Attitudes towards inclusion by Slovenian teachers in the context of findings from other countries

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Abstract
The inclusion of children with special needs into the mainstream regular elementary school classes brings a professional challenge to teachers. A review of articles on teachers' attitudes towards inclusion published during last three decades was conducted. The review of research findings indicates that effective implementation of inclusion depends on the teacher's attitude to inclusion, which is found to be linked to the teacher's gender, years of work experience in teaching children with special needs, qualification of teachers, and the type of special need. A survey was conducted in 2013 on a representative sample of Slovenian elementary school teachers who teach in 7th, 8th or 9th class and have in their class at least one student with special needs. The findings indicate that teachers have a neutral attitude to inclusion. Teachers believe that they are insufficiently qualifie in teaching children with special needs, and that they need more training in this particular area. They are most in favor of inclusion of children with deficiencies in certain areas of learning, children with chronic disease, and children with speech and language disorders. They disfavor the inclusion of children with mental development disorders. They hold a neutral attitude to the use of ICT in inclusive education, and that the use of ICT contributes more to a child's cognitive, than social development. They believed that they do not have sufficient competences in ICT supported learning and assistive technologies. The findings of a survey of Slovenian teachers have shown neither a link between a teacher's attitude to inclusion and the teacher's gender, years of work experience, experience in teaching children with special needs, nor the teacher's opinion of his/her own teaching competences for inclusion. The findings are discussed in light of related studies in other countries.
Keywords: elementary education, inclusive education, ICT supported learning, special education needs, teachers' attitude.

Отношение словенских учителей к инклюзивному образованию в сравнении с результатами исследований других стран

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Аннотация
Включение детей с особенностями развития в пространство начальных классов общеобразовательных школ бросает вызов учителям. Обзор опубликованных в течение последних тридцати лет научных статей на тему отношения учителей к инклюзии показал, что эффективность реализации инклюзии во многом зависит от отношения к ней учителей. Кроме того, в ходе обзора литературы было обнаружено, что отношение учителей к инклюзии связно с их полом, профессиональным стажем в области специального образования, с их квалификацией и с разновидностью конкретно взятых особенностей развития. В рамках данного исследования был проведен опрос в 2013 году, в котором приняли участие учителя младших классов словенских школ (репрезентативная выборка), в каждом классе которых был хотя бы один ученик с особенностями в развитии. Результаты опроса показывают нейтральное отношение учителей к инклюзии. Учителя считают, что они недостаточно квалифицированы, чтобы учить детей с особенностями в развитии, что в связи с этим им хотелось бы пройти соответствующие курсы повышения квалификации. Они в особенности заинтересованы и положительно настроены по отношению к инклюзии детей со специфическими нарушениями познавательной деятельности, детей с хроническими заболеваниями и детей с нарушениями речи. При этом учителя наименее положительно настроены по отношению к инклюзии детей с задержками психического развития. Учителя нейтрально относятся к использованию ИКТ в специальном образовании, а также считают, что использование ИКТ скорее способствует когнитивному развитию детей, нежели их социальному развитию. Вместе с этим учителя не считают себя достаточно компетентными, чтобы эффективно работать с ИКТ и специальными вспомогательными технологиями. Полученные результаты не выявили связи между отношением учителей к инклюзии и их полом, профессиональным стажем, опытом работы с детьми с задержками в развитии, а также не показали, что мнение о собственной компетентности сказывается на отношении. Полученные результаты рассматриваются в соотношении со схожими исследованиями, проведенными в других странах.
Ключевые слова: начальное образование, инклюзивное образование, ИКТ в обучении, особенности в развитии, отношение учителей.

Introduction

The inclusive paradigm that is sought by contemporary educational system is based on the assumption that all the children belong to the same school despite their differing needs (Opara, 2009). The contemporary concept of upbringing and education of children in an inclusive environment requires the teacher to enable all the children to receive optimum development irrespective of the individual's capacities, and to provide for the appropriate conditions and teaching methods (Istenič Starčič, 2010). The teacher's attitude to children with special needs and to his/her own responsibility of teaching children with special needs have a major impact on the accomplishments of those children (Avramidis, Bayliss and Burden, 2000; Jordan, Schwartz and McGhie-Richmond, 2009), and therefore, it is imperative to engender in teachers a positive attitude to inclusion (Alghazo and Naggar Gaad, 2004). Based on an analysis of the results of 26 research studies, De Boer, Pijl and Minnaert (2011) find that teachers have a negative or neutral attitude to inclusion, and that only few research studies demonstrate the teacher's positive attitude to inclusion.

More recently, authors in several countries have dedicated their research activities to attitudes towards inclusion. Ojok and Wormnæs (2013) have found in a study that comprised 125 teachers, that in Uganda teachers had a more positive than negative attitude to inclusion of children with intellectual disabilities. Galović, Brojčin and Glumbić (2014) studied 322 teachers from the Serbian province of Vojvodina and found that they showed a neutral attitude to inclusion. In addition, the authors (ibid.) find that teachers with prior positive experiences of working in an inclusive environment show a more positive attitude than teachers with prior negative experiences in inclusive teaching. Memisevic and Hodzic (2011) conducted a research study in Bosnia and Herzegovina, comprising 194 elementary school teachers from eight schools. They found that 50% of teachers supported inclusion. Khochen and Radford (2012) researched the attitudes of teachers and head teachers towards people with a disability in mainstream primary schools in

Lebanon. The study comprised 40 teachers and showed their positive attitude to inclusion, though they expressed scruples as to inclusion of students with social, emotional and behavioral difficulties (ibid.). Batsiou, Bebetsos, Panteli and Antoniou (2008) examined the attitudes of 179 Greek and Cypriot primary education teachers to teaching of children with special needs and found that teachers had a positive attitude towards teaching children with special educational needs. They further found that a positive attitude of others was positively influenced by experience and knowledge (ibid.). Alghazo and Naggar Gaad (2004) found that teachers in the Emirate of Abu-Dhabi in general tended to have negative attitudes towards the inclusion of students with disabilities. Their research comprised 160 teachers. Todorovic, Stojiljkovic, Ristanic and Djigic (2011) studied 100 Serbian teachers and discovered a positive attitude to inclusion, with 80 % favoring the idea of inclusion. Pijl (2010) reported a negative attitude of teachers in the Netherlands to inclusion and found that many hesitated to accept responsibility for students with special needs in their class.

