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Teachers' perceptions of educational reform aimed at inclusion

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Abstract

The goal of this research was to enhance the understanding of implementing educational reforms aiming for more inclusive comprehensive schools in Finland as part of its national developmental projects. In the empirical study, carried out in 2010, a questionnaire was given to all compulsory education teachers in two towns and one rural municipality in Lapland. The response rate was 327, or 53% of all respondents. Analysis procedures were statistical: explorative factor analysis, GLM MANOVA, cross-tabulation, and chi-square tests. The results were as follows. Regarding attitudes towards an inclusive class, on average, positive attitudes occurred if a teacher had participated in the process of making Individual Learning Plans (ILP) or in in-service training. Regarding attitudes towards mainstream school, women, principals, and special education teachers had the most positive attitudes. Participating in making Individual Education Plans (IEP) also had a positive impact. Factors related to negative attitudes toward the mainstream school included male teachers, subject teachers, and those who had not received in-service training or had not planned any ILPs or IEPs. Implications for teacher training are discussed.

Keywords: Educational Reform; Compulsory Education; Inclusive Education; Teachers; Attitudes

Introduction

Finland progressively renewed its compulsory education in the 2000s. Based on policies created in the 2007 National Special education Strategy, the KELPO project (Developing the Quality of Basic Education) was launched in 2008. Hundreds of municipalities across Finland, among them the three municipalities explored in this study, joined in the collaboration by developing new supportive practices for teaching diverse students and by arranging comprehensive in-service teacher training. On 24th June 2010, the Finnish Basic Education Act (628/1998) was updated regarding educational support.

Instructions related to the new three-tiered support system for learning were detailed in the amendments and additions to the National Core Curriculum for Basic Education on 29.10.2010 (Finnish National Board of Education, 2010). The new curriculum stressed strengthening inclusive education by emphasising every child's right to attend a school located near his or her home. The concept of 'neighbourhood school' was introduced in the context of reform. The purpose is to offer students high-quality teaching, guidance and support. Inclusive school reform is a worldwide trend intended to create "a school for all" (e.g. Salamanca Statement 1996), and Finland is committed to international agreements designed to enhance educational equality.

Teachers' attitudes and beliefs are important determinants of the pedagogies implemented in schools. The competence required to teach heterogeneous classes develops gradually through initial and in-service training and professional development (Lambe & Bones, 2006; Avramidis & Norwich, 2002). Still, many teachers feel that they lack competency in teaching children with diverse needs (cf. Jahnukainen, 2015).

This research study took place in 2010 when the new norms and instructions were being launched. Thus, the inquiry mapped how teachers' educational backgrounds and professional experiences influenced their views of inclusive practice. The study was conducted in two Finnish Lappish municipalities and one rural municipality that participated in the KELPO national development project in Lapland. From an international perspective, Finland is an interesting example of educational policies because its educational system has been widely referenced on the basis of good PISA results (cf. Björn, Aro, Koponen, Fuchs & Fuchs, 2016). Finland is also known for the autonomy of its teachers. There is no bureaucratic monitoring or external testing to evaluate the quality of the teachers' work (Andere, 2014; Sahlberg, 2011.) Based on the distinctive features of Finland's educational system, the results of this study provide valuable knowledge for other scholars and administrators about the factors that influence teachers' attitudes when reforming education systems, so they can be more inclusive.

The Goal of Inclusive Education in Finnish Compulsory Education Reform

Since 1997, significant national development work in compulsory education has been achieved throughout Finland, striving towards providing more socially just compulsory education (Rinkinen & Lindberg, 2014) for all students. In fact, after the fundamental reform of compulsory education in the 1970s, the compulsory education policy in Finland has been developed on a logical continuum that can be assumed to meet the requirements of sustainable development (Levin & Fullan, 2008; Thuneberg, et al., 2013). In addition, this reform effort can be framed as evolutionary while creating a systematic chain of initiatives (cf. Sahlberg, 2011).

The strength of the Finnish development projects has been their commitment to work with teachers and administrators to create regional and national networks (Rinkinen & Lindberg, 2014). In contrast, many other countries have concentrated on developing policy rather than initiating processes of engagement that involve teachers and school communities (Harlen & Hayward, 2010). For example, Scotland succeeded in enhancing new models of learning assessment (Assessment is for Learning Programme, 2002) only after changing its strategy to focus on involving the relevant communities and avoiding simplistic models (Hayward, 2014). In Finland, giving greater responsibility to teachers and local school authorities has been possible because, since 1994, all teachers have been accustomed to modifying the core curriculum to meet local needs (Rokka, 2011). In addition, Finnish teachers have a master's level academic degree from a university, which makes it easier for them to take responsibility for their professional work.

