Beliefs About Tracking: Comparing American and Finnish Prospective Mathematics Teachers

Benjamin Hedrick and Erin Baldinger
Stanford University

This study considers the beliefs held by American and Finnish prospective teachers regarding tracking in mathematics classes. The differing educational trajectories of the two countries provide a context to consider competing perspectives on tracking. This study builds on previous research investigating Finnish prospective teachers’ beliefs. The purpose of this study is to broaden our knowledge of how prospective teachers’ attitudes vary in distinct cultures and how cultural conceptions of equity affect teachers’ beliefs concerning student performance.

Beginning in the 1950s and 60s, the United States and Finland both struggled to adapt their educational systems to meet the changing needs of a more industrialized and technical society (Troen, 1975; Kupiainen, Hautamäki, & Karjalainen, 2009). The United States, partially in response to scientific challenges from the Soviet Union, developed tracked educational systems (Ravitch, 1983; Hartman 2008). Class enrollment was organized by perceived student ability levels in order to meet the specific needs of students. In Finland, however, a societal drive to meet the needs of the many resulted in the Basic School Law, eliminating tracking to promote equity for all students (Laukkanen, 2007).

According to Finnish scholars, and as indicated by international measures, Finland’s change to a detracked system in conjunction with rigorous teacher training have led to increased student attainment in mathematics (OECD, 2004, 2007, 2010; Kupiainen, Hautamäki, & Karjalainen, 2009). American performance on such measures has been
mediocre to poor, and research leaders have deemed nations such as Finland worthy of attention, particularly in the area of teacher preparation (Darling-Hammond, 2008, 2009). Simple comparisons of the two countries and their educational systems are of course naïve; critics have cited size, population, and homogeneity as several reasons why direct comparisons are challenging (Darling-Hammond, 2009; Kupiainen, Sirkku, & Pehkonen, 2008; OECD, 2011). Cultural differences, however, including the attitudes and pre-dispositions that prospective teachers have before entering teacher preparation, are both relevant and researchable. More importantly, understanding these perspectives sheds light not simply on what skills are taught in teacher preparation programs, but additionally on what attitudes and beliefs prospective teachers might gain through this process, particularly with respect to issues such as ability grouping in mathematics.

This study analyzes the perspectives of prospective mathematics teachers in the United States and Finland with respect to promoting mathematical equity and excellence. Focusing the study on current prospective teachers enables us to better understand what attitudes and beliefs they bring to their classrooms specific to the concept of ability grouping. The study addresses how American and Finnish prospective teachers talk about the advantages and disadvantages of same and mixed performance classrooms and considers how these divisions might affect the learning of high and low performing students. We use a
cultural lens in order to shed light on what qualities are endogenous and what effect teacher training may have on the attitudes and perceptions of future teachers.

**Background Literature**

In order to understand the perspectives of the prospective mathematics teachers, it is important to begin by unpacking the cultural contexts in which they grew up, were educated, and will work. We then examine ability-grouping practices in particular and consider the existing literature around the affordances and constraints of same and mixed performance groups. Finally, within this context, we consider the role of teacher beliefs.

**Education in the United States**

In the United States in the 1890s, only about 8% of the school-age population was enrolled in high school, and “advanced topics” such as algebra were specifically reserved for the intellectual elite who would be attending such institutions (Reese, 1985). High stakes testing was required to advance from one grade to the next; students who failed either stayed behind or simply dropped out. By the beginning of the 20th century, an increasingly industrialized country required a more educated workforce, and demand for high school educated workers rose dramatically (Troen, 1975). The American comprehensive high school was born as a result, and distinct tracks emerged in the 1920s that promised a commonly shared educational experience for all students while still offering specialized
knowledge in the relevant subjects or disciplines (Wheelock, 1992). The NDEA (National Defense Education Act) was adopted in 1958, precipitated by the Soviet launching of Sputnik in 1957. Supporting scientific development was seen as a national security goal, and building new schools was deferred in favor of the support of science in public schools. Within this context, tracking in its most modern form, particularly in mathematics, was established.