Other authors find that a teacher's attitude to inclusion is linked to gender (Alghazo and Naggar Gaad, 2004; Avramidis et al., 2000; Ellins and Porter, 2005; Todorovic et al., 2011) and that a pre-service teacher's attitude is likewise linked to gender (Forlin, Loreman, Sharma and Earle, 2009), to the years of work experience (Alghazo and Naggar Gaad, 2004; Todorovic et al., 2011), a teacher's qualifications and competences for teaching in an inclusive environment (Flatman Watson, 2009; Pearson, 2009), experiences in teaching children with special needs (Pijl, 2010; Sobel and French, 1998; Wilkins and Nietfeld, 2004), and the types of special needs (Alghazo and Naggar Gaad, 2004; Kristensen, Omagor-Loican and Onen, 2003; Todorovic et al., 2011).

In the past 40 years, authors have frequently researched the links between gender and the teacher's attitude to inclusion. Alghazo and Naggar Gaad (2004) showed in research with 160 primary education teachers that male teachers tended to have a more negative attitude to inclusion than female teachers – in particular to the inclusion of children with more severe special needs, i.e. those with mental and behavioral disorders. Also Ellins and Porter (2005) showed in a research with 47 teachers that the male teachers tended to have a more negative attitude to inclusion than female teachers. Similar findings were obtained by Avramidis et al. (2000). Based on analysis of results of 26 research studies of the teacher's attitude to inclusion, De Boer et al. (2011) found that male teachers tended to have a more negative attitude to inclusion than female teachers. However, some authors, including Todorovic et al. (2011), show however that there is no link between a teacher's attitude to inclusion and the teacher's gender. Results of a research study conducted by Forlin et al. (2011), with 603 pre-service teachers from Australia, Canada, Hong Kong and Singapore, showed that there was no difference in their attitude to inclusion. Nonetheless, the authors (ibid.) find that training and preparation for the inclusive education has greater impact on male teachers than on female teachers. The attitude of male teachers, which was negative prior to training, became much more positive after training, than that of the female teachers, meaning that training had a greater impact on the male teachers' attitudes to inclusion than on female teachers' attitudes (ibid.).

Certain authors find that a teacher's attitude is impacted also by the years of work experience. Alghazo and Naggar Gaad (2004) showed that teachers with fewer years of work experience had a more positive attitude to inclusion. Teachers with one to five years of work experience had a more positive attitude to the inclusion of children with special needs into the mainstream elementary schools, than teachers with more than six years of work experience (ibid.). Similar findings were also obtained by Todorovic et al. (2011). Their research study, comprising 100 elementary education teachers, showed that teachers with 1 to 10 years, or 11 to 20 years of work experience had a more positive attitude to

inclusion, than teachers with more than 21 years, or 31 years of work experience (ibid.). The authors (ibid.) additionally stated that younger teachers were more optimistic, and that for this reason their attitude to inclusion was more positive; they explained the cause of such differences by the fact that older teachers had themselves been educated in a system where children with special needs were only educated in special schools, and thus, they were less capable of accepting the inclusion.

Appropriate professional development and training of teachers in the teaching of children with special needs constitute the basis of successful implementation of inclusion (Pearson, 2009). Teachers, who are appropriately trained for teaching in inclusive learning environment, have a more positive attitude to inclusion (Ellins and Porter, 2005). Also De Boer et al. (2011) find that in the past decade many authors have been able to demonstrate an important link between the qualification of teachers and their positive attitude to inclusion. Most teachers in mainstream schools believe that they need additional training in teaching children with special needs (Rose and Coles, 2002). However, they do not get sufficient training, and thus, they feel insufficiently competent and tend to be averse to the inclusion of children with more demanding special needs (Flatman Watson, 2009). Research conducted by Fielding-Barnsley (2005) showed that almost 20% of teachers had never been trained for teaching in inclusive environment. Certain teachers believe that they have been well trained in teaching students with special needs (Rothı, Leavey and Best, 2008), or that training had been available to them, but had not always been advantageous to them (Starczewska, Hodkinson and Adams, 2011). Training in inclusion is needed for teachers without experience (Angelides, Stylianou and Gibbs, 2006) and also for established teachers, who have already completed their professional training (Symeonidou and Phtiaka, 2009; O'Gorman and Drudy, 2010). Universities training future teachers may contribute greatly to making the inclusion more successful (Pearson, 2007). Angelides et al. (2006) propose practical training of students in an inclusive class, and changes in the curriculum, which focus more on the themes as children with special needs, inclusion, social equity, discrimination, and observing the equity and equality of all children. As early as in initial training, the competences of differentiated and individualized instruction should be developed, taking into account the different needs and capabilities of the students. Inclusion of the appropriate instructional methods, resources and modes of delivery contributes to the efficacy of inclusive teaching. The initial education has a significant impact on the pre-service teachers' perceptions and attitudes to inclusive education which, in turn, impact the development of competences and approaches used by teachers to teaching in inclusive classes. The in-service training significantly impacts the teacher's professional development in inclusion, at all professional development stages.

Practical training of teachers, providing practical experience in teaching children with special needs, is significant for the effective implementation of inclusion, (Pearson, 2007; Nash and Norwich, 2010). Insufficient practical experience adversely impacts a teacher's attitude to inclusion (Pijl, 2010). In a study of 89 teachers, Wilkins and Nietfeld (2004) found that teachers with more experience in teaching children with special needs showed a more positive attitude to inclusion. Sobel and French (1998) researched the impact of a one year experience of 40 students in teaching children in an inclusive class on the students' attitudes to inclusion. They found that the students' attitudes to teaching in an inclusive class improved and that they acquired the respect of, empathy with and interest in the children with special needs (ibid.).

