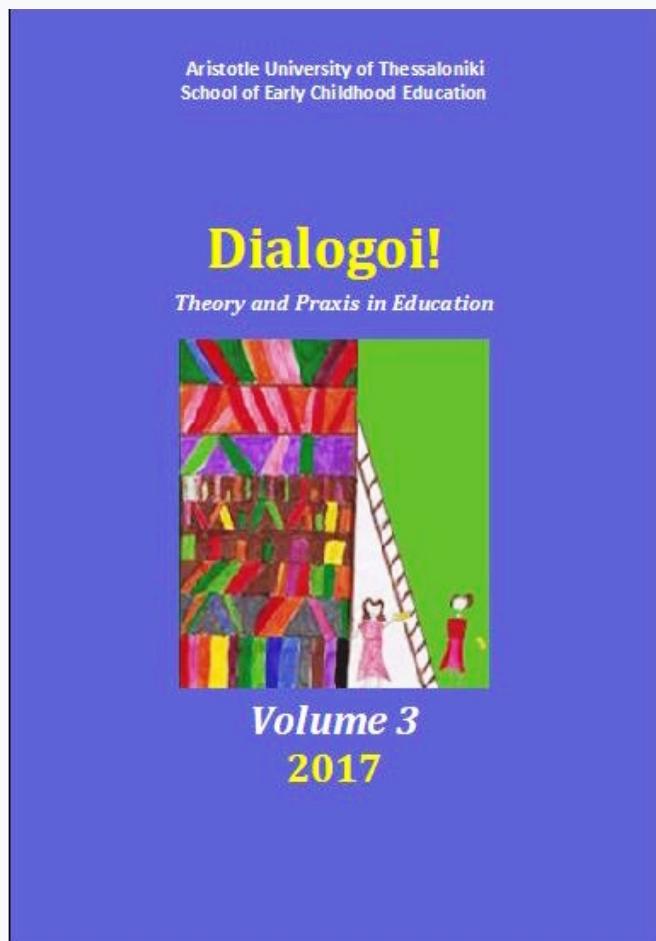


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Teachers' perceptions and attitudes on the inclusive education of students with Autism Spectrum Disorders (ASD): A literature review

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Abstract

The researchers conducted a literature review of teachers' perceptions and attitudes on the inclusive education of students with Autism Spectrum Disorders (ASD). Research was conducted in ERIC, PsychLIT, EBSCO, Medline, and PubMed in order to find the relevant literature, using the following keywords "Teachers", "Perceptions", "Attitudes", "Children with Autism". From the search, 55 relevant research articles and dissertations were found. Results indicated that the majority of the teachers have limited or inadequate knowledge and basic misconceptions about ASD. They also have negative attitudes on the inclusive education of these students. On the other hand, few teachers have positive attitudes towards the integration of autistic pupils. A sufficient percentage of teachers have different attitudes/views on ASD. Additionally, this review revealed that some teachers hold neutral attitudes on the integration of these pupils. Furthermore, several educators perceive students with autism differently from typical students. This review suggests that teachers should receive more training on autism and the effective educational practices for these students. In this way, they will develop positive attitudes towards autistic children's educational integration.

Keywords: teachers; autism; attitudes; perceptions; inclusive education

Περίληψη

Οι ερευνητές πραγματοποίησαν μια ανασκόπηση της βιβλιογραφίας για τις αντιλήψεις και στάσεις των εκπαιδευτικών για την ένταξη των μαθητών/ριών με Διαταραχές Αυτιστικού Φάσματος (ΔΑΦ). Για να βρουν τις σχετικές με το θέμα έρευνες διεξήγαγαν αναζήτηση στις βάσεις δεδομένων ERIC, PsychLIT, EBSCO, Medline, και PubMed με τις λέξεις-κλειδιά «Εκπαιδευτικοί», «Αντιλήψεις», «Στάσεις», και «Παιδιά με Αυτισμό». Από την αναζήτηση βρέθηκαν 55 ερευνητικά άρθρα, μεταπτυχιακές και διδακτορικές διατριβές σχετικά με το θέμα τους. Τα αποτελέσματα έδειξαν ότι η πλειοψηφία των εκπαιδευτικών έχει περιορισμένη ή ανεπαρκή γνώση και βασικές παρανοήσεις σχετικά με τις Διαταραχές Αυτιστικού Φάσματος. Επίσης, οι εκπαιδευτικοί είχαν αρνητικές