Mathematics teacher preparation in the United States varies based on whether teachers plan to teach elementary school or secondary school. Typically, future high school math teachers complete either a major in the field (Graham & Fennell, 2001) or a certain sequence of mathematics courses (Hodge, Gerberry, Moss, & Staples, 2010). Courses include calculus, linear algebra, real analysis, abstract algebra, and other electives (Hodge et al., 2010). No Child Left Behind made a demonstration of subject-matter competency a requirement for new teachers (Ball, Hill, & Bass, 2005). Future elementary school teachers, on the other hand, are prepared to teach multiple subjects. They often lack confidence in teaching mathematics, sometimes struggling with the content (e.g. Ball et al., 2005; Ma, 1999).

**Education in Finland**

Finland also faced critical societal concerns in the 1950s and 1960s as the country rapidly changed from an agrarian society to an industrial state (Kupiainen, Hautamäki,
Karjalainen, 2009). Just as in the United States, a dramatically increased need for qualified workers arose, and a comprehensive school system (*peruskoulu*) was established as a result. This reform, known as the Basic School Law of 1968, contrasted greatly with the path chosen by the United States as it aimed for “equity everywhere and for everybody” (Hautamäki & Hautamäki, 2008, p. 26) as well as high academic standards across the whole country (Kupiainen, Hautamäki, & Karjalainen, 2009). Though this change was strongly politically debated and challenged, the long-term effects of this change are cited as a major influence in Finland’s outstanding mathematical advances (Centre for Educational Assessment, 2008).

Equity issues are still a concern in Finland, although not in the same way as they are in the United States. Finland is an ethnically homogeneous country, where approximately 93.4% of the population is ethnically Finnish, and the largest minority group – Finland-Swedes – comprises 5.6% of the population (CIA, 2010). Concern comes more from differences in opportunities afforded in general terms and from differing socio-economic statuses. For example, Finnish schools strongly favor mainstreaming special education students when possible (Kupiainen, Hautamäki, & Karjalainen, 2009). Hautamäki et al. write regarding the PISA examination data that, “According to our [Finnish] basic philosophy of equality, high between-school variation would be a moral dilemma in relation to ideas of general knowledge and universal value of enlightenment” (2008, p. 199). Additionally,
examination of PISA results showed that there was a statistically significant difference
between the scores of students from urban schools and rural schools (550 and 542 score
points, respectively), which was a cause for concern (Kupiainen & Pehkonen, 2008). Still,
the Finns strongly believe that their system is an equitable one even as they try to fix these
differences. Hautamäki and Hautamäki write:

One can, of course, still track some old habits and implicit models of the segregated
school system, but these are met openly and discussed within a framework for school
for all. However, the debates include issues of differentiation and selection, tracking
and other means of allowing for individual choices and subject selections. These
debates are needed in all educational systems which have to cope with the very
difficult educational issue of how to handle student variation (2008, p. 27-28)

One additional and important aspect of Finnish education is that of teacher training,
which was fundamentally altered in 1975, though not through the Basic School Law.

Teacher training in Finland differs from the norm in the United States, which is due in part to
the difference in status of teachers in Finland, who have traditionally enjoyed high respect
and admiration (Simola, 2005). In a recent national poll, over 26% of upper secondary
school graduates rated teaching as the most desirable profession (Sahlberg, 2007). As a result,
admission into teacher education programs in Finland is highly competitive, with only 10%
of applicants accepted (Westbury, Hansen, Kansanen, & Björkvist, 2005). Teacher training
programs are exclusively at the Master’s degree level; Finnish prospective teachers must first
study their major subject before being accepted into the Faculty of Education. Additionally,
Finnish teachers (both elementary and secondary) commonly pursue certification in multiple subjects and are responsible for teaching multiple subjects once they obtain a teaching position. Finnish prospective teachers also, as part of their degree, engage in educational research and eventually produce a Master’s thesis based on this research. This final requirement is relevant to this study in that teacher trainees are made deliberately aware of research practices, making possible theoretical discussions on educational issues in a foreign language.

