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Comparing Nebraskan and Finnish Education Policy and Its Impacts on Mathematics Teaching

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COMPARING NEBRASKAN AND FINNISH EDUCATION POLICY
AND ITS IMPACTS ON MATHEMATICS TEACHING

An Undergraduate Honors Thesis
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Abstract

For two decades, Finland has been in the education spotlight as they consistently receive high international exam scores while spending less money, less time teaching, and putting students through fewer hours of school. This study aims to investigate the related policy that may help explain these seemingly paradoxical findings in the education sector. More specifically, this study examines how related policy impacts math teachers in their day to day work. This research includes an extensive literature review that explores several facets of the education system in both Nebraska and Finland in order to better understand existing policies. This background is necessary prior to understanding the impact these policies might have. The study also includes feedback from two math teachers in Nebraska and two math teachers in Finland regarding policy and the responsibilities expected of them, often as a result of these policies. The data for this project was collected through semi-structured interviews and was evaluated by identifying key themes and contrasting feedback leading to better understanding about how policy in Finland may be enabling teachers to better help their students.

A key finding in this study is that Finnish teachers experience more teacher autonomy than Nebraska teachers. This autonomy appears to have a significant impact on the implementation of curriculum, assessment, and other aspects of education. In addition, interviews led the study to look into how the culture of Finland may be playing a very large role in their ability to maintain an educational system that is simultaneously autonomous and interdependent on other sectors of the government.

Introduction

Finland spends 21% less each year for each child than the United States and yet, for the past 19 years, Finland has consistently scored in the top 10 countries on the Program for International Student Assessment, while the United States has hovered around 30 or 40 (National Center for Education Statistics, 2019; OECD, 2018). Often times, the United States' answer to problems is to throw more money at it, but this study aims to identify key pieces of policy present in Finland that may be better solutions than just a larger budget (Camera, 2019). While there isn't any debate about whether or not money is necessary for a great education system, the more important factor may be how this money is used. This thesis will present evidence comparing the international success of Finland and the United States, provide an extensive literature review over education policy in Finland and Nebraska, and will conclude findings based on interviews with Finnish and Nebraskan math teachers. Specifically, this study hopes to identify further possible research on what could be done to reduce the achievement gap between Nebraska and Finland.

Comparing Education Internationally

There is ample evidence to show that Finland outperforms the U.S. in education. One of the large-scale international exams used to measure progress is the Program for International Student Assessment (PISA), created by the Office of Economic Cooperation and Development (OECD). The most recent PISA exam was administered in 2015 with a focus on science. Reading and math were also tested but not as extensively. Finland performed 35 points higher than the U.S. in science, 29 points higher in reading, and 41 points higher in mathematics (OECD, 2018). The most recent Survey of Adult Skills (PIAAC) occurred in 2015 and reported adult proficiency in literacy, numeracy, and problem-solving in technology-rich environments.

Finland scored 18 points higher than the U.S. in literacy, 29 points higher in numeracy. The PIAAC also revealed that 11% more of Finland's population has sufficient problem-solving abilities in a technology-rich environment (OECD, 2016). The 2016 results of the Progress of International Reading Literacy Study (PIRLS) showed Finnish fourth-graders performing 17 points higher than American fourth graders (International Association for the Evaluation of Educational Achievement, 2015). Finland also continues to be a top performer in the

International Civic and Citizenship

Education Study for 8th graders

(International Association for the

Evaluation of Educational

Achievement, 2016).

Aside from test results, Finland has an approximate 92% graduation rate from compulsory education,

which continues through grade 9. Of these graduates, 96.2% choose to continue their education after grade 9, and 89% of those who continue graduate from upper secondary school (Statistics Finland, 2018). Comparatively, the U.S. national graduation rate from grade 12 is 84.6%, lower than both Finland's compulsory graduation rate and upper secondary graduation rate (National Center for Education Statistics, 2019a). The Nebraska graduation rate matches Finland's upper secondary rate at 89%. The structure of Nebraska and Finland education for students can be referenced in Figure 1.

Figure 1: Education Structure in Nebraska and Finland

Age	Nebraska	Finland
3-4	Optional Early Childhood, Private Pay	Compulsory Early Childhood
5-11	Compulsory Primary School	Compulsory Primary School
12-13	Compulsory Middle School	Compulsory Lower Secondary School
14	Compulsory High School	Optional Upper Secondary School
15-18		
19+	Optional Higher Education, Publicly Financed, Private Pay	Optional Higher Education, Publicly Financed, Private Pay

Education Government Structure

In Nebraska, state education policy is developed in the Nebraska Department of Education. It is the department's job to communicate with the U.S. Department of Education. This communication ensures that national regulations are enforced within Nebraska's school system, and makes certain national funding is being received and appropriately distributed. Nebraska develops a large majority of its education policy and passes it down to its districts (Nebraska Department of Education, 2019).

In Finland, national policy is developed through the Finnish National Agency for Education. The agency generally organizes overarching frameworks and structures and allows, local municipalities, a form of local government with an average population of 18,000, to determine many of the detailed parts of its policy. In addition, the Ministry of Education and Culture communicates with the European Higher Education Area, of which Finland has been a full member since 1999. There are certain requirements Finland must meet with this membership, though these requirements do not impact teacher education programs (Finnish National Agency for Education, n.d.).

This study aims to investigate how policy differs in Nebraska and Finland, as well as how it impacts mathematics teachers in their own classrooms daily. It will identify specific parts of policy that most influence the classroom and the teacher and will research the specific ways in which it does so. Finally, it will motivate further research in more specific areas of education.