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στάσεις απέναντι στην ένταξη των μαθητών/ριών με αυτισμό. Από την άλλη πλευρά, λιγότεροι/ες εκπαιδευτικοί φάνηκε ότι έχουν θετικές στάσεις στην ένταξη αυτών των μαθητών/ριών. Ένα μεγάλο ποσοστό των εκπαιδευτικών φάνηκε να έχει διαφορετικές στάσεις/απόψεις για τον αυτισμό. Επιπλέον, η ανασκόπηση έδειξε ότι μερικοί/ές εκπαιδευτικοί τείνουν να έχουν ουδέτερες στάσεις προς την ένταξη αυτής της ομάδας μαθητών/ριών. Επιπλέον, αρκετοί/ές εκπαιδευτικοί αντιλαμβάνονται τους/τις μαθητές/ριες με αυτισμό διαφορετικά από τους/τις τυπικά αναπτυσσόμενους/ες μαθητές/τριες. Η έρευνα αυτή υποδεικνύει ότι οι εκπαιδευτικοί πρέπει να λάβουν περισσότερη κατάρτιση για τον αυτισμό και τις αποτελεσματικές εκπαιδευτικές πρακτικές για αυτούς/ές τους/τις μαθητές/ριες. Με αυτόν τον τρόπο, οι ίδιοι/ες θα αναπτύξουν θετικές στάσεις προς την εκπαιδευτική ένταξη αυτών των μαθητών/ριών.

Λέξεις-κλειδιά: εκπαιδευτικοί, αυτισμός, στάσεις, αντιλήψεις, ενταξιακή εκπαίδευση

Introduction

According to Gall, Borg, and Gall (1996) an attitude can be defined as a view or disposition of a person towards a particular object. Eagly and Chaiken (2007) define an attitude as “a tendency or latent property of the person that gives rise to judgements as well as to many other types of responses, such as emotions and overt behaviours” (p. 586). They also believe (Eagly & Chaiken, 2007) that attitudes contain cognitive and affective components of behaviour and explain that the formation of an attitude may be conscious or subconscious. Past experience helps shape the evaluative aspects which consist of beliefs and thoughts, feelings, intentions and overt behaviour (Eagly & Chaiken, 2007).

Teachers' positive attitudes towards people with disabilities and their willingness to deal with children's individual differences positively and effectively, greatly affect the attitudes of their colleagues, parents and children without disabilities, and the success of their educational integration (Koster, Nakken, Pijl, & Van Houten, 2009). The cooperation of general education teachers with special education teachers appears to be an important factor in the creation of functional integration programmes (Klinger & Vaughn, 2002; Rainforth & England, 1997). In several cases it has been found that both general education teachers and special education teachers do not know what their collaborative role in the general classroom could be (Strogilos, Nikolaraizi, & Tragoulia, 2012). Teachers' attitudes towards students with disabilities, including autism, play an important role in the integration of these students (Park & Chitiyo, 2011). Furthermore, teachers' attitudes (negative or positive) can greatly influence the effectiveness of autistic students' education (McGregor & Campbell, 2001).

The term “integration” means “the systematic placement of someone in something else and the completion of the subject as an independent, integral part of a larger whole” (Zoniou-Sideri, 2011, p. 159). On the other hand, Zoniou-Sideri (2011), argues that the term “inclusive education” is the result of academics' efforts to broaden the term “integration”, which is no longer a goal, but a means of changing social data, since it aims not to restrict the boundaries of educational institutions, but to involve wider social structures.