The new framework for support of the learning implemented in the reform was originally based on Response to Intervention (RTI), which was used in many parts of United States (US) (Björn et al., 2016). The support consists of three tiers. General support is provided to every student and an individual learning plan (ILP) can be created for each. In intensified support, students receive more comprehensive support than they did before; moreover, multiprofessional pedagogical assessment and creating an ILP are obligatory. In ILP, the syllabus can be defined by the core contents of various school subjects. It could include pedagogical instructions, part-time special education or assistive devices for learning. Providing special support requires extensive multiprofessional assessment, an official administrative decision and an Individual Education Plan (IEP). However, in an IEP, the syllabus of various school subjects can be diminished under the level of core contents (Finnish National Board of Education, 2010, 2016).

Most Finnish municipalities participated in the KELPO development project in 2008–2012, receiving in-service training and support for developing locally relevant practices for teaching diverse students. The changes that were detailed in the 2010 reform were very substantial. When conceptualised using Resnick's (2010) model, the reform can be seen to consist of

three fundamental components. Firstly, concerning *human capital*, after the reform, all teachers were expected to differentiate their teaching. Furthermore, part-time special education had to be provided using a shared, team-teaching approach (Thuneberg et al., 2013). Secondly, the instructional *tools and routines* changed in such a way that the identification and intervention were oriented for the entire school year and for the students in the classroom context interacting with their peers and teachers, not in isolation (Thuneberg et al., 2013). However, there were no specific instructions about how to assess learning contexts and identify the needs of students (cf. Björn et al., 2016). Thirdly, *social capital* had a crucial meaning in the reform, departing from the traditional orientation of teachers working alone (Mikola, 2011). The reform obliged teachers to collaborate when documenting and making decisions regarding ILPs and IEPs (Thuneberg et al., 2013).

The assessment and evaluation of adopting the new special education strategies of the KELPO project were delegated to the University of Helsinki. According to the results, there were differences in how the municipalities were able to adopt the new concepts and practices. According to Thuneberg et al. (2014), 18% of the municipalities were using inclusive practices, 60% seemed to know what the principles of the reform were, but they had not yet used them and 22% had difficulties implementing the conceptual changes in practice.

Teachers' Attitudes Towards Integration and Inclusive Education

Research has identified that successfully implementing inclusive education largely depends on the teachers' attitudes (Braunsteiner & Mariano-Lapidus, 2017). Additionally, belief in one's own ability to be successful in inclusive settings has been found to be important in promoting positive attitudes toward inclusive education (Urton, Wilbert, & Hennemann, 2014). Still, many teachers are concerned about the lack of training for inclusion, insufficient resources (Loreman, Deppeler, & Harvey, 2010) and the lack of administrative and special education teacher support or other practical concerns related to implementing inclusive education (Burke & Sutherland, 2004; Hwang & Evans, 2011).

Research conducted in the 1980s and 1990s measured teachers' attitudes toward integrating special need students into mainstream classrooms. During that time, their attitudes were more negative than positive. The most positive attitudes toward inclusion have been held by principals, followed by special education teachers, class teachers and subject teachers (Moberg, 2003; Hastings & Oakford, 2003). Later studies found that teachers' attitudes toward inclusion have become more positive as inclusive school settings have become more common. However, two extremes exist: the number of very negative and very positive attitudes is increasing (Moberg, 2003; Avramidis & Norwich, 2002; Thomas & Loxley, 2001).

In their review of 26 studies, de Boer, Pijl, and Minnaert (2011) concluded that the research results of teachers' attitudes toward inclusive education present a somewhat confusing

picture because of the many factors that affect them. Special pedagogical knowledge seems to have a positive impact on teachers' attitudes towards inclusion (Avramidis Bayliss, & Burden, 2000). Malinen (2013) found that positive self-efficacy increased teachers' positive attitudes towards inclusive education. Additionally, in earlier studies, researchers found that when teachers have learned new skills and developed their professional competencies to meet the requirements of inclusive education, they begin to adopt more positive attitudes (Villa, Thousand, Meyers, & Nevin, 1996; Avramidis et al., 2000).

The Goal of the Research and the Research Questions

This research study was part of KELPO, the national development project that aimed to develop and implement inclusive education in Finland. This study was conducted in the Finnish regional developmental networks located in Lapland, which is the northernmost province of Finland. The National Board of Education funded the networks. The goal of the KELPO project was to enhance Finnish school children's support in so-called neighbourhood schools. The purpose of this study was to identify the background factors that explain teachers' attitudes towards inclusive education.