Many authors find that a teacher's attitude to inclusion is influenced by the type of special need. Based on an analysis of results of research conducted in the past 10 years, De Boer et al. (2011) find that teachers tend to have a more negative attitude to the inclusion

of children with deficiencies in certain areas of learning, and of children with behavioral and personality disorders. They tend to be most inclined to the inclusion of the mobility-impaired, the blind and visually impaired, and the deaf and hearing-impaired children (ibid.). Alghazo and Naggar Gaad (2004) find that teachers tend to have a more positive attitude to the inclusion of the mobility-impaired children, to children with deficiencies in certain areas of learning, and to blind and visually impaired children. Teachers were most disinclined to include of children with mental development disorders, emotional and psychical disorders, and to deaf and hearing-impaired children (ibid.). Similar findings were recorded by Todorovic et al. (2011), who conclude that teachers show a positive attitude to the inclusion of the mobility-impaired and children with chronic diseases, and a negative attitude to the inclusion of children with behavioral and personality disorders, the deaf and hearing-impaired, and blind and visually impaired children. In identifying how the particular types of special needs impact the teachers' attitudes to inclusion, Kristensen et al. (2003) find that 64% of teachers are disinclined to the inclusion of the deaf and hearing-impaired children, and 54% of teachers believe that children with mental development disorders are more difficult to include. Only 46% of teachers are inclined to include of blind and visually impaired, and 43% of teachers are inclined to the inclusion of mobility-impaired children.

In recent years, computers, the Internet and other technologies have assumed an important place in the lives of children and adolescents. They have become indispensable in the learning process. The use of ICT represents a motivation for children with special needs and has a positive impact on the development of learning and social skills (Ditcharoen Naruedomkul and Cercone, 2010). Many qualitative studies show a positive impact of ICT use on the cognitive progress of students with special educational needs (Beale, 2005; Liu Hong, 2007; Ortega-Tudela and Gómez-Ariza, 2006, Ozgur and Kiray, 2007; Peltenburg, Heuvel-Panhuizen and Doig, 2009; Reis et al., 2010; Shamir and Shlafer, 2011). Computers are much more motivational than using books on their own, but also give the opportunity and social development of students with special needs, resulting in less loneliness (Gabrieli, 2006). In addition to the development of cognitive skills (Reis et al., 2010) ICT for children with special needs also allows progress in social communication and expression (Parson, Danels et al., 2006), has a positive effect on children's social development, enabling them to improve communications (Bishop, 2003; Johnson and Hegarty, 2003; Parsons, Leonard et al., 2006) and social skills (Cheng Ye, 2010; Chen et al., 2009; Mintz et al., 2012), greater self-confidence (Newell, Booth and Beattie 1991) and improved social interaction (Chen et al., 2009; Cheng and Ye, 2010; Doyle and Arnedillo-Sánchez, 2011; Eden and Heiman, 2011; Gabrieli, 2006).

More recent research shows that teachers have a more positive attitude to inclusion than in the beginning of research in the 1990s but that they still have many scruples and some fears (Horne and Timmons, 2009; Mukhopadhya, 2012; Wah Lee and Min Low, 2012). This also applies to pre-service teachers (Forlin et al., 2009). Most teachers still show a negative or neutral attitude to inclusion (De Boer et al., 2011), and an effective inclusion requires a positive attitude. Teachers with a positive attitude to inclusion are more aware of their own responsibility in the life of children with special needs, and accept them as equal, with empathy and understanding.

The research questions addressed in the survey of Slovenian elementary school teachers are:

– What are teachers' attitudes towards inclusive education?

– Which children with special needs should be able to attend mainstream elementary school?

– What are the experiences of teachers teaching in children with special needs?

– What is teachers' opinion of qualifications for teaching in an inclusive class?
– What are teachers' attitudes and competences of ICT use in inclusive education?
– Is there a correlation between a teacher's attitude to inclusion and his/her gender, years of work experience, experience in teaching children with special needs, and opinion on his/her own qualification in teaching in an inclusive class?

Methods

The survey with a quantitative research approach was conducted among Slovenian teachers who are teaching in the 7th, 8th or 9th class (which is called in Slovenia the third triad of elementary education) and have in the class at least one student with special needs. Approximately nine percent (9%) of students in the last triad of elementary education in Slovenia are students with special needs (Ministry of education, 2015). We were investigating, the attitude of Slovenian teachers to inclusion, their opinion of their own competences for inclusive practice, their experiences with teaching children with special needs, and which children with special needs may, according to them, attend the mainstream elementary school. In addition, we were interested in whether there was a correlation between the teacher's attitude to inclusion and the teacher's gender, years of work experience, experiences in teaching children with special needs, and opinion on their own qualification for teaching in an inclusive class.

Participants

Ten (10) percent of elementary schools were randomly selected from each of twelve Slovenian regions. From the male and female teachers of the third triad of elementary education of all the Slovenian regions, a representative random sample was selected comprising 235 male teachers and female teachers. The research selected teachers teaching in 7th, 8th or 9th class of the third triad of elementary school who have at least one students with special needs in the classroom. Instructions on involvement in the research were most strict about the requirement that the questionnaire shall be completed only by teachers, in the third triad of elementary education and who have at least a single student with special needs in the class.

The questionnaire was completed by 79 teachers (33.6% response rate), comprising 66 (83.5%) female teachers, and 13 (16.5%) male teachers. Most teachers in the sample have a university education (62%), 30.4% have higher education, three teachers (3.8%) have completed high school, and three teachers (3.8%) have the postgraduate master's degree. On average, teachers included in the survey have somewhat less than 17 years of work experience: two years of work experience as a minimum, and 37 years of work experience at most. Most of teachers who responded had students with deficiencies in certain areas of learning, behavioral or personality disorders in their classes.

Instrument

The questionnaire for teachers consisted of descriptive questions to gather data on the gender, level of education, region in which the teacher taught, number of years of work experience, and on the class(es) in which the teacher taught, information of teacher's experience in teaching children with special needs. The Likert scale (1-totally disagree to 5- totally agree) was applied to examine teachers' attitudes to inclusion and their own qualification in teaching in an inclusive environment, the information on the teacher's opinion as to which children with special needs should be able to attend the mainstream elementary school and about teachers' attitudes and competences of ICT use in inclusive education.

The measurement characteristics were identified. For the reliability of teachers' attitudes, teachers' opinion of students with disabilities to be included in mainstream classroom and teacher's qualifications for inclusive teaching the Cronbach's α (alpha) coefficient was applied. The value of Cronbach's alpha coefficient was higher than 0.782 and only in one case 0.650 which indicated sufficient reliability of the instrument.

For statements, measuring a teacher's attitude to inclusion and opinion on his/her own qualification for inclusive teaching, we conducted the factor analysis using the method of the main axes with Varimax rotation with Kaiser normalization, so as to determine, which statements are measuring the same dimension. The results of the factor analysis are presented in the findings section.