Norwich (2000) mentions:

Fundamental principles of inclusive education recognised by all are the following:
a) each student with disabilities is an integral part of general education, b) each student is entitled to have his personality respected and be treated positively, which will facilitate his increased participation in school and reduce his isolation and c) each student has the right to individualised instruction, which means that school should be prepared to respond to each pupil's diversity. (pp. 9-10)

Kofidou and Mantzikos (2017) reviewing the international literature mention that the main difference between these two definitions is that "integration" was implemented as a practice in the absence of a theoretical and ideological context and this is the reason of its failure. The inclusion of children with special educational needs in mainstream schools required the effort of co-existence with the existing curriculum. On the other hand, "inclusive education" entails the features of "integration", but also requires modification of the existing social structures, revocation of prejudices, acceptance of dissimilarity, review of standards and of educational goals, reformulation as a radical educational policy, designing of new curricula and training of educators.

Autism Spectrum Disorders (ASD) describe a lifelong condition characterised by deficiencies in social interaction, impaired verbal and nonverbal communication, a limited range of interests, restricted imagination and flexibility, and impaired acquisition and processing of sensory stimuli (American Psychiatric Association, 2013). This paper examines the educational policy of the inclusion of EU and non-EU countries for pupils with special educational needs and the factors affecting teachers' attitudes towards autistic individuals. Several studies on the attitudes and perceptions of teachers about autism are reported, and the relevant studies are then compared.

Aim and Methodology of the study

In order to study this topic the researchers used a qualitative methodology and conducted a literature review. The specific databases utilised were ERIC, PsychLIT, EBSCO, Medline, and PubMed using the following key words: "Teachers", "Education", "Children with Autistic Spectrum Disorders (ASD)", "Children with Autism", "Inclusion", "Perceptions" and "Attitudes". The aim of this review was:

- To present a combination of multiple relevant studies, that clearly represents teachers' beliefs, attitudes, and perceptions regarding the inclusion of children with ASD in mainstream schools, involving teachers from countries which are members of the European Union and countries that are not members of the European Union.
- To study the educational policy of the inclusion of EU and non-EU countries for pupils with special educational needs.
- To identify and study the factors and variables that influence teachers' beliefs and attitudes regarding the inclusion of children with ASD in the mainstream school environment.
- To highlight potential contradictions, controversial issues and gaps in the specific literature, in order to motivate future researchers to investigate and study the particular field in various ways and in more detail.
- To critically evaluate and compare the reported studies.

The researchers used the above keywords in combination with the name of each European or non-European country. They collected a total of 110 research articles and a few postgraduate and doctoral theses. Next, they evaluated the context of these studies, postgraduate and doctoral theses, regarding their validity, credibility and relevance to the topic of the present research; a few of them were excluded as irrelevant. The researchers examined the following matters in detail:

- The research questions of each reported study,
- The methodology of each reported study,
- The main research findings of each reported study and
- The methodological weaknesses and gaps of each study.

Finally, the researchers selected and studied 55 academic articles, including the relevant postgraduate and doctoral theses, which were published between 1999 and 2017. The literature review process lasted from June 2016 to September 2017. Furthermore, the researchers examined all issues of the following academic journals: American Journal of Speech-Language Pathology, Autism Research and Treatment, Autism Research, Autism, Autonomy, the Critical Journal of Interdisciplinary Autism Studies, Developmental Disabilities Research Reviews, Focus on Autism and Other Developmental Disabilities, Good Autism Practice, Journal of Applied Research in Intellectual Disabilities, Journal of Autism and Developmental Disorders, Journal of Child Neurology, Journal of Medical Speech Language Pathology, Research in Autism Spectrum Disorders, Review Journal of Autism and Developmental Disorders, and Young Exceptional Children, published over the last 17 years.

The organisation of the content of the study

Postgraduate and Doctoral Theses

The researchers included relevant postgraduate and doctoral theses for two important reasons. Firstly, they considered that it would be beneficial for the progress of the research to study the specific theses, in case they would provide new and updated data in regard to their study. Secondly, a few of these postgraduate and doctorate theses have already been included and presented in several international researches and projects. Nevertheless, the researchers argue that the specific postgraduate and doctorate theses helped them gradually combine, compare and create useful knowledge.

The classification of research according to the educational policy on the inclusion of children with special educational needs in European and non-European countries

The researchers gathered several articles about educational policies on the inclusion of children with special educational needs which have been adopted in the European and non-European countries this study relates to. The researchers took the view that these studies had to be included so that readers could become more familiar with educational policies on inclusion in those countries.