Literature Review

Educational Leadership

Leadership structure in education differs greatly between Finland and Nebraska. Both places require principals and superintendents to hold teaching certificates and have some teaching experience, but only Finnish principals continue teaching while in their administrative position. According to Pasi Sahlberg, a Finnish teacher, teacher educator, researcher, and policy advisor, all educational leaders in Finnish municipalities are also certified and experienced teachers (Sahlberg, 2015). While many employees of the Nebraska Department of Education have similar experience, there are also plenty of employees who did not have education backgrounds prior to their current job. These different perspectives shape education in ways that may not be the most popular among the teachers who must execute decisions handed down to them. While more research is still required, it is likely that policy looks different when being created by those who are not professionally trained in the field of education.

Teacher Value

One of the biggest differences in education policy that is seen between Finland and Nebraska is teacher education and teacher certification. Teacher education is defined in this paper as the college education a teacher receives assuming their degree focus is in primary or secondary education. Given that teachers are the front line in every single school and are responsible for carrying out policy every day, teacher education and teacher certification are an integral part of any education system.

Nebraska teachers are certified to teach in Nebraska public schools after obtaining a bachelor's degree and passing scores on two national Praxis exams (Nebraska Department of

Education, n.d.). These exams test the teacher's subject knowledge in math, reading, and writing, as well as their area of focus if they are a secondary teacher. Nebraska teaching degrees typically cover educational psychology, special education, human relations, pedagogy, and teaching methods commonly used in their field, as well as the state standards, how to use different curricula common in the state, and how to create and use informal and formal assessments. In addition, Nebraska programs include a significant amount of real classroom experience in a minimum of 3 different classrooms, but often exceeding that. All primary teachers are expected to have a solid foundation in all core subjects. Secondary teachers take extensive upper-level classes in their specific area (University of Nebraska, n.d.). In 2014, the Teaching and Learning International Survey (TALIS) reported that only 5-9% of American teachers felt they were not prepared or only somewhat prepared to begin their careers, meaning a large majority of American teachers felt well prepared or very well prepared (OECD, 2014).

Private school teachers are not required to hold a Nebraska teaching license unless they are an accredited or approved school by the Nebraska Department of Education (Nebraska Department of Education, 2018). Teachers who move in from outside the state have different experiences in teacher education. In addition, national programs such as Teach for America put inexperienced teachers in classrooms, only requiring that they have a bachelor's degree in any major and that they are a U.S. citizen (Teach for America, 2018). While this may seem reckless, much of Nebraska is starved for teachers and cannot afford to turn down those who are willing despite a lack of experience (Nebraska Department of Education, 2019b). One possible explanation for the need to accept teachers without the appropriate credentials is a lack of respect for teachers within society. While 89% of U.S. teachers are satisfied with their job, only 33.7% of teachers felt that they were valued by society (OECD, 2014).

Nebraska teachers are compensated for their work with an annual salary of anywhere between \$30,000 and \$60,000. Pay is based on years of experience, years of service in a district, level of education, position in the school, and location within the state. Pay increases are only based on these factors and very rarely based on merit or evaluation. The Nebraska State Education Association, the teacher's union in Nebraska, alone negotiates teacher salaries and salary tables for pay increases within Nebraska public schools (NSEA, 2018).

After beginning work as a teacher, Nebraska teachers must, by law, show evidence of continued professional growth every 6 years. This can be satisfied by taking college classes or through other options that have been certified by the school board (Nebraska Legislature, 2014). Thus, many Nebraska school districts require teachers to meet a certain number of professional development hours each year. These are often classes or opportunities put forth by the district that offer teachers choices as to which classes would be best for them. As of 2013, TALIS showed that over 95% of American teachers participate in professional development each year (OECD, 2014).

In Finland, teachers can only enter the classroom one way—an accredited teacher education program through one of Finland's universities. This program can take anywhere between 5 and 7 years and will result in a master's in education for primary teachers, or a master's in a particular subject area for secondary teachers (Finnish National Agency for Education, n.d.-b). Master's degrees require a thesis of some sort, and most primary teachers will complete a bachelor's thesis as well. Teachers are well educated in their subjects, related pedagogy, and self-reflection. Their programs focus on using research to enhance their own practices and increase student success (Sahlberg, 2015). Thus, all Finnish teachers are well prepared to improve themselves and their schools on a regular basis. In addition, Finland has

recognized that teaching is more complex than many believe. For example, teaching math requires more than just having a strong understanding of math; pedagogy, a basic understanding of human psychology, and a heart prepared to face challenges outside the field of mathematics are also required of an effective teacher (Sahlberg, 2015).

Additionally, these programs are extremely competitive. Recruits for the program come from the top 25% of upper secondary graduates. Among this top quarter of graduates, programs have an average acceptance rate of only 10% each year. After submitting their paper application, applicants must showcase their passion and knowledge through a take-home test, an observation, and an interview. Only after being seen as exemplary in all of these tasks are they accepted into a program (National Center on Education and the Economy, 2018).

Of course, a low acceptance rate would not be possible without a high volume of applicants. This, as well as the high expectations that applicants must meet prior to being accepted, is enabled by a societal attitude towards teachers that ensures the profession is popular and highly valued. As of 2013, 91% of teachers were satisfied with their job. In addition, 58% felt that their profession was valued by society, one of the highest rates in the world (OECD, 2014). The teaching profession is a sought-after and well-respected career in Finland making it possible for universities and employers to be selective with their teacher applicants. One professor of education at the University of Helsinki explained, "...Finland teachers and schools enjoy strong public confidence....because teachers—as a result of their academic education—have clear moral purpose and independent professional ethos, they are trusted" (Sahlberg, 2015, p. 117). One 2004 Finnish study showed that teaching was rated above doctors, architects, and lawyers as one of the most admired careers (Liiten, 2004).