**Ability Grouping in Mathematics**

**United States ability grouping.** In the United States, students are sorted into performance groups by perceived ability, though student self-selection or parental request may also be factors (Carey, Farris, & Carpenter, 1994). Typically students are grouped into high performance classes (sometimes called “honors” classes), middle performance classes (often referred to as “on-level” classes), or low performance classes (called by names ranging from “remedial” classes to “vocational track” classes) based on test scores and performance as early as elementary school (Oakes, 1985). In principle, these classes can thus focus on the specified learning goals of the group, leading to increased knowledge and achievement for all involved throughout their educational careers (Turney, 1931).
Students’ perceptions of their academic identity are formed early in the tracking process. Students in low performance classes realize that there is a strong negative stigma attached to being in these tracks, which in turn negatively affects their self-perceptions and self-value (Oakes, 1985). Low performing students also feel these values are reinforced by teachers as well as their peers (Hallinan & Oakes, 1994). In writing about educational stratification, Collins wrote that “individuals may struggle with each other, [and] individual identity is derived primarily from membership in status group” (Collins, 1971, p 102). Whether that status group is low status or high status is irrelevant; students know where they belong, and they will meet the educational expectations for that track. Additionally, once a student has been placed in a low performance track, the subsequent lack of attainment of higher level skills effectively prevents upward movement, dooming the vast majority of students to more limited educational opportunities and choices (Oakes, 1985). In addition, disproportionate percentages of high performance students in the United States are Asian and Caucasian, while low performance students are predominantly Hispanic and African-American (Oakes, 1985; Gamoran & Berends, 1987; Delpit, 1995).

**Finnish ability grouping.** Implementation of the Basic School Law, which included abandoning the practice of labeling students as “talented” or “untalented” in elementary school, began in 1972 and occurred in stages from northern Finland to southern Finland,
ending in 1977 (Laukkanen, 2007). Ability-groups were retained in mathematics and foreign language classes at the lower secondary level as a compromise to receive support for these changes across political parties, but they were officially abolished for all subjects beginning in the 1985-86 school year after much political debate and study (Koululait, 1983, as cited in Laukkanen, 2007). Though formalized ability-grouping no longer exists in Finnish schools, there is still voluntary separation of students by area of interest at the upper secondary level (more or less equivalent to high school in the United States). For example, mathematics students interested in more intense study may enroll in what is termed the “long course,” and those less interested in mathematics may enroll in the shorter and less intense “short course” in approximately their junior year of high school; the essential difference between this and tracking is that these students self-select the course regardless of past performance and are given equal access to higher level mathematics.

Affordances and constraints of ability grouping. Proponents of tracking argue that arranging students by ability makes for more homogeneous classrooms with similar learning needs (Hallinan, 1994; Lubienski, 2000). In principle, these classes can thus focus on students’ specific learning goals, leading to increased knowledge and achievement (Duflo, Dupas, & Kremer, 2011). Opponents, however, note that ability grouping does not often work as well as it should in theory. Some studies have shown that ability-grouping does not have a positive learning effect for any ability group level (Slavin, 1990); others have shown
positive effects of mixed performance grouping that range from increased critical thinking
skills to positive mathematical identity (Oakes, 1985; Linchevski & Kutscher, 1998; Boaler,
2006) as well as long term job prospects and social mobility (Boaler, 2008).

**Teacher Beliefs**

The beliefs about the teaching and learning of mathematics that prospective teachers
bring to the classroom have a profound effect on student learning (Battista, 1994; Cooney,
Shealy, & Arvold, 1998; Handal, 2003; Stipek et al., 2001). In mathematics, the focus on
individual student differences potentially hinders learning (Prawat, Remillard, Putnam, &
Heaton, 1992). Teacher attention thus focuses on students’ general mathematical knowledge
relative to other students rather than on the understanding of particular concepts.