The classification of research according to the variables that influence teachers' personal attitudes and beliefs regarding the inclusion of children with Autistic Spectrum Disorders (ASD)

The principal focus was on the variables and factors that affect teachers' beliefs and attitudes on students with autism. These factors were categorised using a particular classification, in order to inform readers about them and their impact on teachers' beliefs and attitudes. The parameters analysed and discussed were the following: gender, teaching experience, previous experience with children and adults with disabilities and/or special educational needs, teachers' academic educational background, types/severity of disability and teachers' beliefs.

The classification of research according to teachers' attitudes and beliefs in EU and non-EU countries

The researchers classified the specific studies and material per country in order to help readers realise which EU countries and non-EU countries educate and promote teachers and educational staff that support and promote the inclusion of children with ASD. The countries members of the European Union are reported first, followed by the countries that are not members of the European Union.

Educational policy on the inclusion of children with special educational needs in European and non-European countries

In Europe, it appears that inclusive education implementation is a field where theory and progress in policies outpace practice. In England, for instance, there was an overwhelming enthusiasm for the implementation of inclusive education, which, in some cases, had negative consequences for pupils with disabilities. In this case, it is suggested that the appropriate solution for pupils with disabilities is that children and their families' preferences should be taken into account in order to confirm that inclusion (Hodkinson, 2010). However, in Scotland it seems that the benefits of inclusive education outweigh the possible stigmatisation of children with disabilities (Francis, 2008). In Ireland, the Disability and Education for Persons with Special Educational Needs Bill provides for improvements in assessment, exchange of information and writing of service statements but still appears to fail in providing children with SEN with a rights-based educational disability bill (Meegan & MacPhail, 2006). In Greece and Spain, inclusive education is the dominant ideology. However, some of the existing policies were never implemented (Agaliotis & Kalyva, 2011; De Luis, 2016; Soulis, 2002; Zoniou-Sideri, Deropoulou-Derou, Karagianni, & Spandagou, 2006). Further political efforts are needed in order for inclusive education to be actually implemented in these two countries.

In Africa, and more specifically in Kenya, the implementation of inclusive education is not sufficient. In particular, the government should provide the physical facilities required, create educational policies to support individuals with disabilities and modify the existing curriculum accordingly. Furthermore, teachers should be qualified and mass awareness about the need for inclusive education must be created (Mwangi & Orodho, 2014). Another barrier in Kenya's case is that stakeholders need to be convinced that inclusive education is the best solution for disabled children. Thus, local

administrators, the government and local communities need to collaborate in order to improve the educational system accordingly (Elder, 2015). On the other hand, in Turkey special education approaches have been influenced by Western trends in teaching, but the problem of whether the western ideology of Inclusive Education will be implemented or not still persists. The main issue in this case is the role of the teachers, who work overtime and are undercompensated, as well as other contextual factors which contribute to the teachers' negative stance towards the inclusive education model (Ciyer, 2010). Additionally, special education graduates choose to work in private schools for a higher income. Another barrier is the inadequate financial support from the state which would enable public schools to welcome students with disabilities. Although the Ministry of National Education promotes inclusive education, this field is still new and developing on both an academic and a professional level (Melekoglu, Carikoglu, & Malmgren, 2009). On the contrary, in China limited financial resources, teachers' lack of expertise and transportation issues have led to relying on the regular classroom as the only choice for children with disabilities. The central issue in the case of China is the confidence of the educators who need to learn how to collaborate with other teachers, parents and health professionals (Malinen, 2013). The implementation of inclusive practices within the regular school is problematic in Malaysia too. Although an Act which promotes the rights of people with disabilities was adopted in 2008, efforts should focus on raising public awareness and dispelling myths associated with special needs in order for children with disabilities to be able to attend mainstream schools (Jelas & Ali, 2014).