Despite Finnish teachers' lofty status and rigorous programs, they still face challenges. One incoming primary school teacher wrote that she expects to be challenged by limited resources and conflicting ideas with colleagues and parents, as well as working for the social welfare of students and facing the challenges of an increasingly diverse student population (Sahlberg, 2015, p. 102). To make these challenges more difficult, Finnish teacher education programs include very little, if any, experience in a real classroom. In fact, between 27% and 36% of Finnish teachers felt not at all prepared or only somewhat prepared to begin their first job as a teacher, one of the highest rates in the world (OECD, 2014).

Finnish teachers' base pay is negotiated by the Trade Union of Education in Finland (OAJ), similar to Nebraska pay. In addition, contrary to popular belief, teachers are paid at relatively the same rate as, if not less, than American teachers (National Center on Education and the Economy, 2018). But the similarities generally stop there. While Finnish teachers can earn pay increases with more experience and further education, their pay is also correlated with merit and performance. This is *not* determined based on student performance but on informal feedback from parents, colleagues, and the principal. Teachers can also earn more money if they work more hours than what is required of them outside of the school day. Thus, Finnish teachers are rewarded for effective work, encouraging them to continue excelling (Sahlberg, 2015).

The Finnish National Agency requires that teachers pursue anywhere from 1 to 5 hours of professional development a year. Local units can choose to require additional hours and are responsible for providing opportunities for teachers to earn these hours as well as the nationally required hours. The National Agency provides state funds to produce professional development options for teachers (European Commission, 2018). This legislation was revised in 2016 to

include more funding when TALIS reported in 2013 that only 79% of Finns participated in professional development, 9 points below the international average (OECD, 2014).

Teacher Evaluation

Teacher evaluation looks significantly different in Nebraska and Finland. In Nebraska, teachers are fairly frequently evaluated by district and school superiors including, but not limited to, department chairs, principals, instructional coaches, and curriculum heads. These evaluations are often required for teachers to continue working at that school and be eligible for pay raises, tenure, or any merit-based honors. In addition, teachers are often informally observed by other teachers, student teachers, or instructional coaches (Nebraska Department of Education, 2019a).

In Finland, formal observation is nonexistent. Teachers are widely trusted to do their jobs appropriately rather than be evaluated to ensure they are doing so (Sahlberg, 2015). In addition, international research has shown that Finnish teachers are also very infrequently, if ever, informally evaluated (OECD, 2014). While they are expected to consistently collaborate with their peers, they rarely observe their peers in the classroom.

Curriculum

In Finland, curriculum creation starts at a national level with what's called the National Framework Curricula. This framework states the required distribution of lesson hours among core subjects and includes learning objectives and core content areas of different subjects. While these general requirements must be followed, most curriculum decisions fall to individual municipalities, which in turn often give responsibility to individual schools. Thus, many schools choose which curriculum they would like to follow, how they would like it taught, and when they would like to teach it. When these decisions need to be made, they are very rarely made

without several of the teachers present to give input and help design the final school curriculum. Teachers and schools in Finland have the autonomy to make their own decisions about the best curriculum for their students (Finnish National Agency for Education, n.d.-a).

In Nebraska, the state government writes its own state standards in each subject, similar to the Finnish National Curriculum. Each district in Nebraska chooses its own curriculum to meet these standards, and this curriculum is used district-wide (Nebraska Department of Education, n.d.-b). In rural towns, the district may include one high school, but in urban areas, districts often include several high schools, and the staff in each high school is not given a choice as to which curriculum they feel is best suited for their students. In many districts, teachers are asked to give input as to which curriculum they feel would be best, though they're not often extensively included in the decision.

In 2015, the international PISA exam found that when curriculum creation is in the hands of the local teachers and schools, students are positively impacted, whereas national curriculum decisions often negatively impact student outcomes, showing that local and teacher autonomy may well be in the best interest of the students. The same relationship was found between assessment policies and student outcomes. The more responsibility teachers and schools were given for assessment policies as opposed to the national government, the better students did on the international PISA exam (OECD, 2018).

Student Assessment

In Finland, standardized student assessment is a hurdle most teachers rarely have to jump. Other than international exams, which most Finnish teachers find to be unimportant, there are few standardized assessments that students or teachers need to think about (Sahlberg, 2015). One

of these is the National Matriculation Examination, required only of students wishing to pursue education after upper secondary education. This assessment is not used to evaluate teachers or schools, but only to give a benchmark for universities to evaluate student applications (Finland Ministry of Education and Culture, n.d.). Still, many Finns disagree with the use of this test. Some empirical findings show that this one exam has had significant effects on curriculum and teaching in upper secondary school (Häivälä, 2009). Any other required assessments are only used on a sample of schools every few years. These assessments cannot be publicly distributed and are only used to improve schools and municipalities, rather than specifically assess teachers or students (Finnish Education Evaluation Centre, n.d.). There are optional assessments as well, though these are administered only if the teacher chooses to do so, and the results are never seen by anyone other than the teacher. Typically, these assessments are used by teachers to ensure that their students are on track with what they need to be learning for future success.

In Nebraska, all students are required to be assessed every 1-3 years from 3rd grade through 11th grade. For example, the Nebraska Student-Centered Assessment System (NSCAS) administers the mathematics exam every year to students in 3rd, 4th, 5th, 6th, 7th, and 8th grade. Thus, students are being assessed in math every single year for 6 years. In 11th grade, all students are required to take the ACT (formerly the acronym for American College Testing) because it is a requirement for students considering college. Each school's test results are published publicly on the Nebraska State Department Website every year and are used as a way to evaluate schools and districts on an annual basis (Nebraska Department of Education, 2019c). Thus, standardized assessment in Finland and Nebraska could not look more different.