Dweck (2006) writes that the view one holds regarding the nature of ability is
important in the teaching and learning that occur in the classroom. Those who believe that
ability is innate and unchanging, and that success comes from this predetermined level of
ability, have a “fixed” mindset, whereas those who believe that success comes from hard
work, education, and perseverance, and that “ability” is a mutable quantity, have a “growth”
mindset. Although teachers may not know whether they have a fixed or growth mindset, their
views will affect their behavior. A teacher with a fixed mindset might believe that students
have a fixed amount of intelligence and ability, resulting in high-level or low-level students.
A teacher with a growth mindset, on the other hand, might believe that students have the ability to move between being high-performing and low-performing, depending on the students’ levels of effort. This is an important distinction in terms of what levels of understanding a student can attain.

This study draws on the importance of teacher beliefs in shaping instruction as well as the substantial role ability grouping can play in shaping students’ mathematical learning. The goal of this study is to understand the prospective teachers’ beliefs regarding same and mixed performance classrooms within cultural contexts. This study addresses two main questions: (1) How do American and Finnish prospective math teachers talk about the affordances and constraints of same and mixed performance group instruction? (2) What are the similarities and differences between American and Finnish perspectives on the educational value of ability grouping?

**Methods and Data Analysis**

In order to understand how Finnish and American prospective teachers talk about ability grouping, interviews were conducted with 13 Finnish prospective secondary mathematics teachers (noted in this paper as Interviewees 1 through 13) at a major Finnish university and with 7 American prospective secondary mathematics teachers (noted as Interviewees A through G) at two major American universities. The interview protocol was
designed as a semi-structured interview and conducted exclusively in English. All Finnish interviewees were sufficiently fluent in English to provide detailed and informative answers to questions. Some sample interview questions were “How do you think students learn in mixed performance groups compared to same performance groups?” and “Imagine that classes were separated – ‘high performance’ students in one class, and ‘low performance’ students in another. How do you think that would affect student learning?” The 13 question interview lasted on average about 30 minutes.

The analysis of interview data followed grounded theory techniques (Glaser & Strauss, 1967; Charmaz, 1995). The interview transcripts were first holistically open-coded in idea-unit segments, looking for emerging themes. For example, interviewees often talked about their teacher-training program in terms of effectiveness in preparing for the classroom, experiential learning in subjects outside mathematics, and the relative value of teacher training classes versus student teaching. Though interesting, these codes were ultimately not related to the research questions and were not further analyzed. A second round of focused coding identified all permutations of valued statements (i.e. statements that reflected positive or negative opinions) regarding mixed and same performance groups and concerning high performing students, low performing students, or students in general. For example, the statement “So, if you are the stronger student, and you get a chance to teach the weaker one, then you get better from it” (Interview 7) was coded as a positive statement regarding mixed
performance groups for high-performing students, while the statement, “Also, I think that it’s important for the weaker kids that they are not put into a different place and told from the very early age on that you are weak and you can’t do this” (Interview 6) was coded as a negative statement regarding same performance groups for low-performing students. This coding highlighted patterns in the way Finnish and American prospective teachers talked about ability grouping. Coding statements in this manner and then counting the occurrences of the codes allowed for a comparison between the Finnish and American prospective teachers. Table 1 provides totals of all such codes for both Finnish and American interviewees.

Table 1: Total of all valued statements (N = 282)

<table>
<thead>
<tr>
<th></th>
<th>General</th>
<th>Low Performers</th>
<th>High Performers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mixed-performance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Groups</strong></td>
<td>Positive: 49 (17.4%)</td>
<td>Positive: 21 (7.4%)</td>
<td>Positive: 9 (3.2%)</td>
</tr>
<tr>
<td></td>
<td>Negative: 24 (8.5%)</td>
<td>Negative: 3 (1.1%)</td>
<td>Negative: 28 (9.9%)</td>
</tr>
<tr>
<td><strong>Same-performance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Groups</strong></td>
<td>Positive: 21 (7.4%)</td>
<td>Positive: 8 (2.8%)</td>
<td>Positive: 42 (14.9%)</td>
</tr>
<tr>
<td></td>
<td>Negative: 22 (7.8%)</td>
<td>Negative: 47 (16.7%)</td>
<td>Negative: 8 (2.8%)</td>
</tr>
</tbody>
</table>

After coding was completed, the codes and descriptions were given to another researcher, who then re-coded the statements to test reliability. Inter-coded reliability for these 20 statements was 90%, which became 100% after further discussion and analysis.

