simple list of the possible reasons, we need to analyze the entire Finnish Education System and we need to evaluate those reasons within this context.
- Any educational reform requires long-term policy. Without long-term planning and consistent educational policy, Finnish success might have not been possible.
- The core values are an important part of educational success in Finland. Equity and cooperation make Finnish Education System work in a harmony.
- Among some important factors, the quality of teachers seems to be the most prominent one, which is significantly associated with many other factors, such as the quality of teacher education, the prestige of teaching profession in the society, and teachers' working conditions.
- Comparison of high-achieving countries with different cultures regarding the factors affecting their success in PISA might be helpful to question which factors work in which cultural context.

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