In Bangladesh, inclusive education policies are largely influenced by the global trend towards inclusive education, and it seems that school educators are not able to comprehend these policies. The inadequate professional development of school teachers is a major barrier which does not allow for the effective application of this measure in the country's schools (Malak, Begum, Habib, Shaila, & Roshid, 2013). In Pakistan, students with disabilities constitute a large portion of the school population; they are marginalised and are usually excluded from school despite the fact that inclusive education is universally acknowledged as the best solution for those students. No political efforts are made, there is confusion concerning the idea of inclusion and the administrative structure of basic education is divided at federal level. In addition, instructors and parents fear that standard schooling will be negatively affected, and the lack of awareness on this subject leads to a lack of confidence when it comes to promoting this policy (Hameed, 2003).

The development of inclusive education in India is in line with international developments. The Persons with Disabilities Act of 1995 is the first major legislation to protect the rights of individuals with disabilities. The act further emphasizes that whenever possible, students with disabilities should be educated in regular school settings. Furthermore, the achievement of Education for All (EFA) in India remains complicated and elusive. In India, 35% of the children in the age group of 6-13 years who have some form of disabilities are out of school. So far, despite policy initiatives, little progress has been made for these children to gain access to regular schools. In recent years, the inclusive education in India is moving at a fast pace in terms of new educational policies (Srivastava, De Boer, & Pijl, 2017a, p. 562).

Additionally, in Thailand there are comparable issues concerning the application of inclusive education, due to political uncertainty and negative educators' attitudes. It is assumed that it is an elite policy in terms of educator training, and that regular schools

are not appropriate for disabled children (Vorapanya & Dunlap, 2014). Similarly, in Lebanon, people with disabilities are the most vulnerable group exposed to poverty. There is not an organisational structure for individuals with disabilities which would acknowledge their needs. Undoubtedly, individuals with disabilities have little access to educational and professional opportunities, with females being affected to a greater extent than males. Nevertheless, a law adopted in 2000 provides for a plan of inclusive education and further reinforces the rights of this group of people. The main reasons for the inability to implement inclusive education is the lack of awareness about the rights and needs of individuals with disabilities, inadequate instructor qualifications and parents' stance towards inclusive education (Wehbi, 2006). Saudi Arabia also has a long way to go in order to establish equal privileges with regard to the educational opportunities for individuals with disabilities. Although the establishment of professional support has advanced, pupils are educated in restrictive environments specifically designed for their needs. The launch of specialised programmes for educators is required in order to provide the essential knowledge and aids which will make schools inclusive (Aldabas, 2015). However, there is a willingness to support disabled individuals and one step towards this direction is the inclusive education of non-conventional disability groups, such as children with learning disabilities and autism (Battal, 2016).

On the other side of the Atlantic, and particularly in the United States, inclusive education is realised as a policy for children with disabilities who have access to the same educational opportunities as the typically developing children (Hossain, 2012). In Canada, inclusive education is widely adopted as a policy in mainstream school but undergraduate programmes do not provide teachers with adequate skills and training. Educator training is the major issue for the successful implementation of inclusive education in this country (McCrimmon, 2015).

In conclusion, inclusive education appears to be a dominant ideology regarding the education of pupils with disabilities. However, there are various barriers, especially in developing countries, which are associated with teachers' education, public awareness, parents' stance towards inclusion, political instability and the availability of financial resources. In Turkey, there is also the belief that inclusive education is a western policy, and in Kenya, stakeholders still need to be convinced about the benefits of inclusive education. China is the only developing country that has been implementing inclusive education from the outset because the option of having special facilities does not exist. In Southern Europe, and particularly in Spain and Greece, inclusion is the central and most accepted ideology. However, inclusion is not really implemented although relevant policies do exist. In England, there is so much zeal about this measure that the negative aspects of it have started to raise doubts about its success, whereas in Scotland, there is still the belief that inclusion is the right solution. The only countries in which this policy thrives are the United States and Canada, where inclusive education is successfully implemented. The only drawback is that in Canada more educational opportunities for teachers are needed. Finally, attention needs to be paid to "well-intentioned attempts by policy-makers, professionals and researchers when making unconsidered leaps towards practices supposedly to support the inclusion of special needs pupils into general education schools" (Naraian, 2010, p. 1684) since inclusion is not the task of individuals, but results from the collaboration between all teaching staff in a general school, whose objective is to create a community which will promote the idea of a 'school for all' (Soulis, 2002).