Special Education

In Nebraska, special education supports students with a variety of physical disabilities, learning disabilities, and behavior disorders. If a student is not diagnosed with one of these conditions outside of school, it is a teacher's responsibility, especially in primary school, to track any symptoms that may signify a disability or disorder. If a student is diagnosed with one of these, they are given either a 504 plan, commonly used for less extensive disabilities, or an Individualized Education Program (IEP) if the disability is significantly restricting learning. A student with one of these plans is assigned a case manager and will have meetings with parents, teachers, and the case manager on a regular basis to ensure goals are being met and progress is being made to overcome the disability. American special education believes in providing the least restrictive environment for students diagnosed with a disability. This means that students should be learning in the most normal environment that works for them. Thus, classroom inclusion and mainstreaming are the ideal goals for students with disabilities, though this may not always be possible (Nebraska Department of Education, n.d.-c).

Since most disabilities and disorders begin to appear during early and primary years, it makes sense that Nebraska's most recent data, collected in 2017, shows a steady increase in the number of students diagnosed with disabilities from ages 3 through 9 (U.S. Department of Education, 2017). Finland's data shows a different trend; rather than diagnosing disabilities as they become a problem, Finns use what they consider to be a preventative method that results in almost a third of all primary students being placed in special education. Most of this happens at the very beginning of their time in school, and the number of students in special education decreases throughout primary school years (Sahlberg, 2015). In fact, Finnish special education includes more than just physical, behavioral, and intellectual disabilities; it also includes students

who may not have a specific disability but just difficulty learning a specific subject. Finnish special education also believes in mainstream schooling and sees it as a priority for all students (European Commission, 2018a).

Equitable Policy

One part of education that Finland prides itself on is its equitable policies that ensure that diverse students of different socioeconomic backgrounds are all able to achieve at the same high levels. The OECD has found that increased equity correlates with increased learning outcomes (OECD, 2014a). According to Pasi Sahlberg, one key piece of policy that ensures this equity is a lack of school competition and school choice (Sahlberg, 2015). The 2012 PISA data showed that an increase in school choice for students through the creation of charter schools did not appear to improve student learning. In addition, this school choice saw an increase in segregation in the education system (OECD, 2014a).

The first education reform in Finland occurred in the 1980s. One of the largest changes made during this reform was the abolishment of tracking and streaming, which is the practice of separating students into groups based on natural ability from an early age. Instead, this reform required all students to perform at the same high level. This was heavily protested by many in Finland, most notably the prime minister. The protestors' opinion was that keeping all students at the same level of classes was keeping many students from reaching their full potential, despite there being no evidence that this was the case. Protests subsided quickly when the first PISA study was published in 2001, showing Finland as the top performer in the study (Sahlberg, 2015).

Nebraska has outlawed charter schools, therefore the state has none, but there are a significant number of private schools that increase school competition and school choice in the state (Center for Education Reform, 2018). Additionally, many schools in the state do practice tracking and streaming starting at early ages (Elkhorn Public Schools, n.d.; Omaha Public Schools, n.d.; Lincoln Public Schools, n.d.). Yet, the 2015 PISA results showed the U.S. making significant improvements in the category of equity. PISA typically measures equity by looking at the percentage of variance that is accounted for by socioeconomic status. In 2012, the U.S. trailed far behind other countries with 23% of variance being explained by socioeconomic status, while Finland was at 6% (OECD, 2014a). In 2015, Finland and the U.S. had 10% and 11% of their variance explained by socioeconomic status, respectively (OECD, 2018). In the future, it may be helpful to identify possible explanations as to why U.S. variation has decreased, but this is not covered in this study.

Global Education Reform Movement

This research would be incomplete without considering the history of global education reform, mainly the Global Education Reform Movement (GERM). This unofficial movement has influenced educational reform around the world since the 1980's and includes five features that have been particularly influential in the U.S. These features are an increase in school competition, the movement towards education standardization, a focus on core subjects such as literacy and numeracy, the inclusion of test-based accountability, and school choice (Sahlberg, 2016). Finland has instead focused on features such as personalized learning, collaboration among schools, and trust-based responsibility that are quite the opposite of standardization, accountability, and competition. It is worth noting that because the entire American system of government and economy are based in capitalism and competition, that belief would also trend in

its education system, easily incorporating the GERM methods. The Finns, however, have seemingly turned that upside down, focusing their education system on equity and helpfulness for children, in effect, treating children like children, rather than expecting them to compete as adults.

Factors Outside Education

Research has shown that factors outside of the school building can have as much as or more of an effect on student achievement than in-school factors (Farooq, Chaudhry, Shafiq, & Berhanu, 2011). Therefore, no matter what policies are made to affect a student's time in the classroom, there are outside factors that must be considered. One of these factors is the presence of income inequalities. The 2012 PISA report recognized a weak but present negative relationship between income inequality and mathematics achievement (OECD, 2014a). Finland has put supports in their society and schools that have resulted in a decrease in income inequality. The U.S. has supports in place but high levels of income inequality still exist and may be one factor contributing to lower international scores.

Most problematic to learning is the number of children living in poverty. Given the significant impact that outside factors have on a child's education, limiting child poverty is key to ensuring that all students have a chance at high achievement. As of 2012, the United Nations Children's Fund (UNICEF) reported that 23.1% of U.S. children are in poverty, while only 5.3% of Finnish children are in poverty (UNICEF Innocenti Research Centre, 2012). With such a huge difference between the two countries, it may be fruitless to try to increase student achievement without first addressing the issue of widespread child poverty in the U.S. One way that Finland improves education is by growing public sectors such as education and welfare so that they are

interdependent on each other, in other words, so that they grow together, helping each other thrive (Sahlberg, 2015).