**Results**

The analysis of codes concerning positive and negative valued statements about mixed performance and same performance groups with respect to high and low performing
students from the Finnish interviewees is shown below in Tables 2 and 3. Of the 203 valued statements made by Finnish prospective teachers, 97 related to mixed performance groups and 106 related to same performance groups. Valued statements that did not focus on a specific group of students were coded as general.

Table 2: Mixed performance group valued statements, Finnish (N = 97)

<table>
<thead>
<tr>
<th></th>
<th>General</th>
<th>Low Performers</th>
<th>High Performers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>30 (30.9%)</td>
<td>15 (15.5%)</td>
<td>3 (3.1%)</td>
</tr>
<tr>
<td>Negative</td>
<td>21 (21.6%)</td>
<td>2 (2.1%)</td>
<td>26 (26.8%)</td>
</tr>
</tbody>
</table>

Table 3: Same performance group valued statements, Finnish (N = 106)

<table>
<thead>
<tr>
<th></th>
<th>General</th>
<th>Low Performers</th>
<th>High Performers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>12 (11.3%)</td>
<td>3 (2.8%)</td>
<td>34 (32.1%)</td>
</tr>
<tr>
<td>Negative</td>
<td>12 (11.3%)</td>
<td>38 (35.8%)</td>
<td>7 (6.6%)</td>
</tr>
</tbody>
</table>

When talking about mixed performance groups, the Finnish prospective teachers tended to talk more about the system in general (52.5%) than about low performing students (17.6%) or high performing students (29.9%) in particular. When talking about the effect of mixed-performance groups on high-performing students, a disproportionate number of statements were negative. When talking about same performance groups, however, the prospective teachers only spoke about the system in general 22.6% of the time, with 38.6% of the statements concerning low performing students and 38.7% concerning high performing students. Statements concerning low- and high-performing students were highly
disproportionate – statements concerning same performance groups for low performing students were mostly negative, and statements concerning same performance groups for high performing students were mostly positive.

Of the 79 valued statements made by American prospective teachers, shown below in Tables 4 and 5, 37 related to mixed performance groups and 42 related to same performance groups.

### Table 4: Mixed performance group valued statements, American (N = 37)

<table>
<thead>
<tr>
<th></th>
<th>General</th>
<th>Low Performers</th>
<th>High Performers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>19 (51.4%)</td>
<td>6 (16.2%)</td>
<td>6 (16.2%)</td>
</tr>
<tr>
<td>Negative</td>
<td>3 (8.1%)</td>
<td>1 (2.7%)</td>
<td>2 (5.4%)</td>
</tr>
</tbody>
</table>

### Table 5: Same performance group valued statements, American (N = 42)

<table>
<thead>
<tr>
<th></th>
<th>General</th>
<th>Low Performers</th>
<th>High Performers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>9 (21.4%)</td>
<td>5 (11.9%)</td>
<td>8 (19.0%)</td>
</tr>
<tr>
<td>Negative</td>
<td>10 (23.8%)</td>
<td>9 (21.4%)</td>
<td>1 (2.4%)</td>
</tr>
</tbody>
</table>

While Finnish interviewees emphasized the negative impact of mixed performance groups on high achieving students, American interviewees mostly discussed the value of mixed performance groups in general (51.4%). American interviewees also talked about mixed performance groups positively – 83.8% of statements – as opposed to 49.5% for Finnish interviewees.
Discussion