Factors that influence teachers' attitudes

Research has shown (Al-Faiz, 2007; Avissar, Reiter, & Leyser, 2003; Center & Ward, 1987; Clough & Lindsay, 1991; Eiserman, Shisler, & Healey 1995; Finke, McNaughton, & Drager, 2009; Forlin, 1995; Kofidou & Mantzikos, 2017; Pervin, 2016) that many factors can influence teachers' attitudes towards students with disabilities and/or special educational needs. Some of these factors are their gender, their age, their teaching experience, their previous experience with individuals with disabilities or special educational needs, their academic education, their professional training and the specialized seminars they have attended, their beliefs and the type and the severity of the students' disabilities.

Gender

Alghazo and Naggar Gaad (2004) found an important difference between male and female teachers, according to which male teachers had less positive attitudes towards the integration of students with disabilities and/or special educational needs. On the other hand, Opdal, Wormnaes, and Habaye (2001) emphasised that female teachers (69.5%) were more supportive towards the integration of such students compared to male teachers (59%). Other researchers (Aksamit, Morris, & Leuenberger, 1987; Eichinger, Rizzo, & Sirotnik, 1991; Harvey, 1985) also agree with the two above studies regarding the effect of gender on the attitudes of teachers towards the integration of students with disabilities. However, the results of Parasuram's study (2006) showed that no important differences exist between the two genders concerning their attitudes towards the integration of students with disabilities. Other researchers (Botonaki, 2016; Woodcock, 2013) also agree with the Parasuram's study.

Teaching experience

The results of the research study carried out by Alghazo et al. (2004) showed that teachers who had between one and five years of teaching experience had considerably more positive attitudes towards the integration of students with special educational needs compared to those who had six to eleven years of teaching experience and those who had twelve or more years of experience. Many other researches also agree with these results (Avissar et al., 2003; Center & Ward, 1987; Forlin, 1995; Glaubman & Liftshitz, 2001; Leyser, Kapperman, & Keller 1994; Padeliadou & Lampropoulou, 1997). On the contrary, the study by Avramidis, Bayliss, and Burden (2000) revealed that teachers' teaching experience appears to have no relationship to their attitudes and their perceptions concerning the integration of students with disabilities.

Previous experience with individuals with disabilities and/or special educational needs

Avramidis and Kalyva (2007) found an important difference between teachers who had great experience and those with fewer years of experience or with no experience at all in inclusive education. Their findings suggested that teachers with extended experience had considerably more positive attitudes towards inclusive education compared to those who had fewer years of experience or no teaching experience. Similar results are presented in the study by Kalyva, Gojkovi, and Tsakiris (2007) with regard to

Serbian teachers, which showed that teachers with experience in teaching students with special educational needs were more positive compared to those who did not have such experience. Moreover, Everington, Stevens, and Winters (1999) reported that teachers who had previous experience in inclusive education were more positive compared to those that had no experience. Also, Opdal et al. (2001) came to the conclusion that teachers who had experience in teaching students with special educational needs (29%) were more positive towards integration compared to those without experience (9%). Furthermore, Batsiou, Bebetsos, Panteli, and Antoniou (2008) found a significant positive cross-correlation between the experience and the attitudes of teachers, indicating that their positive attitude is influenced by their previous experience. Additionally, Parasuram (2006) found that teachers who had familiarised themselves with a person with special needs had a more positive attitude concerning that person's integration compared to those who were not familiar with somebody with disabilities. Many other research studies draw similar conclusions (Al-Faiz, 2007; Avissar et al., 2003; Janney, Snell, Beers, & Raynes, 1995; Leyser et al., 1994; Leyser & Lessen, 1985; Stainback, Stainback, & Dedrick, 1984; Shimman, 1990).