Finally, the values and culture that exist within Finnish society are extremely important. Richard Lewis discovered that two of the main values that have constructed and maintained education in Finland are law-abiding citizenry and trust in authority including schools (Lewis, 2005). Finland has a strong rule of law, in fact, the strongest rule of law in the world. While the U.S. rule of law is stronger than most, it is still 25% lower than Finland (The Global Economy, 2017). In addition, interviews discussed later in the study show a high level of trust in schools and teachers in Finland.

Other Possible Explanations for Test Results

PISA was specifically designed to measure each student's ability to apply what they have learned in school to real-world situations, requiring a level of collaborative problem solving (OECD, n.d.). Some speculation suggests that Finland may be exceeding at these tasks because of their mathematics curriculum's focus on real-world problem solving, while Nebraska focuses more on math facts and memorization (Sahlberg, 2015, p. 71). In addition, Finland has a stronger culture of literacy and reading for pleasure than the United States. According to the 2009 PISA exam, 60% of fifth-graders in Finland read for their own enjoyment, while only 30% of American fifth-graders read for pleasure (OECD, 2010). These differing reading habits may contribute to the correlating reading scores on international exams. Finally, it is always important to consider the validity and importance of exams such as the PISA. While these types of test results can help inform, they should not have the power to dictate educational change (or lack thereof).

Methodology

In beginning research, the goal was to develop a better understanding of how education policy differs in the United States and Finland. More specifically, the hope was to determine how this policy affects a math teacher's ability to do their job most effectively. While quantitative data is a prevalent method in comparing two different systems and while this data has been extensively used in this paper to locate some of the key differences for more informed research, the research question at hand required qualitative data that reflected teacher perspectives rather than international data and government opinions. As a math teacher myself, my own perspectives and biases may have influenced the direction of the data collected but has not influenced any thoughts or actions on the part of interviewees. With the knowledge that this data would cover a wide variety of topics with limited scope in terms of geography and perspectives, the main purpose of this study is to open the door to further research on more specific topics that may arise.

Nebraskan participants were found by asking for volunteers in one district in Lincoln. Two of these teachers offered to participate. Possible Finnish participants were identified through communication with a Finnish teacher educator. Of those asked, two Finnish teachers volunteered to participate. All interviews were semi-structured to allow for flexibility to cover topics that participants felt were most relevant to the research question. All participants were given a little bit of background information as to what "education policy" refers to at the start of each interview. General questions that were asked of every participant were 'What parts of education policy impact your work as a teacher,' 'What do your superiors expect of you inside and outside the classroom,' 'What policy or expectations support you in your work,' and 'What policy or expectations constrain you in your work.' Interviews ranged anywhere from 30 to 90

minutes and were transcribed so that all recordings could be deleted, and participants could stay anonymous. Major themes and content areas of each interview were analyzed and compared, and further research was done around each area to develop a better understanding of the responses.

Research was limited by only being able to interview teachers from one district in Nebraska. In addition, finding participants in Nebraska was difficult due to a lack of interest. Even while seeing potential participants in Nebraska every day, and being readily available at any time, Nebraska teachers were uninterested in taking time to answer questions and contribute to research. Finnish teachers were much more interested, asking many questions, and eager to contribute as much as they could, even offering to help with further research, and asking additional research questions that they wanted to help me address. Unfortunately, trying to conduct research in a different time zone and in a limited amount of time forced me to limit my participants, though I see no reason that future research wouldn't be able to find participants again.

The most obvious solution to determining possible explanations for why Finland performs so much better than the U.S. is to directly compare U.S. and Finnish policy and practices. Unfortunately, this presents several issues. First, as a researcher, this just isn't plausible. To ensure that collected U.S. data is representative of the population, teachers would need to be interviewed in every state, in urban and rural environments, across all subject areas, in primary and secondary schools and so on. This study would be so extensive that it would take decades to complete. Furthermore, even if this study were plausible, to directly compare a country exceeding 327 million people to a country with a population of only 5.5 million is absurd. Directing policy for 5.5 million people compared to a country 59 times its size requires a completely different way of governing, especially considering that the U.S. is comprised of 50

states, each with their own unique government. But, comparing Finland to a specific state is significantly more logical and plausible. Since the U.S. gives each state much autonomy in its own state government and state policies, American states can reasonably be compared to the sovereign country in Finland.

Results and Discussion

Classroom Expectations

One striking result of the interviews was the different answers given when asked what the expectations were of teachers inside the classroom. One Nebraska teacher listed the following expectations: state the lesson objective, reference the lesson objective throughout the lesson, use Kagan structures when facilitating discussion, utilize all class time, and engage students so there is no passive learning. A Finnish teacher listed these expectations: create a good learning atmosphere, follow absences and report student welfare concerns, and forward struggling students to a special education teacher. While both teachers are expected to create a good learning environment, the Nebraska teacher is told how to do so. This points to a significant difference in the level of autonomy each teacher enjoys in the classroom.

A Teacher's Liberty

This is a pointed example of what one Finnish participant explained as a “teacher’s liberty”. The participant claims that this liberty is what allows teachers in Finland to do their best work. I understood this liberty to be the difference between high expectations versus just a lot of requirements. There are high expectations of Finnish teachers that they do create an exemplary learning environment for their students. How the teacher attains this is up to them, but the expectation is still there. On the other hand, Nebraskan teachers may be held to high

expectations, but they appear to be less trusted to meet them. The many teacher requirements in place to support those high expectations include such specifics as stating and restating objectives and using Kagan structures. This same theme can be seen in areas such as curriculum, assessment, and teacher evaluation.