This study addressed three research questions:

1. Is there a difference in attitudes to inclusion between teachers of different gender and professional title?
2. Is there a difference among teachers in their level of experience teaching students with special needs or in creating ILPs or IEPs for students with respect to their attitudes about inclusion?
3. Is there a difference among teachers regarding the level of in-service training for teaching inclusive classrooms with respect to their attitudes about inclusion?

Research Data and Methods

The data were collected in 2010 via a questionnaire addressed to the teaching personnel included in the study. When using multivariate statistical methods, the statistical assumption is that the sample is randomly drawn and representative of the population being studied (see Nimon, 2012; Wilkinson, 1999). The questionnaire was distributed to every teacher and head teacher in all of the comprehensive schools that were participating in the national development project, KELPO, in Finnish Lapland, i.e. two municipalities, and one rural municipality. Municipality A has about 60000 citizens and municipality B has about 23000 citizens. Rural municipality C has about 4500 inhabitants. The response rate was 53%, with 327 teachers answering the questionnaire. The highest response rate was in municipality B, with 79% (n = 110/140), then rural municipality C, with 55% (n = 29/53), and 44% (n = 186/420) in city A. In Finland, comprehensive schools encompass nine years and serve all children between the ages of 7 and 16. Some schools form a single structure comprehensive

school (grades 1–9) while others are still either elementary schools (grades 1–6) or lower secondary schools (grades 7–9). In grades 7–9, teaching is organised by subject teachers.

The questionnaire used in this research was already tested in previous studies. Moberg (2003) and Moberg and Savolainen (2003) used it to explore the attitudes to inclusion among Finnish and Zambian teachers. As in their studies, the items in the questionnaire are related to attitudes towards inclusion and segregation. The same topics are expressed both from a positive and negative angle. The items contain the perspectives of students, personnel and implementation of teaching. The items measure the teachers' attitudes towards inclusive or segregated school arrangements, persons with disabilities, and the respondents' concerns about including students with disabilities and/or special needs in their own class. Some of the items related to the new concepts and norms changed by the Finnish reform, were updated. The questionnaire is presented in Appendix 2.

The first section gathered demographic information of the sample as listed in Table 1.

Table 1: *Demographic information of the Study Sample*

Gender	Women	Men			
	75%	25%			
Age	Under 25 years	26–30	31–40	41–50	over 50
	2.2%	10.3%	23.1%	31.4%	33%
Teacher's position	Head teacher	Special ed. teacher	Subject teacher	Class teacher	
	4.8%	15.9%	35.2%	44.1%	
The grade level the teacher was teaching	Grades 1–2	3–4	5–6	7–9	Several
	21.2%	14.5%	13.3%	38.4%	12.5%

The second section of the questionnaire (Table 2) included items that identified in what kinds of actions supporting pupils' learning arrangements the teachers had participated. Sixty percent of the teachers had received in-service training (i.e. KELPO-training) and 90 % had taught students with special needs (SEN). Only 50% of the teachers had the primary responsibility of creating IEPs, and 75% had participated in the process. In the new tier of support, which is intensified support, creating an individual learning plan (ILP) became obligatory. Only 45% of the respondents had the primary responsibility of creating ILPs, and 65% had participated in the process.

Table 2: *Research Participants' involvement in actions supporting pupils' learning arrangements*

Had taught SEN students	90%	
	Main responsibility	Participated the process
Making IEP	50%	75%
Making ILP	45%	65%
Had participated in KELPO in-service training	60%	

The second section of the questionnaire contained 42 items, divided into four themes: segregated and inclusive teaching arrangements; general support of students' and students with SEN' school performance and self-image; propositions about teaching personnel's competencies and needs for support; and prospects of school following the reforms. The items were measured using a 5-point Likert scale, ranging from 'strongly disagree' to 'strongly agree', with a neutral mid-point.

Data Analysis

To establish the Likert scale's structural validity and reliability, exploratory factor analysis (EFA) was applied. The use of EFA was justified because it reduces information and makes the analysis less complex. EFA reveals the latent structure of the variables, and it simultaneously reduces the Type 1 error rate by handling the composite variables instead of single variables (Song, Lin, Ward, & Fine, 2013). The relationships between the composite variables and the background variables were analysed using the general linear model (GLM) univariate method (Tabachnick & Fidell, 2007), which combines the analysis of variance (ANOVA) and regression analysis (Chartier & Faulkner, 2008). The analysis was complemented by using the cross-tabulation method and chi-square tests to identify the potential non-linear connections and to reveal the under- or over-representation of the background variables in the cells of the cross-tabulation (Sharpe, 2015). Reliability was assessed via Cronbach's alpha (>.60 satisfactory, >.70 good). In this study, reliability was found to be either satisfactory or good.