Teachers' academic education and training

Avramidis and Kalyva (2007) demonstrated that teachers with extensive education were considerably more positive towards statements regarding the general philosophy of integration, compared to those who had received no training in special education. Also, the study by Batsiou et al. (2008) indicated that teachers' attitudes are influenced by the knowledge and information they receive about the integration of students with special educational needs into general education classes. On the other hand, Liftshitz, Glaubman, and Issawi (2004) investigated the effect of in-house training with regard to teachers' attitudes. That training included a 28-hour course for general education teachers. The results of their study revealed that after the completion of the course, general teachers' scores had increased considerably. However, Wilkins and Nietfeld (2004) showed that in-house training did not influence the attitude of teachers concerning inclusive education. Many other studies also agree with the above findings (Avramidis et al., 2000; Buell, Hallam, Gamel-McCormick, & Scheer, 1999; Van-Reusen, Shoho, & Barker, 2001). On the other hand, Dimitrova-Radojichikj, Chichevska-Jovanova, and Rashikj-Canevska (2016) found no significant relation to the grade level of education of preschool teachers and previous teaching experience with students with disability.

Types and severity of disability

Finally, the results of the study by Alghazo and Naggar Gaad (2004) showed that teachers were more positive towards students with physical disabilities, with specific learning difficulties and with visual impairments. However, teachers were more negative with regard to the integration of students with intellectual disabilities, behavioural problems and hearing impairments. Furthermore, Glaubman and Liftshitz (2001) found that teachers showed more willingness when it came to the integration of students with physical and sensory impairments, while their attitudes were more negative when it came to the integration of those students with specific learning difficulties, mild and severe emotional problems, and mild and severe intellectual disabilities. Interestingly, Liftshitz et al. (2004) explained how teachers' attitude differs per type of disability. Most teachers

were more positive to the integration of students with specific learning difficulties, mild emotional problems, and vision and hearing impairments, while a few of them had negative attitudes towards students with intellectual disabilities, moderate/profound behavioural and emotional problems, and also vision and hearing impairments.

Teachers' beliefs

There is a plethora of studies concerning teachers' beliefs (Clarebout, Elen, Luyten, & Bamps, 2001; Guralnick, 2008; Jordan, Lindsay, & Stanovich, 1997; Jordan, Schwartz, & McGhie-Richmond, 2009; Schommer-Aikins, 2004; Soodak, Podell, & Lehman, 1998) that have argued that their beliefs and attitudes (negative or positive) also influence their teaching strategies.

Teachers' attitudes and perceptions towards students with Autism Spectrum Disorders (ASD)

Greece

Mavropoulou and Padeliadou (2000) studied the perceptions in Greece of thirty-five general education teachers and 29 special education teachers about autism and its impact on educational practice. Their results showed that teachers were aware of autistic spectrum disorders and that autism was not always associated with intellectual disabilities. However, it appeared that teachers were confused about the causes of autism as well as about the appropriate educational practices.

Kalyva (2010) carried out a research study in Greece in which she analysed the knowledge of 229 primary school teachers (ninety-five men and one hundred thirty-four women), aged 25 to 59 years old, on learning disabilities, autism and Attention Deficit Disorder/Hyperactivity. Sixty-six general education teachers and 163 special education teachers filled out three questionnaires which measured their knowledge about each of the above types of disability. The findings of this study demonstrate that teachers knew more about learning disabilities than about autism and Attention Deficit Disorder/Hyperactivity, regardless of whether they were general or special education teachers. The findings also suggest that it is necessary to provide specialised training to teachers for every type of disability.

In her Master's thesis Athanasoglou (2014) examined the attitudes in Greece of 167 teachers, 41 of whom were men and 135 women. Of those, 93 were general education teachers, 44 were special education teachers working in mainstream schools and 39 were special education teachers working in special education school units (abbreviated in Greek as SMEA). The survey's results indicated that training on autism spectrum disorders and high-functioning autism, but also the interpersonal experience of teachers with these students may affect their attitudes in a positive way. In addition, statistical significance between training and its impact on teachers' attitudes was found for all the three groups of teachers (general and special education teachers in general schools, special education teachers in special schools). On the other hand, experience seems to generate statistical significance for general and special education teachers working in general education schools.

Cassimos, Polychronopoulou, Tripsianis, and Syriopoulou-Delli (2013) assessed the views as well as the attitudes of 228 (166 females and 62 males) Greek teachers on the vocational and educational integration of students with autism using questionnaires. As regards the research's findings, most of the teachers appeared to have positive views and attitudes towards integration. However, teachers seemed to be reserved when it came to the efficient treatment of students in the classroom, while the absence of support services was strongly highlighted.