Statistical methods

In data processing we used the univariate, bivariate and multivariate analysis provided by the SPSS statistical data processing software: descriptive statistics, frequency distribution, Spearman rank correlation coefficient, Mann-Whitney U test, and factor analysis.

Results

The teacher's attitude to inclusion

It is evident from Table 1 that, on average, teachers tended to agree most with the statement, *Inclusion has positive impacts on social development of all children in an inclusive class* (M=3.46), and *I believe that students with special needs are able to acquire appropriate education in mainstream inclusive elementary school* (M=3.35). Teachers tended to agree least with the statement, *All the students with special needs should attend special school* (M=2.15). We recomputed the index, *The teacher's attitude to inclusion*, as a mean of agreement of variables, measuring the positive and the negative attitude to inclusion.

For arguments, which measure teachers' attitudes towards inclusion, factor analysis was performed according to the method of the main axis with Varimax rotation, to determine which claims measure the same dimension. The number of dimensions were determined using the Kaiser criterion indicating that in relation to the inclusion criteria has two dimensions: a positive attitude towards inclusion and a negative attitude towards inclusion.

Statements measuring a negative attitude to inclusion are as follows:

– *Inclusion has negative impacts on learning results of fellow students without special needs in an inclusive class*;

– *Inclusion has negative impacts on learning process in the class*, and

– *All the students with special needs should attend special school.*

Positive attitude to inclusion are measured by the statements:

– *Inclusion has positive impacts on social development of all children in an inclusive class*, and

– *I believe that students with special needs are able to acquire appropriate education in mainstream inclusive elementary school.*

Statements of negative attitude were recoded, and a mean of all of them was computed, so that a higher mark means a more positive attitude, and a lower mark means a more negative attitude. The research results showed that, on the average, teachers had a neutral attitude to inclusion (M=3.40), and that agreement with the statements measuring a positive attitude was higher on average (M=3.41), than the agreement with the statements measuring a negative attitude (M=2.60).

Table 1. *The teacher's attitude to inclusion*

The teacher's attitude to inclusion	n	Min.	Max.	M	SD
Inclusion has positive impacts on social development of all children in an inclusive class	79	2	5	3,46	1,06
I believe that students with special needs are able to acquire appropriate education in mainstream inclusive elementary school	79	1	5	3,35	0,934
Inclusion has negative impacts on learning results of fellow students without special needs in an inclusive class	79	1	5	2,82	1,238
Inclusion has negative impacts on learning process in the class	78	1	5	2,82	1,225
All the students with special needs should attend special school	79	1	4	2,15	1,292

Notes: n – number; Min. – Minimum; Max. – Maximum; M – Mean; SD – Standard Deviation.

The teacher's opinion on which children with special needs should be able to attend the mainstream elementary school

We wanted to know about the teachers' opinion on which children with special needs should be able to attend the mainstream elementary school. It is evident from Table 3 that teachers, on the average, tended to agree with the statement that the mainstream elementary school could be attended by *students with deficiencies in certain areas of learning* (M=3.75), *students with chronic disease* (M=3.63), and *students with the speech and language disorders* (M=3.51). However, they did not agree that the mainstream school could be attended by *students with mental development disorders* (M=2.05).

Table 2. *The teacher's opinion on which children with special needs should be able to attend the mainstream elementary school*

Which children with special needs should be able to attend the mainstream elementary school?	n	Min.	Max.	M	SD
Children with deficiencies in certain areas of learning (e.g. dyslexia, dysgraphia, dyscalculia, dyspraxia, ADHD etc.)	79	1	5	3,75	1,149
Persistently diseased children (e.g. eating disorders, epilepsy etc.)	79	1	5	3,63	1,211
Children with speech and language disorders	77	1	5	3,51	1,096
Children with behavioral and personality disorders	79	1	5	3,14	1,071
Mobility-impaired children (cerebral paralysis, spinal muscular atrophy, injuries of the head etc.)	79	1	5	3,06	1,264
Children with several disorders.	78	1	5	3,01	1,026
Children with the autistic spectrum disorders (autism, Asperger syndrome etc.)	79	1	5	3	1,132
Deaf and hearing-impaired children	78	1	5	2,95	1,278
Blind and visually impaired children	78	1	5	2,91	1,24
Children with mental development disorders (e.g. Down syndrome)	79	1	5	2,05	1,12

Notes: n – number; Min. – Minimum; Max. – Maximum; M – Mean; SD – Standard Deviation.

The teacher's experiences in teaching children with special needs

In addition, we wanted to know about which children with special needs the teachers had already taught by then, namely, about the teachers' experiences in teaching children with special needs. It is evident from Table 3 that most teachers have gained experience in teaching *children with deficiencies in certain areas of learning* (87.3%), there follow *children with behavioral and personality disorders* (60.8%), *children with speech and language disorders* (48.1%), and *children with chronic disease* (40.5%). Teachers have gained the least experience in teaching *children with mental development disorders* (3.8%). Thus, teachers tend to agree most with the statement that children with deficiencies in certain areas of learning should attend inclusive classes, and that they have gained most experience with these children. Teachers have gained the least experience with children with mental development disorders, and they tend to agree least with the statement that these children should be able to attend a mainstream elementary school. The index of a teacher's experience in teaching children with special needs was computed as a sum of *Yes* responses to 10 variables of the question, *Which students with special needs do you teach or have you ever taught?* We find that, on the average, teachers have gained sufficient experience in teaching in an inclusive class (M=3.54).

Table 3. *Percentage of teachers, who have taught children with certain special needs*

Special needs	%
Children with deficiencies in certain areas of learning	87.3
Children with behavioral and personality disorders	60.8
Children with speech and language disorders	48.1
Persistently diseased children	40.5
Mobility-impaired children	32.9
Children with the autistic spectrum disorders	26.6
Deaf and hearing-impaired children	21.5
Children with several disorders	19
Blind and visually impaired children	12.7
Children with mental development disorders	3.8

Notes: % – Percentage.

The teacher's opinion on his/her own qualification in teaching in an inclusive learning environment

It is evident from Table 4 that, on the average, teachers tend to agree most with the statement, *Teachers should gain more knowledge in teaching students with special needs during their own professional education* (M=4.27), and that they *would need more training in teaching students with special needs* (M=4.21). They do not agree with the statement, *I have sufficient knowledge in teaching children with special needs* (M=2.27), or with the statement, *During my professional education I have gained sufficient knowledge in teaching children with special needs* (M=2.10). Teachers tend to agree more with statements expressing their opinion on their insufficiently developed competences of teaching students with special needs in an inclusive class, and that they would need more training in this particular area.