Results

Formation of the Composite Variables

The formation of the composite variables began with EFA. Principal axis factoring and the varimax rotation method were used. The three factors solution was based on Cattell's scree and the criterion of eigenvalues over one. The three factors explained 45% of the variance. Composite variables were calculated using the items for which the factor-loadings were >.39 (see Table 3 for the loadings). They were labelled based on the contents, emphasising the highest loaded items.

The first composite variable was the *neighbourhood school model*, which reflects the principle that all children should be taught in the school located nearest to their home with their peers, referring to actions that should take place in the mainstream school. It included 11 single variables directly related to the questionnaire statements; for example: "*Making learning plans will benefit teachers' work*" and "*A good solution for teaching diverse learners is co-teaching*". The reliability of the composite variable was good (Cronbach's alpha =.87).

The second factor was the *functioning inclusive class*. It shows the teachers' attitudes toward inclusive classes. It consisted of eight variables that support inclusion; for example: "*The placement in general education improves the self-esteem*", "*reduces negative stigma*". Teachers also considered whether the inclusive system decreased the quality of teaching and harmed other students' learning with items such as "*The placement of a student with special education needs in general education group worsens the level of teaching for other students*". The reliability of this composite variable was good (Cronbach's alpha =.85).

The third factor was the *teachers' need for support*, which describes the teachers' experienced need for support in heterogeneous classes. It included two single variables; for example: "*Teachers in general education need support from special education teachers--*". The reliability of the composite variable was satisfactory, although it was formed by only two items (Cronbach's alpha =.65). The loadings of different items into their respective factors are shown in Table 3.

Table 3: *The Factor Model and Loadings of the Three Factors (Rotated Factor Matrix)*

FACTOR 1 THE NEIGHBOURHOOD SCHOOL MODEL	
Creating learning plans will benefit teachers' work.	,798
Creating IEP:s will benefit teachers' work.	,755
It is good that IEP:s act as pedagogical documents.	,746
The ideal situation in the future would be that the teaching arrangements would be flexible and would consist of multiple grouping (team and co-teaching with group divisions, tuition and part-time special education).	,586
Team teaching is a good solution for teaching diverse learners.	,531
Designing and implementing teaching strategies is more meaningful in cooperation with other teachers, specialists and assistants than when attempting to do so alone.	,514
It is good that teaching is reformed by staging the forms of support into general, intensified support and, only finally, into special support.	,505
In the future, the teachers' profession must be transformed in such a way as to enable versatile support for students (e.g. working time arrangements, teaching duties, etc.)	,491
The entire school community must accept different learners.	,488
In the future, the focus of all pupils' education must be on early support and preventive actions.	,482
It is good that, from now on, the special education decisions are time-limited.	,466
FACTOR 2 FUNCTIONING INCLUSIVE CLASS	
The placement in general education improves the self-esteem of a student with special education needs.	,724
Providing special needs pupils with the opportunity to study in general education groups reduces their negative stigma.	,710
I support inclusive teaching arrangements.	,645
The placement in general education decreases the school success of a student with special education needs.	-,624
The placement in a general education group improves the behavior of a student with special education needs.	,620
The behavior of an abusive student will improve if he or she attends school with well-behaved students.	,574
Pupils in need of special support should fall under the responsibility of special teachers.	-,563
The placement of a student with special education needs in a general education group decreases the level of teaching for other students.	-,461
FACTOR 3 THE NEED FOR SUPPORT	
Teachers in general education require support from special teachers to be able to meet the demands of special needs pupils when teaching them in a general classroom.	,704
Teachers in general education need school assistants' support to meet the needs of special needs pupils in the classroom.	,579
<i>Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 5 iterations.</i>	

The Background Variables

Forming the composite variables was the preparatory work for answering the three research questions. When the individual questionnaire items were compressed into *neighbourhood school model*, *functioning inclusive class* and *teachers' need for support*, it was possible to compare how the demographics and information about the teacher's involvement in actions supporting pupils' learning arrangements differed for each study group. The relationships of the three composite variables with the above-mentioned background variables were analysed

based on the GLM method, and then complementary results were obtained using cross-tabulation and chi-square tests.