Curriculum

All interviewed teachers in both Nebraska and Finland mentioned curriculum as a piece of policy that affects their day to day job. This is to be expected since a curriculum is designed to structure what students should be learning in the classroom. However, the ways in which curriculum affects teachers appear to differ significantly in Nebraska and Finland. As previously explained, the Finnish curriculum is created by each school and is written by the school's teachers to align with the national curriculum framework. While each Finnish school's curriculum looks a little different, they generally list what classes are to be taught and what should be taught in each class. For example, a lower secondary school curriculum might include Algebra as a class that will be taught and will state that required subjects for that class are linear functions, solutions on graphs, and other algebraic topics.

However, how this curriculum is interpreted by each teacher is significantly different. One Finnish participant explained that in compulsory education, they have the liberty, as teachers, to choose what order these classes will be taught in and “of course” in what order to teach the topics. In upper secondary school, there is a set order for the classes, but teachers are still able to choose the order of the topics in the class.

To compare, one Nebraskan teacher stated that they felt “excited” for the upcoming year because they found out they could choose how they wanted to teach a certain topic. They don't

get to choose what order to teach their classes, or what order to teach the topics, or even what lesson to teach when. But, they now get to choose how to teach a specific lesson. In fact, the curriculum being used by this teacher dictates every part of every lesson down to what questions a teacher should ask a student who might be stuck.

Anyone who has gone through an American teacher education program has learned topics such as writing lesson plans, developing assessments, learning how to question and facilitate discussion, and how to generally teach a student a topic. And yet, this Nebraskan teacher is not even trusted to develop their own lesson. This is not a reflection on this teacher's ability, but on the liberty Nebraskan teachers receive to do their job effectively. One Nebraskan teacher felt the curriculum constrained their creativity and ability to create engaging and exciting lessons. Another Nebraskan teacher didn't feel that the curriculum allowed students to master the material. These teachers do not have the liberty to make changes to best serve their students. They voice their opinion to the district and hope for change.

Student Assessment

Another place that this Finnish liberty is seen is in student assessment. Nebraskan teachers reported using standard tests for each unit. These tests are written by the district and used by every teacher teaching the same class. Finnish teachers reported that each teacher gets the choice as to how they want to assess their students. This may involve a test, though according to one participant, Finnish teachers are being encouraged to move away from testing. Participants reported often collaborating with other teachers to find good test questions or new ideas to assess knowledge, but each teacher has the liberty to choose their own method of assessment. It is worth noting that, according to the OECD, Finnish teachers only spend approximately 600 hours teaching a year while American teachers spend upwards of 1100 hours,

giving Finnish teachers significantly more time to develop assessments and create curriculum (OECD 2014a).

One benefit to standardized tests in Nebraska is that all students know that whoever their teacher is, the tests are going to have the same format. In other words, students don't fail the first test with a new teacher because they were caught off guard by formatting or difficulty. This makes it easier when a student needs to switch classes or even schools. This also comes with the benefit that all students in the district are being measured with the same material. Thus, a B+ with Teacher A means the same thing as a B+ with Teacher B. Another reason standardized tests can be favored is that it makes it easy to compare classes. Teachers know which of their classes have a better understanding of the material, but more importantly, superiors and other teachers know who has the most successful classes. Whether or not this is a benefit is up for debate. Again, Finnish teachers argue that the liberty to choose makes them better. According to Sahlberg, Finnish teachers know they lose some of the benefits of standardization but believe this is a small price to pay in exchange for a better education for their students (Sahlberg, 2015).

Teacher Evaluation

Finnish interviews were able to confirm much of the research about the presence of teacher evaluation, both formal and informal. One participant stated, "...since there aren't any outsiders coming into the classroom and saying, 'hey, you suck,' then we kind of need to find it out ourselves." Thus, it seems that while formal evaluation isn't present, teachers have been educated to evaluate themselves on a regular basis. As stated previously, it could be argued that this lack of accountability allows teachers to experiment with new strategies and ideas to find the best option for their students. It could also be argued that a lack of evaluation does not push teachers to be their best since no one is watching. While there is no clear evidence in either

direction, it's important to note that if the latter were true, it's unlikely the current Finnish test results would be possible.

According to one Finnish participant, there has been a recent push to increase teacher regulation. The Finnish teacher union has been pushing against this since many teachers feel that the autonomy they enjoy is why they are able to do their jobs effectively. If municipalities decide to decrease autonomy, effects on student achievement could be observed.

Special Education

One surprising result of the interview research was more insight into how special education impacts general teachers in the classroom. Nebraska teachers did not mention special education as being a significant factor in their ability to teach, though they were never specifically asked to speak about it. Both Finnish teachers did provide feedback about special education in their schools without any prompting. One teacher explained that having a special education teacher assigned to their class was extremely helpful because students who needed more help could be pulled from the class to learn in a small group. While they explained that it can be difficult ensuring that the class and the special education small group are moving at the same pace, they didn't know if there was anything that could be changed to make that easier. Another Finnish teacher explained that they feel fairly constrained by special education students since they don't get pulled to be in a small group; they feel limited in their ability to do certain activities, though they in no way implied that this constraint was not worth the benefits.

According to policy research, Finland works to incorporate all special education students into the mainstream classroom in an attempt to provide the least restrictive environment.

Interview results showed mixed use of this policy; while one teacher feels constrained by these

students, another teacher felt supported by students being pulled out of their classroom. This raises questions as to whether special education in Finland is as mainstreamed as it claims to be.