For arguments, which measure teachers' opinion about their skills for teaching in an inclusive classroom, factor analysis was performed according to the method of the main

axis with Varimax rotation, to determine which claims measure the same dimension. The number of dimensions was determined using the Kaiser criterion. The findings indicate that teacher's opinion about their skills for teaching in an inclusive class criteria has two dimensions: they are sufficiently qualified to teach in inclusive classroom or not sufficient trained to teach in an inclusive classroom.

A teacher's opinion that he/she is well qualified for teaching in an inclusive class is measured by the following statements:

– *I have sufficient knowledge for teaching children with special needs*;

– D*uring my professional education I have acquired sufficient knowledge in teaching children with special needs*;

– *I have ample opportunities for subsequent training (e.g. at seminars) in teaching children with special needs.*

Statements measuring the teacher's opinion that he/she is inadequately qualified for teaching in an inclusive class are:

– T*eachers should acquire more knowledge in teaching children with special needs during their professional education*, and

– *I would need more training in teaching children with special needs.*

Statements ascertaining the teachers' opinions that they were insufficiently qualified for teaching in an inclusive class were recoded, and a mean of all of them was computed, so that the highest mark means a teacher's higher opinion of his/her own qualification in teaching in an inclusive class, and a lower mark the teacher's lower opinion of his/her own qualification in teaching in an inclusive class. The research results show that teachers, in expressing their own qualification in teaching in an inclusive class, have expressed a neutral position (M=3.37).

Table 4. *The teacher's opinion on his/her own qualification in teaching in an inclusive class*

Teacher's qualification in teaching in an inclusive class	n	Min.	Max.	M	SD
Teachers should obtain more knowledge in teaching children with special needs during their own professional education	78	1	5	4,27	1,286
I would need more training in teaching children with special needs	79	2	5	4,01	1,182
I have sufficient opportunities for the additional training (e.g. at seminars) in teaching children with special needs	79	1	5	2,76	1,243
I have sufficient knowledge in teaching children with special needs	79	1	5	2,27	1,402
During my professional education I have gained sufficient knowledge in teaching children with special needs	79	1	5	2,1	1,383

Notes: n – number; Min. – Minimum; Max. – Maximum; M – Mean; SD – Standard Deviation.

Teachers' attitudes to ICT use in inclusive education

From Table 5 it is evident that most teachers agree with the statement that ICT is increasing curiosity among children in inclusive class (M = 3.47). That argument was supported by the statement that ICT motivates children in an inclusive classroom in order to learn more (M = 3.30). The least agreement was with the statement ICT enables children in inclusive classroom to facilitate the conclusion of friendship (M = 2.86).

Table 5. *Teachers' attitudes to ICT use in inclusive education*

	n	Min.	Maks.	M	SD
ICT is increasing curiosity among children in inclusive classroom	77	1	5	3,5	1,06
ICT motivates children in an inclusive classroom in order to learn more	79	1	5	3,3	0,98
ICT enables children with disabilities to improve communication skills	79	1	5	3,2	1,1
ICT enables children in inclusive classroom getting more confidence	78	1	5	3,2	0,92
ICT enables equal opportunities in education for children with special needs and their peers in an inclusive classroom	77	1	5	3,1	1,03
ICT enables children in inclusive classroom to facilitate the conclusion of friendship	78	1	5	2,9	1,09

Notes: n – number; Min. – Minimum; Max. – Maximum; M – Mean; SD – Standard Deviation.

For statements on teachers' attitudes to ICT use in inclusive education, factor analysis was performed according to the method of the main axis with Varimax rotation, to determine which claims measure the same dimension. The number of dimensions were determined using the Kaiser criterion. Findings indicate that was measured two dimensions:

– The teacher's opinion that the use of ICT in an inclusive classroom is a good influence on the social development of students;

– The teacher's opinion that the use of ICT in an inclusive classroom has a good impact on the cognitive development of students.

Statements contributing to first dimension are:

– ICT enables children in inclusive classroom obtain greater self-confidence;

– ICT enables children in inclusive classroom to facilitate the conclusion of friendship;

– ICT enables children with disabilities to improve communication skills.

Statements contributing to the second dimension are:

– ICT is increasing curiosity among children in inclusive classroom;

– ICT enables equal opportunities in education for children with special needs and their skills in an inclusive classroom;

– ICT motivates children in an inclusive classroom in order to learn more.

We re-calculate the index *Teacher opinion that inclusion is good for the cognitive development of the students* and *Teacher opinion that inclusion is good for social development of the students* as an average agreement of variables that determine their relationship. Teachers were in greater agreement with the statements that have measured the positive effects on children's cognitive development (M = 3.29), and slightly less with statements that have measured the positive effects on children's social development (M = 3.09). Teachers' attitudes towards the use of ICT in an inclusive classroom is neutral.

Teachers' opinion of their competences for teaching with ICT

Teachers need to assess how they have developed skills to use ICT tools and programs. The index *Teacher opinion about their own competences for teaching with ICT*

was calculated as the average of the variables that determine their own assessment of the competences to use ICT. It is evident that teachers in determining their own competences for teaching with ICT occupy a neutral opinion (M = 3.32). We therefore wanted to know whether they believe they need more training for teaching with ICT in inclusive classroon. Teachers have to indicate how strongly they agree on two arguments on the 5-stopnejski scale. From Table 11 it is evident that, on average, they do not agree with the statement that they have a good knowledge of ICT for students with special educational needs (M = 1.86), and that, on average, agree that they need more training in the use of ICT for students with special needs (M = 3.77).

Table 6. *Teachers' needs for training for ICT competences*

	n	Min.	Maks.	M	SD
I have a good knowledge of ICT for students with special educational needs	79	1	4	1,86	1,195
I need more training in the use of ICT for students with special needs	79	1	5	3,77	1,290

Notes: n – number; Min. – Minimum; Max. – Maximum; M – Mean; SD – Standard Deviation.

Is there a link between teachers attitude towards the use of ICT in an inclusive classroom by gender, with work experience and opinion about their skills to use ICT in an inclusive classroom?

Since the distribution deviates significantly from the normal, we used the Mann-Whitney U test (Table 12). It turns out that there is no link between attitude towards the use of ICTs in inclusive class and gender.