General Linear Modelling

The relationships between the variables were analysed using GLM models. Each successive composite variable was chosen for the dependent variable; the background variables included the explanatory factors (gender, age, teacher position, the grade-level at which the teacher teaches, municipality, in-service training (KELPO) and variables related to the pedagogical documents ILP and IEP. The criterion for the final model was the significance of the effects. Additionally, non-significant factors were omitted. The pair-wise differences between the groups were analysed using Bonferroni post-hoc tests.

For the neighbourhood school model (Appendix 1, Table 4), the most important factor was gender (male, $M^1 = 3.82$, $SE = .08$; female, $M = 4.22$, $SE = .06$); it explained 9% of the variance. The grade level at which the teacher taught explained 5% of the neighbourhood school model, and the pair-wise comparison showed that there was a significant difference between grades 3–4 ($M = 4.16$, $SE = .10$) and grades 7–9 ($M = 3.82$, $SE = .07$).

The variable, *municipality*, was a weak but a significant explainer (3%); still, it was a little stronger than the KELPO in-service training activity variable (2%). Pair-wise comparisons showed that the neighbourhood school model mean was significantly lower in municipality A than in municipality B (in municipality A, $M = 3.90$, $SE = .05$, and in municipality B, $M = 4.13$, $SE = .08$, $p < .05$). Teachers who had participated in the KELPO in-service training were more positive toward the neighbourhood school model than those who had not (KELPO-participants, $M = 4.11$, $SE = .07$ and non-participants, $M = 3.93$, $SE = .06$, $p < .05$).

In the *functioning inclusive class* composite variable, municipality explained 7% of the variance and grade-level and teacher position explained 8% and 7% of the variance, respectively (Appendix 1, Table 5). Teachers' attitudes in rural municipality C ($M = 3.69$, $SE = .16$) were more positive and differed significantly from those in municipality A ($M = 3.03$, $SE = .09$) and municipality B ($M = 3.07$, $SE = .12$). Moreover, teachers at the single structure comprehensive school ($M = 3.40$, $SE = .16$) differed from the teachers at the 7–9 grade level ($M = 2.86$, $SE = .13$). The teachers' positions made a difference, and the special education teachers ($M = 3.6$, $SE = .16$) were more positive than the subject teachers ($M = 3.01$, $SE = .15$).

The *teachers' need for support* composite variable was significantly explained by grade level and gender, and both explained 4% of the variance (appendix 1, Table 6). The teachers at the 3–4 grade levels ($M = 4.45$, $SE = .13$) considered the need for support to be significantly

¹ M (Mean), SE (Standard error)

more important than the teachers at the 7–9 grade levels ($M = 3.98$, $SE = .09$). Females experienced a higher need for support ($M = 4.39$, $SE = .08$) than males ($M = 4.04$, $SE = .11$). Municipality explained 3% of the variance, but the pair-wise comparisons did not show more differentiated and exact results between the municipalities (municipality A, $M = 4.41$, $SE = .07$; municipality B, $M = 4.04$, $SE = .16$; municipality C, $M = 4.19$, $SE = .10$).

Cross-tabulation

For each composite variable, the attitudes of the research participants were ranked as: 1 (the lowest, most negative attitudes), 2 (average attitudes) and 3 (the highest, most positive attitudes). The category groups were cross-tabulated with the background variables. The theoretical assumption of cross-tabulation is that each group distributes equally into the cross-tabulated table. Deviations of this rule are interesting because they indicate unexpected under- or over-representation of some of the background variables in the three categories. The significance of the deviation is reflected in the results of the chi-square test and its p-value. However, the adjusted residuals (\geq absolute value 2) identify in which cell the under- or over-representation occurs (see Sharpe, 2015).

By applying cross-tabulation and chi-square analysis, we identified which of the teachers had the most positive, neutral or negative attitudes toward the measured variables. Additionally, we could identify groups that experienced the most, average and least need for support. In this paper, we focus on the over-representation of the background variables in the most negative and most positive categories. Under-representation is shown only in selected cases. Table 7, Table 8 and Table 9 show the groups that had significantly unexpected over-representation in each category. The adjusted residuals from 2 to 2.9 are marked by +, from 3 to 3.9 by ++ and residuals 4 or over by +++.

Attitudes toward the Neighbourhood School Model

The most positive attitudes toward the neighbourhood school model were among females, principals, special education teachers and teachers from municipality B. It was interesting that the KELPO in-service training divided the participants so that there was no average group. It is interesting to note that exceptionally few of the 1–2 grade teachers held the most negative attitudes.