Given differences in Finnish and American culture and educational background, it is not surprising that while the majority of Finnish statements on same performance groups were negative, the majority of American statements on same performance groups were positive. Interviewee 12 said of same performance groups, “I think parents think that their children have some kind of mark on their forehead that ‘yeah, now he’s a stupid [sic], and he’s the normal one, and he’s the brilliant one’.” This statement clearly reflects the Finnish desire to have an equitable society. In contrast, Interviewee E said of high performance students that “they have the free reign to work to solve more complicated problems as opposed to sitting there wanting to kill themselves because they're bored.” This statement embodies the common argument that homogenous groups enable the highest achievers to reach their full potential (Hallinan, 1994; Lubienski, 2000). Here, the distinction between Finnish and American cultures is made apparent.

However, the aggregate percentages of positive and negative statements regarding same performance groups for both American and Finnish interviewees are close to 50%. This might demonstrate the continuing controversial nature of tracking in both cultures. Both sets of interviewees emphasized the negatives aspects of same performance group for low performing students and the positive aspects for high performing students. The major
difference is in talk about low performance classes for low performing students; 38 out of 41 statements (92.7%) made by the Finns were critical, as compared to only 9 out of 14 (64.3%) by the Americans. This difference reflects the views of the Finnish interviewees that a low performance class would provide less content and learning, which contradicts the general Finnish belief in equality of opportunity for all, while the American interviewees believe that classes tailored toward individual ability might better meet the needs of low performing students.

Both Finnish and American prospective mathematics teachers’ views of separating students by perceived ability level make sense within a cultural framework. Looking first at the statements made by the Finnish prospective teachers, and given the longstanding Finnish societal/educational goal of equity, the strong negative view of removing low performing students from mixed performance classrooms to place them in segregated low performing classrooms seems very reasonable. Similarly, the fear of not sufficiently challenging high performing students is consistent with positive views of high performance classrooms, provided of course that such classrooms do not detract from the overall learning of the majority of students. The positive view of same performance classrooms might be explained by the Finnish concern about being competitive in science and mathematics at the highest levels (Kupiainen, Hautamäki, & Karjalainen, 2009). Thus the competing viewpoints of
societal equality and the desire to produce “geniuses” (Interviewee 7) result in an imbalance in how the Finnish prospective teachers talk about tracking.

For the American prospective teachers, the teacher training programs of both universities included courses detailing the benefits of mixed-ability grouping, which would naturally lead to many positive statements about mixed-ability grouping in general as well as for both high- and low-performing students. Both American teacher-training programs also have strong goals of social justice and the placement of teachers in schools with high needs. Thus, the understanding of the effects of ability group separation as stated by the prospective teachers is directly informed by such strong cultural values. Another possible explanation for the number of positive statements regarding mixed performance groups in general is that since American interviewees have less concrete experience working in or with mixed performance groups, it is harder for them to take positions regarding specific groups of students.

The idea that educational experience may have influenced interviewees’ perceptions of same and mixed performance groups can also be considered by adding a cultural lens to Lortie’s concept of “apprenticeship of observation” (1975). Lortie claimed that students spend about 13,000 hours in the classroom, which has led to the idea that “teachers teach the way they were taught” (Heaton & Miceleson, 2002, p.51). 12 of the 13 Finnish
interviewees were in secondary school after the change to mixed performance groups had taken place, and all of the American teachers had at least some experience in tracked classrooms. Even though the American programs did engage in discussion of mixed versus same performance classrooms, the interviewees talked about how many of the jobs available were in traditional, tracked schools. For example, Interviewee B said, “This entire program is guiding all of us into teaching the lowest common denominator of students … they say, well, you’re not going to get a job teaching AP classes. And as far as getting a job teaching calculus, that’s like the pot of gold at the end of the rainbow.” When talking about what kind of teaching job he would like, Interviewee A said, “Right now I’m trying to teach algebra and geometry, but I’m open to teaching algebra II and higher, like calculus. Whatever. AP courses would be nice (laughs).” Both of these statements show a marked preference for teaching high performing students in a tracked system. The Finnish prospective teachers, who did not learn about tracked classes as part of their teacher education program, had mixed views about whether they would want to teach mixed performance groups or same performance groups. Regardless, they talked about potentially organizing their classes to meet the needs of all learners. Interviewee 3’s statement reflects this overall view:

I don’t know much about if there’s only high performance and low performance … people are different. Some learn faster and some learn slower, and a couple of students have done all the tasks when someone is making his or her third task. But then you have to give lots of help to those who learn slower. You have to divide
yourself to all kinds of students … have more exercises for those who are really fast and give lots of help to those who are slow learning students.

As the United States undergoes shifts in thinking regarding the long-standing system of tracking, cultural views also frame understanding of the benefits and challenges that accompany these changes. Educational needs for the populace are not the same as they were even a half century ago, and focus on society as a whole rather than on students as performers at certain levels of skill requires difficult adjustment to current teaching practices and thinking. Even so, such challenges are with direct precedent in the Finnish reform:

My challenge was to develop a plan that guaranteed that this reform would ultimately be implemented in every Finnish community. There were lots of municipalities that were not eager to reform their system, which is why it was important to have a legal mandate. This was a very big reform, very big and complicated for teachers accustomed to the old system. They were accustomed to teaching school with selected children and were simply not ready for a school system in which very clever children and not so clever children were in the same classes. It took several years, in some schools until the older teachers retired, for these reforms to be accepted. (Jukka Sarjala, Ministry of Education 1970-1995, taken from OECD, 2011)

The current success and fame that Finland is experiencing comes as the result of a dramatic educational overhaul that is more than 40 years old. The creation of the comprehensive school system was neither easy nor universally accepted, but it was considered by the majority of policymakers as the best choice for the long-term benefit of the country (Kupiainen, Hautamäki, & Karjalainen, 2009; OECD 2011). In the United States, the prevailing theory is that tracked classrooms produce a division in which low performance classrooms meet the specific learning needs of low performing students while high
performance classrooms allow students to advance at a much more rapid pace according to their ability levels. Based on data such as that provided by PISA, this benefit does not actually occur in tracked classrooms in the United States. The process of raising the general level of low performing students while still meeting the needs of high performing students does, however, happen in non-tracked classrooms in Finland.

**Conclusion**

The similarities and differences in Finnish and American perspectives on tracking are both reflective of cultural backgrounds and important indicators of beliefs the interviewees will take into their classrooms. Early studies of teachers’ attitudes and dispositions regarding same performance groups show that teachers are generally supportive of separating students by ability (McDermott, 1976; Wilson & Schmidts, 1978). Research has also shown that American teacher attitudes favoring tracking may be the result of seeing student ability as fixed rather than flexible (Oakes, 1997; Dweck, 2006). Moreover, research into teacher attitudes and beliefs has shown that teachers expect more from high ability students and less from low ability students, which may foster the belief that tracking benefits these groups by setting them at a suitable academic pace (Hallman & Ireson, 2005). Statements from both groups of interviewees reflect this belief.
Statements made by both Finnish and American interviewees also show opposition to tracking for low performing students as well as support for mixed performance classrooms for all ability levels. Further research examining the beliefs of practicing teachers would help us understand whether these beliefs persist into the first years of teaching and throughout their careers. In addition, such research would also help us to understand how the ideas of what is fair and equitable for students is established through teacher training programs as opposed to how much is inherently cultural.

There is much that can be learned from international comparisons and studies (Darling-Hammond, 2009; Laukkanen, 2007). The different historical trajectories influencing ability grouping in the United States and Finland provides an excellent context for considering prospective teachers contrasting beliefs about how such grouping might influence student learning. The attitudes toward ability and performance that teachers bring to the classroom form a large part of how students progress and ultimately how well they do or do not succeed in mathematics (Dweck, 2006; Pajares, 1992). Examining these perspectives with a cultural lens will inform teacher training and future policy debates about tracking in both countries.
References