Table 7. *Link between the teachers attitude towards the use of ICT in an inclusive classroom by gender*

	Mann-Whitney U	Z	P		
				Men	Women
Teacher opinion that the use of ICT in an inclusive classroom is a good influence on the social development of students	339,500	-1,052	,293	44,88	37,80
Teacher opinion that the use of ICT in an inclusive classroom has a good impact on the cognitive development of students	392,000	-,243	,808	37,15	38,78

The link between the teacher's attitude towards inclusion and work experience, was computed using the Spearman correlation coefficient. The findings indicate that the attitude of teachers to use ICT in an inclusive classroom is not linked to his professional experience.

Index Teacher opinion on its own knowledge of ICT was calculated as the average of the agreement variables in question How well do you know, in your opinion, how to use 18 techniques/applications?

The link between the teacher's attitude towards inclusion and their opinion of their own knowledge of ICT, was computed using the Spearman correlation coefficient.

Findings indicate that the attitude of teachers towards inclusion is not connected with their opinion of their skills for teaching in an inclusive classroom.

Is there a correlation between a teacher's attitude to inclusion and his/her gender, years of work experience, experience in teaching children with special needs, and opinion on his/her own qualification in teaching in an inclusive class?

As the distribution of cooperating teachers by gender rather deviates from the normal, the differences between the two genders were computed using the Mann-Whitney U test. We found that there was no link between the attitude to inclusion, and gender (Table 15).

Table 8. *Link between the teacher's attitude to inclusion, and gender*

	Mann-Withney U	Z	P	Average of ranks	
				Male	Female
Attitudes towards inclusion: Gender	324.500	-1.078	0.281	45.65	38.27

The link between the teacher's attitude to inclusion, and the years of work experience, experience in teaching children with special needs, and opinion of the teacher's own qualification in teaching in an inclusive class was computed using the Spearman correlation coefficient, and we found that the attitude of teachers to inclusion was neither linked to the years of work experience, experience in teaching children with special needs, nor to the teacher's opinion of his/her own qualification in teaching in an inclusive class.

Discussion

Inclusion is a process of acceptance and provision of best possible all-round development to all the students. The teacher should provide for the full inclusion of all the children with the objective of facilitating an effective education, and preparing them for a fully autonomous and independent inclusion into society. In an inclusive learning environment, the teacher shall provide for the best possible learning opportunities for everyone. In order to achieve this, he/she will need the appropriate qualification and support. The society shall face the teachers' negative dilemmas, help them, and stimulate them in a positive direction (Allan, 2003). Teachers need the required knowledge, understanding and experience in order to feel competent for work in an inclusive class (Wamae and Kang'ethe-Kamau, 2004).

In our research we determined the attitude to inclusion of Slovenian teachers teaching in regular elementary classes from 7^{th} – 9^{th}, and their opinion on their own qualification in teaching in inclusive classes, their experience in teaching children with special needs, and which children with special needs were, according to them, able to attend a mainstream elementary school. In addition, we wanted to find out, whether there was a link between the teacher's attitude to inclusion, and his/her gender, years of work experience, experience in teaching children with special needs, and their opinion on their own qualification in teaching in an inclusive class.

In the discussion section we present these findings in the light of comparative studies in other countries.

Table 9. *Comparison between the findings of this and related research about teacher's attitude to inclusion*

Findings of this survey	Results	Findings of related research	Results
I believe that students with special needs are able to acquire appropriate education in mainstream inclusive elementary school.	N	Horne and Timmons, 2009 (Bangladesh)	A
		Wilkins and Nietfeld, 2004 (USA)	N
		Ryan, 2009 (Australia)	D
		Kristensen et al., 2003 (Uganda)	D
All the students with special needs should attend special school	D	Kristensen e tal., 2003 (Uganda)	D
		Wilkins and Nietfeld, 2004 (USA)	N
Inclusion has positive impacts on social development of all children in an inclusive class	N	Avissar, 2003 (Israel)	A

Notes: A – agree, D – disagree, N – neutral.

The research findings showed that teachers had a neutral attitude to inclusion. On average, teachers tend to agree most with the statement that *Inclusion has positive impacts on social development of all children in an inclusive class* (M=3.46), and that *Students with special needs are able to acquire appropriate education in mainstream inclusive elementary school* (M=3.35). It is evident from Table 9 that several other authors have examined similar attitudes of teachers to inclusion. That mainstream elementary school is a best choice for children with special needs was declared by the teachers involved in the research conducted by Horne and Timmons (2009). Wilkins and Nietfeld (2004) found that, on average, teachers tended to partly agree with the statement that *all children with special needs should be able to attend mainstream elementary school, notwithstanding their special need type.* Kristensen et al. (2003) found, however, that only 43% of teachers interviewed agreed with this assertion. On the average, the Slovenian teachers disagreed with the statement that *All the students with special needs should be able to attend mainstream elementary school* (M=2.18 with 59.5% respondents disagreed: 50.6% indicated that they totally disagree and 8.9% disagree). Kristensen et al. (2003) found that only 22% of teachers interviewed agreed with this assertion. Wilkins and Nietfeld (2004) found, however, that on average, teachers partly agreed with the statement that *Students with certain special needs should not attend mainstream elementary school* (M=3.25). Kristensen et al. (2003) found that 37% of all the teachers interviewed agreed with this statement.

The Slovenian teachers expressed a neutral opinion on the statement that *Students with special needs are able to acquire appropriate education in mainstream inclusive elementary school* (M=3.35). Ryan (2009) found that majority of teachers disagree and only 39% of teachers interviewed agreed with this statement.

Likewise, on average, Slovenian teachers expressed a neutral opinion on the statement that *Inclusion has positive impacts on social development of all children in an inclusive class* (M=3.46 with agreement from 53.1% of teachers: 17.7% totally agreed and 35.4% partly agreed). The research conducted by Avissar (2003) showed that 72% of all the teachers interviewed agreed with this statement.