Table 7: Attitudes toward the Neighbourhood School Model

In the most POSITIVE category toward the neighbourhood school model (over-represented groups)	Adjusted residual	Chi sq.	df	p
Females	++	26.86	2	<.001
School principals	+	26.25	6	<.001
Special education teachers	+	26.25	6	<.001
Main responsibility in making Individual education plan(IEP)	+	9.46	2	<.01
KELPO in-service training participants	+	10.31	2	<.01
Participants from municipality B	+	10.48	4	<.05
Main responsibility in making Individual learning plan (ILP)	+	6.23	2	<.05
In the most NEGATIVE category toward the neighbourhood school model (over-represented groups)				
Males	+++	28.86	2	<.001
Subject teachers	++	26.25	6	<.001
Participants who have not yet implemented KELPO practices	++	10.64	2	<.01
Participants who did not participate in KELPO in-service training	+	10.31	2	<.01
Participants who have not participated in Individual education plan (IEP) creation	+	9.46	2	<.01
7th – 9th grade teachers	+	16.96	8	<.05
Participants from municipality A	+	10.48	4	<.05

Adjusted residuals were coded as: 2-2.9 +, 3-3.9 ++ and 4- +++

Attitudes toward the Functioning Inclusive Class

It is important to note that many subject teachers and teachers from the 7–9 grades were represented in the most negative attitude category. The groups with the most positive attitudes towards functioning inclusive classes were special education teachers and principals. Fewer 1–2 grade teachers and teachers from the single structure comprehensive school were seen in the negative category than was expected. The KELPO in-service training also had a strong positive effect on attitudes. Having a student with SEN in class had no significant effect on attitudes. However, teachers who had created either ILPs or IEPs, by themselves, or who had participated in making them, had a positive attitude about this variable. Of the municipalities, the attitudes of the participants from rural municipality C were the most positive. Gender had no significant impact.

Table 8: Attitudes toward Functioning Inclusive Class

In the most POSITIVE category toward functioning inclusive class (over-represented groups)	Adjusted residuals	Chi sq.	df	p
Special education teachers	+++	43.96	6	<.001
Main responsibility in making Individual education plan (IEP)	+++	29.75	2	<.001
KELPO in-service training participants	+++	19.28	2	<.001
Participants already implementing KELPO practices	++	15.97	2	<.001
Main responsibility in making individual learning plans (ILP)	++	14.68	2	<.01
Individual education plan (IEP) creation participants	++	10.62	2	<.01
School principals	+	43.96	6	<.001
Participants from municipality C	+	13.02	4	<.05
In the most NEGATIVE category toward functionality of inclusive class (over-represented groups)				
7th – 9th grade teachers	+++	27.76	8	<.01
Participants who have not yet implemented KELPO practices	++	15.97	2	<.001
Subject teachers	++	43.96	6	<.001
Those who have not participated in Individual education plan (IEP) creation	+	29.75	2	<.001
Those who have not participated in Individual learning plan (ILP) creation	+	14.68	2	<.01
Participants from municipality A	+	13.02	4	<.05

Adjusted residuals were coded as 2-2.9 +, 3-3.9 ++ and 4- +++

Attitudes toward Teachers' Need for Support

Females and class teachers were over-represented in the group that wanted support from special education teachers and school assistants in heterogeneous classes. There were also more special education teachers, males, participants who had already implemented KELPO practices and 7–9 grade teachers than expected. The participants from municipalities B and C indicated that they experienced the least need for support.

Table 9: *Teachers' Need for Support*

In the most POSITIVE category toward teachers' need for support over-represented groups	Adjusted residuals	Chi sq.	df	p
Females	++	12.60	2	<.01
Class teachers	+	17.77	6	<.01
In the most NEGATIVE category toward teachers' need for support over-represented groups				
Participants from municipality B	++	20.01	4	<.001
Special education teachers	++	17.77	6	<.01
Participants from municipality C	+	20.01	4	<.001
Males	+	12.60	2	<.01
Participants already implementing KELPO practices	+	6.19	2	<.05
7th to 9th grade teachers	+	15.42	8	=.05 (!)

Adjusted residuals were coded as 2-2.9 +, 3-3.9 ++ and 4- +++

Discussion and Conclusion

Through the first research question, we examined if there are differences among teachers regarding gender and professional title with respect to their attitudes about inclusion. The results of this study show that women had more positive attitudes towards inclusive education than men. This finding contradicts the results reported in previous research; Avramidis et al. (2000) did not find the same kind of differences between genders. However, Moberg and Savolainen's (2003) results were similar to the results found in our study.