Teacher Education

As previously explained, teacher education looks very different in Nebraska and Finland. Interviews showed that Nebraskan teachers felt that parts of their education haven't been used; for example, education as to how to write and interpret assessments is rarely used due to chapter tests being standardized across the district. Finnish teachers, while potentially unprepared to enter the classroom, felt very prepared to, and were asked to, assess their teaching methods and results and make changes as needed. However, Nebraska teachers didn't mention wishing they had more education in this area. This may perhaps be because their success in the classroom is frequently evaluated by peers and superiors while Finnish teachers do not receive that feedback.

Government Accountability

One Nebraska teacher also mentioned feeling quite a bit of pressure to make decisions that will increase the school's graduation rate. Specifically, they felt that there was some pressure to pass students even if they had not earned a passing grade. Finnish teachers do not experience this same pressure as one explained that it is against the law to compare basic education schools. Schools are expected to evaluate themselves on a regular basis, but they are under no obligation to report their findings to their local government. This is clearly not the case in Nebraska where school statistics and test results are published on a yearly basis, allowing for each school to be rated on a four-point scale from "Needs Improvement" to "Excellent." This pushes Nebraska schools to focus on measures such as graduation rates.

The pressure to pass students regardless of content mastery was only mentioned by one Nebraska teacher. If more teachers were asked, it may be that more than just one teacher does feel this pressure. While there is insufficient evidence to conclude this is a pattern, it is worth considering the effect this pressure has on the student and the teacher. It is also worth noting that the prohibition of comparing basic education schools in Finland releases that pressure on schools and teachers. It can be argued that this allows Finnish teachers to focus on ensuring all students are actually prepared to move on to the next step in their education, even if this takes an extra year. It could also be argued that this lack of pressure may result in a decrease in effort to help students pass if they are struggling. Again, this research does not provide any evidence in either direction but may motivate further research.

School Resources

Of course, policy changes do not fix all potential problems. It is important to note that one teacher in both Nebraska and Finland wished they had more monetary funds or more school resources. Both teachers also accompanied the statement with “of course I wish” or “I don’t think any teacher doesn’t wish for more” as if it should be assumed that this was desired but unattainable. This is likely a constraint that no teacher will ever escape. But, these teachers’ different perspectives on these funds were different in one small way.

While the Nebraskan teacher was aware of a need, they were simultaneously aware that it was completely out of their hands. Any funds were funneled down from the bureaucracies above, leaving this teacher with no options but to accept whatever they were given.

The Finnish teacher noted that there were ways in which they could do their part to increase resources by a small amount through a piece of policy administered by the city of

Helsinki. In Helsinki, schools, with the help of the teachers, can create schoolwide goals that they are going to try to accomplish. These are decided on in advance and the completion of these goals result in increased funds from the city. While these funds may not always directly funnel to new classroom equipment or other teacher needs, teachers are aware that they are being used to better the welfare and success of the students in the school.

This Finnish teacher also noted the use of a fund loosely translated as “Possible Discrimination Money.” While funds in Finland are generally fairly evenly distributed, there are particular suburban areas just outside Helsinki that are at risk of becoming impoverished environments. Schools in these areas can apply for the “Possible Discrimination Money” to combat this risk.

Community Respect for Teachers

One large cultural difference that was seen in the interviews was the level of respect each teacher felt they had in the community. One Nebraskan teacher explained that since many teachers don't feel they're treated as professionals, they begin to stop acting like professionals, which only encourages the community to continue to not treat them as professionals. This teacher explained that they always do their best to act as a professional with other teachers, with parents, with students, and in the community so that they can earn the respect they feel all teachers deserve. Finnish participants did not convey the same concern for professionalism. One participant stated that teachers are one of the most valued professions in the country, ranking with doctors and lawyers. Another Finnish participant explained that this is because of their advanced degrees—it earns them a level of respect among parents. They are well trusted.

One Finnish teacher explained that they try not to reveal their profession to strangers they begin talking with because if it's realized that they are a teacher, that is all the person will want to talk about. This can be compared to when Americans find out someone is a doctor—they want to know what kind of doctor and how many lives they've saved and if it's hard or stressful. If someone is a lawyer, Americans want to know about their most interactive case and how many hours a week they work. We rarely ask such eager questions of a coffee barista or an accountant. This is because of the respect we have for these professions. We trust that they are experts in their field. It is possible that we do not trust Nebraskan teachers to be experts in their field which could explain issues such as low teacher pay, low teacher retention, low teacher satisfaction, and low student achievement.

Teacher Collaboration

One positive piece of evidence that was found was a strong amount of collaboration in both Nebraska and Finland. The Nebraskan participants explained the use of a professional learning community (PLC), a large room where all of the teachers in that school have their desks located to allow for easy collaboration. This is characterized by the use of frequent communication among teachers in areas such as lesson planning, quiz writing, and classroom management. Finnish participants are also not only encouraged but expected to frequently communicate with other teachers about lessons, test questions, and ways to improve their students' learning. One Finnish participant also mentioned the use of teamwork by explaining that in developing school-wide goals it is required that all teachers work together to create and meet these goals. Not all teachers always agree on these goals but they choose to work for the same goals regardless because they know they're working as part of a team and they have significant confidence in their colleagues. Research has shown that frequent collaboration among

teachers leads to higher success for students so it is encouraging to see this aspect in both geographic locations (Vescio, Ross, & Adams, 2008).

Collaboration allows both Nebraskan and Finnish teachers to strive to support students, but this support does seem to look a bit different because of a contrast in student autonomy that appeared in interviews. Nebraska teachers felt very responsible for their students' learning and success, as is to be expected from any teacher. But, participants spoke as if it is frequently assumed that if students don't remember or accurately recall past material, it is likely the teacher's fault. Conversely, one Finnish participant explained that the textbook a teacher chooses to use in the classroom is extremely important because if a topic does not make enough sense to a student at school, it is the student's responsibility to go home and try to learn as much as they can on their own. Thus, the use of a good textbook is vital in ensuring that students stay on track. It is also important to note that the book used in a classroom is chosen by the teacher to best align with their lessons, rather than being chosen by the school or municipality.