Table 10. *Comparison between the findings of this and related research about teacher's opinion on which children with special needs should be able to attend an inclusive class*

Findings of this survey	Results	Findings of related research	Results
Children with deficiencies in certain areas of learning	A	Čagran and Schmidt, 2012 (Slovenia)	A
		Symeonidou and Pathia, 2009 (Ciper)	A
Persistently diseased children	A	Todorovic et al., 2001 (Serbia)	A
Children with mental development disorders	D	Čagran and Schmidt, 2012 (Slovenia)	A
		Alghazo and Naggar Gaad, 2004 (ARE)	D
		Kristensen et al., 2003 (Uganda)	D
Blind and visually impaired children	N	Starczewska e al., 2012 (Polish)	A
		Todorovic et al., 2001 (Serbia)	D
		Kristensen et al., 2003 (Uganda)	D
Deaf and hearing-impaired children	N	Starczewska e al., 2012 (Polish)	A
		Alghazo and Naggar Gaad, 2004 (ARE)	A
		Todorovic et al., 2001 (Serbia)	D
		Kristensen et al., 2003 (Uganda)	D
Mobility-impaired children	N	Todorovic et al., 2001 (Serbia)	N
		Kristensen et al., 2003 (Uganda)	N
Children with behavioral and personality disorders	N	Čagran and Schmidt, 2012 (Slovenia)	D
		Alghazo and Naggar Gaad, 2004 (ARE)	N
		Todorovic et al., 2001 (Serbia)	D
		Avramidis et al., 2000 (UK)	D
		Starczewska e al., 2012 (Polish)	D
Children with the autistic spectrum disorders	N	Symeonidou and Pathia, 2009 (Ciper)	N
		Alghazo and Naggar Gaad, 2004 (ARE)	N

Notes: A – agree, D – disagree, N – neutral.

Teachers believe that inclusion of a child with special needs depends on the child's particular needs (Symeonidou and Phtiaka, 2009), and therefore, we also focused on the question: which children with special needs should, according to the Slovenian teachers, be able to attend an inclusive class? The findings of several earlier studies show that teachers tend to have differing attitudes to the inclusion of children with the different special needs into mainstream elementary school. Čagran and Schmidt (2011) found that the attitude of Slovenian teachers depended on the type of special need. Their research determined the attitude the teachers showed towards the inclusion of the physically impaired, mildly intellectually disabled, and children with learning difficulties and behavioral/emotional disorders. The authors (ibid.) found that teachers were most in favor of inclusion of children with physical impairments and of those with behavioral and emotional disorders. Table 10 shows the comparison between the findings of our research and, and related, research about teacher's beliefs. Our research showed that teachers did not support the inclusion of children with mental development disorders (M=2.05). Alghazo and Naggar Gaad

(2004) found a low level of support by teachers towards the inclusion of these children in inclusive classes, and 54% of teachers interviewed in a research conducted by Kristensen et al. (2003) believed that inclusion of these children in a mainstream class would be difficult. It is evident from our research that teachers find it most easy to include children with deficiencies in certain areas of learning. Symeonidou and Phtiaka (2009) found similar results. Slovenian teachers have a positive attitude to the inclusion of chronically ill children. Similarly, teachers supported the inclusion of chronically ill children in a research conducted by Todorovic et al. (2011). In our research, teachers showed a neutral attitude to inclusion of the blind and visually impaired children (M=2.91) and of deaf and hearing-impaired children (M=2.95), whilst other research studies had different results. Several supported the inclusion of the deaf and hearing-impaired children (Starczewska et al., 2012; Alghazo and Naggar Gaad, 2004), and of the blind and visually impaired children (Starczewska et al., 2012), whilst others had not (Todorovic et al., 2011; Kristensen et al., 2003). Slovenian teachers show a positive attitude to inclusion of mobility-impaired children (M=3.06). Similar research results have been obtained by Todorovic et al. (2011), and Kristensen et al. (2003). Slovenian teachers show a neutral attitude to inclusion of children with behavioral and personality disorders (M=3.14), and autistic spectrum disorders (M=3.00). Similar findings come from other authors (Symeonidou and Phtiaka, 2009; Alghazo and Naggar Gaad, 2004). However, Todorovic et al. (2011), Avramidis et al. (2000) and Starczewska et al. (2012) find that teachers do not support the inclusion of children with behavioral and personality disorders into mainstream elementary school. Teachers in our research have had most experience in teaching children with deficiencies in certain areas of learning, behavioral and personality disorders, and speech and language disorders. They have had least experience in teaching children with mental development disorders, and they tend to disagree most with such children being able to attend the mainstream elementary school. On the other hand, they agree strongly with the statement that children with deficiencies in certain areas of learning should be able to attend the elementary education inclusive classes.

Table 11. *Comparison between the findings of this and related research about teacher's opinion on his/her own qualification in teaching in an inclusive class*

Findings of this survey	Results	Findings of related research	Results
Teachers should obtain more knowledge in teaching children with special needs during their own professional education	A	Symeonidou and Pathia, 2009 (Ciper)	A
		Wilkins and Nietfeld, 2004 (USA)	A
I would need more training in teaching children with special needs	A	Symeonidou and Pathia, 2009 (Ciper)	A
		Rose and Coles, 2002 (UK)	A
		Sobel and French, 1998 (USA)	A

Notes: A – agree, D – disagree, N – neutral.

As regards the qualification of teachers in teaching in an inclusive class, we were interested in knowing whether they thought that they should receive more guidance on teaching children with special needs during their professional education. Table 11 makes this clear. On average, teachers tended to agree with this statement (M=4.27). And, they disagreed with the statement that during their professional education they had acquired sufficient knowledge in teaching children with special needs (M=2.10). Likewise, teachers disagreed with this statement in the research conducted by Symeonidou and Phtiaka (2009)

(M=2.37), and Wilkins and Nietfeld (2004) (M=2.60). On average (M=4.21), Slovenian teachers agree with the statement that they need more training in teaching children with special needs. This finding is corroborated by other research findings (Symeonidou and Phtiaka, 2009; Rose and Coles, 2002; Sobel and French, 1998). Regarding the statement that teachers have sufficient opportunities of participating in seminars on teaching children with special needs (M=2.76), there are almost no differences between our research results and those of Symeonidou and Phtiaka (2009), as all the teachers showed a low level of agreement with the statement.

Table 12. *ICT use in inclusive education*

	Findings of this survey	**Findings of related research**	
Gender: attitude	No connection	Velkiri and Chronaki, 2008 (Greek)	Connection
Work experiences: attitude	No connection	Tezci, 2009 (Turkey)	Connection
ICT competences: attitude	No connection	Velkiri and Chronaki, 2008 (Greek)	Connection

The relationship between teachers' attitudes to the use of ICTs in inclusive class and gender was studied by (Velkiri and Chronaki, 2008). They found that men have a more positive attitude towards the use of ICTs in inclusive classroom than women. Tezci (2009) studied the relationship between the teacher's attitude towards the use of ICTs in inclusive classroom and work experience and found that work experience affects the frequency of ICT use and attitudes towards the use of ICT in an inclusive classroom. Velkiri and Chronaki (2008) demonstrated that teachers with more years of work experience rarely use ICT in an inclusive classroom (Table 12).