Here, as in previous research (cf. Saloviita, 2017), the subject teachers had the most negative attitudes towards inclusive education. It could be possible that their education does not provide them with sufficient pedagogical competencies, or their negative attitudes might be due to the system of teaching separate subjects. This might strengthen the subject teachers' wishes to maintain separate special education classrooms. When implementing inclusive education, this causes problems because assuring diverse students' participation in schools requires collaborative planning and teaching (Lakkala, Uusiautti & Määttä, 2016). The special education teachers had the most positive attitudes. This result might be due to their career choice; they might already have positive attitudes towards diverse learners (cf. Hastings & Oakford, 2003).

With the second research question, we investigated whether there are differences among teachers in their experience with teaching students with SEN or in creating ILPs or IEPs with respect to their attitudes about inclusion. Based on our research findings, it seems that merely having a student with SEN in the class does not assure that a teacher will have a

positive attitude about inclusion. In fact, Ohna (2005) noted that placing children in the same group does not guarantee that all students will be equally able to participate. In the present study, if a teacher had participated in creating ILPs or IEPs, their attitudes toward inclusive education were more positive. Moreover, the teachers in municipality B had more positive attitudes than those in municipality A. This finding is interesting because, in municipality B, profound inclusive education reform had already begun in the 1990s, whereas in municipality A, the reform started years later. Likewise, the positive attitudes in rural municipality C could arise from the fact that the teachers had developed competencies for teaching diverse learners because there was a lack of segregated special services in small local schools. These results are supported by the findings from previous studies, which provided evidence that the experience of teaching in inclusive settings makes it more likely that the teachers' attitudes will be positive (Lingard & Mills, 2007; Avramidis & Norwich, 2002).

The third research question provided information about the differences among teachers regarding the level of in-service training for teaching inclusive classrooms with respect to their attitudes about inclusion. Our results show that inclusive in-service training has a positive impact on teachers' attitudes. In-service training as well as orientation to and planning of inclusive teaching arrangements provide teachers with a sense of competence to successfully teach diverse learners, thus strengthening their self-efficacy in inclusive education (cf. Malinen, 2013).

At the time this article was written, the Finnish three-tiered support system had already been implemented for seven years. Björn et al. (2016) indicated that the Finnish support system primarily has an administrative structure. It does not include clear definitions regarding the intensity, duration and content of support. The lack of precise guidelines leaves room for local consideration and interpretation of the norms. Along with the educational reform in 2010, Finnish teachers have needed to implement new kinds of pedagogies and learner-centred approaches (cf. Thuneberg et al., 2014). In this process, both initial and in-service training for teachers play a foundational role. Moreover, the issue of access to resources is important in the Finnish educational context. In Andere's (2014) research, the interviewees noted that, in the near past, the class sizes have increased, and school units have become larger. Between 2007 and 2016, the number of Finnish comprehensive schools decreased by 24%, and the units have grown larger (Official Statistics Finland, 2017).

The present research study contributes to the knowledge of the aspects effecting teachers' attitudes about reforming education. Overall, it seems that the national KELPO development process 2008–2012 in Finland has succeeded in enhancing its goals; for example, when the in-service training and experiences of creating ILPs and IEPs changed the teachers' attitudes to be more favourable towards inclusion. For further research, it would be very interesting to re-examine the same municipalities. Doing so would provide information on the direction in

310 Education in the North, **25**(1-2) (2018), <http://www.abdn.ac.uk/eitn>

which the teachers' attitudes are heading. The information could also be framed with other relevant data, e.g. students' experiences.

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APPENDIX 1 The explanatory variables of composite variables

Table 4 *The neighbourhood school model*

	df	F	Sig.	Partial Eta Sq
Amended model	8	6.70	.000	.19
Intercept	1	5253.05	.000	.96
classes	4	3.04	.018	.05
in-service training	1	5.10	.025	.02
municipality	2	3.41	.035	.03
gender	1	21.54	.000	.09
Total	236			

Adj. Rsq=.16

Table 5 *The functioning inclusive classroom*

	df	F	Sig.	Partial Eta Sq
Amended model	9	7.83	.000	.23
Intercept	1	1147.62	.000	.83
classes	4	5.05	.001	.08
municipality	2	8.93	.000	.07
profession	3	5.63	.001	.07
Total	246			

Adj. Rsq=.20

Table 6 *The teacher's support*

	df	F	Sig.	Partial Eta Sq
Amended model	7	3.97	.000	.12
Intercept	1	3390.96	.000	.93
classes	4	2.71	.031	.04
municipality	2	3.53	.031	.03
gender	1	9.33	.003	.04
Total	236			

Adj. Rsq=.8

APPENDIX 2

BACKGROUND INFORMATION:

Gender: female__male __Age: under 25 __ 26–30 __ 31–40 __ 41–50 __ over 50 __

Profession: Head teacher __ special education teacher __ subject teacher __
class teacher __

In my class there are/have been students with special needs: Yes __ No __

I teach in grades: 1–2 __ 3–4 __ 5–6 __ 7–9 __

Support arrangements for students	yes	no
I have participated in creating an individual learning plan (ILP) for a student.		
I have created an ILP for a student.		
I have participated in creating an individual education plan (IEP) for a student		
I have created an IEP for a student.		
I have received in-service training for teaching students with diverse needs (KELPO project).		
I am trying to implement the goals of the KELPO project.		