A Culture of Morality

Given that there appears to be a lack of accountability in Finland, one Finnish teacher explained that the system only works because of the sense of morality in the country. According to the participant, much of Finnish success, not just in education, is based on a Protestant background. The participant stated, "I can't do bad things, even if no one will see...and then if you have that kind of culture, then you can have certain liberties in the school system." The participant explained that according to their religion, they are not forgiven for the immoral choices they make; instead, these choices pile up until their death, at which point they are judged. Thus, it is a widespread belief that it is in each individual's best interest to act morally

whether or not anyone will ever find out. This participant also stated that there are many people who are not actually religious, but the moral sentiment is still present.

This morality explains why formal security is unneeded at schools in Finland. In Nebraska, schools often hire several security guards to patrol the halls, round up students, handle difficult behavior situations, and watch for unauthorized visitors. Nebraska schools also often utilize a strict protocol that requires all students to check in and out of the school building every morning and afternoon. There are processes in place for students with behavior issues that include detentions, in-school suspension, and out-of-school suspension, as well as expulsion. Many larger districts have alternative schools in place for students who have been expelled. These schools require even more security measures be in place. One Nebraska teacher explained that behavior issues in the classroom take quite a bit of energy for teachers to handle. Teachers constantly struggle with disciplining students without distracting the class, debating whether or not to send them to the principal's office just to get them out of the room. This Nebraska participant said that if there was one thing they could change at an administration level, it would be how behavior issues are handled.

Finnish teachers reported not having any security issues at their schools. Finland does not have any schools comparable to a Nebraskan alternative school and there are no security guards present at Finnish schools. One teacher mentioned that they rotate taking the job of observing outdoor areas during free periods, similar to how an elementary teacher does during recess in Nebraska. This participant also relayed to me the one time they had to settle a behavioral issue; they told the student not to do what they were doing, and the student said okay and stopped. It is quite possible that Finnish teachers do not have the same behavioral issues due to a higher standard of values and morals in the culture.

Diversity

Diversity was another cultural topic that did come up in one interview with a Finnish teacher. While having diverse classes is not a new challenge for Nebraskan teachers, it is becoming an increasingly difficult challenge for Finns. For 30 years, Finland stayed a fairly homogenous country with only around 10,000 foreigners. In the 1980s, this number more than doubled to over 20,000, and then grew to 91,000 by 2000 (Raento & Husso, 2002). This rapid growth has only continued, and teachers are just beginning to have a significant number of students with cultural barriers. Nevertheless, one Finnish participant mentioned that while this may be a bigger challenge in more language-based classes, it does not produce quite as many challenges in a math class where the language is fairly similar around the world.

Conclusion

This study has prompted several research questions for the future. Surrounding equity, there are two topics that may be helpful to do further research on. First, given that Finnish higher education is publicly financed and available to all students, it would be helpful to know how this policy impacts students in compulsory education. Specifically, does this opportunity give Finnish students more incentive to continue through upper secondary school since higher education is attainable? Second, since there aren't many cities in Finland that are large enough to require suburban areas, does this help maintain equity among students? In other words, since suburban areas appear to be where there is more poverty in Finland, does the limited number of these decrease the number of students in poverty and therefore increase equity for all students?

There are also a couple of questions that have risen around the impact of a rigorous, research-based teacher education program. This research process appeared to bring increased

interest in research from Finnish teachers, while Nebraskan teachers were content with the status quo. It is quite possible that this is due to the research-based teacher education that Finnish teachers receive, but another study about this specific topic would be required. There are also implications that may influence why Finnish citizens choose to enter the teacher education program. It would be helpful to know if citizens enter the profession in order to have a prestigious career, if the rigor of the program ensures that those who complete the program really are passionate about education, or perhaps both.

In terms of school and teacher autonomy, there are also a couple of questions that have come up that may have implications for future Nebraska policy. Finnish teachers are not judged based on their students' achievement, giving them the autonomy to make whatever choices they feel are best, but they can have their pay increased based on other links to their merit and performance. These factors include additional qualifications or skills, compensation for additional hours worked, and a possible bonus based on parent, colleague, and principal feedback. In addition, schools can earn a collective bonus based on good work achieved as a team (Sahlberg, 2015). Future research may be able to determine how this system affects teachers in the classroom and if it could be implemented in Nebraska. Second, since this autonomy allows schools and teachers to make bold choices, there is no need for any schools to be established outside government control, limiting the presence of school competition and school choice. It would be helpful to conduct research on whether or not government control over the Nebraska school system does encourage the desire for more school choice. Additionally, further research as to how teacher autonomy may encourage student success would open the door to allow for more autonomy in Nebraska.

Finally, this research would not be complete without noting that Finnish international scores have decreased in the past few years, though Finland continues to compete with top performers. If international performance continues to get worse, it may be worth determining what is causing this decrease in scores, with possible explanations being increased diversity, a false sense of security based on international attention, or an increase in school and teacher regulation.

By analyzing Finnish and Nebraskan policy and evaluating the impacts of this policy on teachers in both places, this thesis has found a significant difference in teacher and school autonomy that influences how teachers do their job and how they feel about the job they are doing. It was also found that the culture of each society plays a large role in the policy that is enacted, and the effects policy may have. This culture must be considered in any research moving forward. Future research can now be based on some of these conclusions so that additional information can be collected surrounding these areas. With supporting research, policy changes could be made to better support students in Nebraska, and eventually, the country.

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