Table 13. *Comparison between the findings of this and related research about teacher's training*

Findings of this survey	**Results**	**Findings of related research**	**Results**
They need more training	A	O'Gorman and Drudy, 2010 (Irish)	A
		Wisdom et al., 2007 (USA)	A
		Helldin et al. 2011 (Swedish)	A

Notes: A – agree, D – disagree, N – neutral.

There is a connection between the teacher's attitude towards the use of ICTs in inclusive classroom and skills for teaching through ICT. Tezci (2009) found that teachers who believe that they are more skilled in the use of ICT in the learning process, had more positive attitude to inclusion and to increasingly use ICT. The author (ibid) found that these teachers can use a word processor (Word), internet and web mail and at least one database. Wisdom et al. (2007) found that teachers are not sufficiently trained in the use of assistive technology for children with special needs. Helldin et al. (2011) report that 87% of the teachers in their study reported that they were not sufficiently familiar with, these technologies. Table 13 shows that in our study, the results of qualification of teachers to use ICT in an inclusive classroom or children with special needs are similar to the research of others: Teachers feel that they need more training in this area.

Previous studies have shown the positive effects of computerized modern teaching methods in the cognitive (Beacham and Alty, 2006; Chambers, 1997; Dimitriadi, 2001;

Magnan and Ecalle, 2006; Mioduser et al., 2000; Newell, Booth and Beattie, 1991; Ortega-Tudela and Gómez-Ariza, 2006; Reis et al.,2010; Schery and O'Connor, 1997; Seo and Woo, 2010;) and social development of students with special needs (Cheng and Ye, 2010; Chen Wu, Lin, Tasi and Chen, 2009; Doyle and Arnedillo-Sánchez, 2011; Eden and Heiman, 2011; Lidström et al., 2011; Mintz, Branch, March and Lerman, 2012; Parson, Leonard et al.,2006; Schery and O'Connor, 1997). These experts highlight that strong motivation (Ditcharoen Naruedomkul and Cercone, 2010; Gabrieli, 2006), promotes the use of ICT in the learning process.

We were interested so see if there is a correlation between a teacher's attitude to inclusion and his/her gender, years of work experience, experience in teaching children with special needs, and opinion on his/her own qualification in teaching in an inclusive class. The comparison between the findings of our and related research about connections are shown in Table 14.

The results show that there is no connection between the attitude to inclusion, and gender. Forlin et al. (2011) and Todorovic et al. (2011), also found that there are no differences in attitude, as regards the gender, although Alghazo and Naggar Gaad (2004) found from 160 male and female teachers that male teachers had a less positive attitude to inclusion, than female teachers. Similar findings were obtained by Avramidis et al. (2000), and Ellins and Porter (2005) (See table 12).

Table 14. *Comparison between the findings of correlation of this and related research*

	Findings of this survey	**Findings of related research**	
Attitude towards inclusion: gender	No connection	Forlin et al., 2011 (Hong Kong)	No connection
		Todorovic et al., 2011 (Serbia)	No connection
		Alghazo and Naggar Gaad, 2004 (ARE)	Connection
		Avramidis et al., 2000 (UK)	Connection
		Ellins and Porter, 2005 (UK)	Connection
Attitudes towards inclusion: Years of work experiences	No connection	Alghazo and Naggar Gaad, 2004 (ARE)	Connection
		Todorovic et al., 2011 (Serbia)	Connection
Attitude towards inclusion: Experiences with teaching children with special needs	No connection	Wilkins and Nietfeld, 2004 (USA)	Connection
		Forlin et al., 2011 (Hong Kong)	Connection

The results show that there is no connection between the attitude to inclusion, and the number of years of work experience. Alghazo and Naggar Gaad (2004) found that teachers with more years of work experience showed a more negative attitude to inclusion. Todorovic et al. (2001) studied 100 teachers and showed that those with more years of work experience had a more negative attitude to inclusion. Based on analysis of results of 26 research studies conducted in the past decade, De Boer et al. (2011) found several research studies that demonstrated the connection between a teacher's attitude to inclusion, and the years of work experience, emphasizing that teachers with more years of work experience showed a more negative attitude to inclusion. They found that teachers with many years of work experience encoutered greater difficulties in changing their method of work in the classroom, and they had greater difficulty in accepting the fact that children with special needs required different method of work (ibid.).

The results further show that there is no connection between a teacher's attitude to inclusion, and his/her experience in teaching children with special needs. In their research among teachers, Wilkins and Nietfeld (2004) found that teachers with more experience in teaching children with special needs showed a more positive attitude to inclusion. Forlin et al. (2011) found that experience in inclusion gained during a teacher's initial education had a major influence impact on their attitude. De Boer et al. (2011) arrived to similar conclusions from an analysis of results of several research studies.

Conclusions

The attitudes of teachers to inclusion have a significant impact. This research shows that the attitudes of Slovenian teachers who are teaching in inclusive classes, are neutral. However, they tend to show a negative attitude to the inclusion of children with certain special needs, in particular children with mental development disorders. Teachers believe that they themselves need more training in teaching in an inclusive class. These conditions required for the implementation of inclusion should be met in the future. Among the key factors are the attitude of teachers to inclusion, and the qualification of teachers, and for this reason, we need to develop relevant competences. A positive attitude to inclusion and relevant qualification are the key factors for a teacher's function in the classroom, which must be ethical, moral and equitable, and the teacher must be aware of his/her responsibility in the lives of children with special needs. These children must be accepted in the classroom without discrimination so that they are equal to all other children. Teachers must be given appropriate training and they must have the necessary experience, thereby stimulating them to improve their positive attitude to inclusion. These competences and the teachers' attitude to inclusion are fundamental preconditions for preparing teachers to create such a learning environment, which facilitates the learning in line with the student's capabilities, together with the introduction of differentiated and individualized instruction, in which teachers are mindful of the uniqueness of every single student in creating a culture of acceptance and mutual respect.

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