Instructions:

The following pages contain statements about teaching diverse students. There are no right or wrong answers for those statements; your opinion or attitude towards the matter is sought. In this research study, the phrase, “a student with special needs”, means a student who has an official administrative decision for special education and who has an Individual Educational Plan (IEP).

Express your point of view by marking (x) in the column that most closely reflects your opinion.

1 = I totally disagree

2 = I slightly disagree

3 = I don't know

4 = I slightly agree

5 = I totally agree

TEACHING ARRANGEMENTS	1	2	3	4	5
1. In our municipality there should be a separate special school for students with special needs.					
2. For some students, their special needs require the possibility of studying both in a general education group and in a small special education group.					
3. General education can offer high quality teaching to meet all students' needs if the support and services are provided in every day school life.					
4. Organising teaching for students with special needs requires collaboration in a school.					
5. Support systems helping to teach students with special needs in general education should be developed.					
6. Flexible school paths for students with special needs should be built.					
7. A small special education group inside the mainstream school serves flexibly and addresses the needs of students who need part-time special education.					
8. The arrangements for special education succeed when they are planned in collaboration with local schools.					
9. Every school should have its own special education groups.					
10. For parents, special education provided in a neighbourhood school is a better school solution than a special school placement.					
11. In our municipality, there should be special education groups, which are specialised to different problems.					
12. The administrative policies concerning special needs support are clear.					
STUDENTS	1	2	3	4	5
13. The placement in general education improves the self-esteem of a student with special education needs.					
14. The placement in a small special education group inside the mainstream school improves the self-esteem of a student with special education needs.					
15. The placement in general education decreases the school success of a student with special education needs.					
16. The placement of a student with special education needs in a general education group decreases the level of teaching for other students.					
17. The placement in a general education group improves the behaviour					

of a student with special education needs.					
18. The behaviour of an abusive student will improve if he or she attends school with well-behaved students.					
19. Providing special needs pupils with the opportunity to study in general education groups reduces their negative stigma.					
20. Pupils with special needs are generally satisfied that they can attend their own neighbourhood school.					
21. Other pupils bully and/or discriminate against special needs pupils in general education classes.					
TEACHING STAFF	1	2	3	4	5
22. Only teachers with a special needs education are able to effectively teach pupils with special needs.					
23. Pupils in need of special support should fall under the responsibility of special teachers.					
24. Teacher training provides good skills for encountering and teaching pupils with special needs.					
25. Teachers can be prepared to face students with special needs in general education through long-term in-service training.					
26. Teachers in general education require support from special teachers to be able to meet the demands of special needs pupils when teaching them in a general classroom.					
27. Teachers in general education need assistants' support to meet the needs of special needs pupils in their classroom.					
28. The entire school community must accept different learners.					
29. Team teaching is a good solution for teaching diverse learners.					
30. Creating learning plans will benefit teachers' work.					
31. Crating IEPs will benefit teachers' work.					
32. The main responsibility for all pupils in a teaching group belongs to a class teacher or a subject teacher.					
33. The teacher receives sufficient support from the student care staff in their work.					
34. Designing and implementing teaching strategies is more meaningful in cooperation with other teachers, specialists and assistants than when attempting to do so alone.					
FUTURE PROSPECTS	1	2	3	4	5
35. It is good that teaching is reformed by staging the forms of support into general, intensified support and, only finally, into special support.					
36. In the future, the ideal situation would be that the teaching arrangements would be flexible and would consist of multiple					

grouping (team and co-teaching with group divisions, tuition and part-time special education).					
37. In the future, the focus of all pupils' education must be on early support and preventive actions.					
38. It is good that IEPs act as pedagogical documents.					
39. Teachers in general education have sufficient skills to make pedagogical statements about their own pupils. (A document required before IEP.)					
40. It is good that, from now on, the special education decisions are time-limited.					
41. In the future, the teachers' profession must be transformed in such a way as to enable versatile support for students (e.g. working time arrangements, teaching duties, etc.)					
42. I support inclusive teaching arrangements.					