Syriopoulou-Delli, Cassimos, Tripsianis, and Polychronopoulou (2012) examined the perceptions of 228 (116 females and 62 males) teachers in Greece. The findings of their research support that teachers' specialised training and working experience are critical inputs to improve teachers' perceptions and efficient serving of autistic children. A cumulative joint effect of teachers' previous specialised education and working experience working with autistic children was also indicated.

Spain

Sanz-Cervera, Fernández-Andrés, Pastor-Cerezuela, and Tárraga-Mínguez (2017) conducted a research study in Valencia in which they focused on the knowledge of 866 students: 435 first-year pre-service teachers (342 female and 93 male) and 431 fourth-year pre-service teachers (384 female and 47 male). The findings of their investigation support that fourth-year students obtained higher levels of knowledge and fewer gaps than the first-year students, although they also had more misconceptions. Special education specialists obtained significantly more knowledge and fewer misconceptions than the general education pre-service teachers. Specific training and experience had a significant influence on the knowledge and gaps, but it had no influence on the number of misconceptions. These results suggest that university preparation in ASD might not adequately train all future teachers.

Rodríguez, Saldaña, and Moreno (2012) conducted a research study in Seville, Spain in which they focused on the attitudes of 69 special education teachers (19% men and 81% women). Forty-three of them had the support of an Autism Network. Fifty-eight per cent of special education teachers were in general education schools. The average teaching experience was 10 years and eight months. Another 30% had worked as a teacher for less than four years, while 42% had never been involved in teaching students with autism before that year. The rest of the sample had an average of six years and seven months teaching experience with autistic children, while 64.9% had five years or less teaching experience. The potential predictors in their research were experience with children with autism, the schools' relationship with an Autism Network, and the type of school (general or special). The survey's results demonstrated a positive view of teachers' expectations on the education of students with autism. Despite the fact that all three above variables were useful for predicting special education teachers' attitudes, the most relevant was the relationship with an Autism Network. In addition, teachers who took part in this study indicated the urgent need for better knowledge, information and social support.

Scotland

McGregor and Campbell (2001) explored the attitudes of 23 special education teachers and 49 general education teachers in Scotland regarding the integration of students with autism in general education classes. According to the results of the study, general education teachers were positive towards inclusion, while those of them who had experience in working with students with autism were more confident than those who had not. However, special education teachers demonstrated more positive attitudes.

England

Helps, Newsom-Davis, and Callias (1999) examined the attitudes of 72 teachers and support staff in England about their views on autism. Their findings showed that teachers and support staff had different opinions from medical professionals regarding autism. Most of them had either no training in autism or basic training, though they all stressed the need for it.

In another study conducted in England, Humphrey and Symes (2013) studied the attitudes, experience, and knowledge of 53 people working in a secondary school (32 teachers and 21 administrators) about the inclusion of children with autism in mainstream high schools. The results revealed that participants had a positive attitude towards the inclusion of students with autism. In addition, compared with teachers, administrators reported higher levels of self-efficacy towards students as well as in handling their behaviour.

Ireland

Young, McNamara, and Coughlan (2017) conducted a survey in Ireland, analysing the knowledge of 126 (75% were female and 25% were male) post-primary school teachers. The results revealed that teachers have an inadequate level of knowledge and understanding in relation to the Asperger's syndrome. Continued professional development programmes in the area appeared to have minimal effect, with those completing programmes scoring only marginally better than those who did not.

McConkey and Bhurgri (2003) carried out a research study in Belfast, Northern Ireland, on the experiences and attitudes of 56 nursery teachers from 38 nurseries. Their findings suggest that the majority of teachers supported the view that they had inadequate or no training to assist them to meet the specific needs of the children with autism, while they indicated a lack of knowledge and skills to help them.

Sweden

Engstrand and Roll-Pettersson (2012) studied the attitudes and the efficacy of 21 preschool teachers in central Sweden who had students with autism in their classrooms. The results of the survey showed that in general preschool teachers maintained a positive attitude towards their students with autism and this was significantly associated with special out-house training. However, teachers indicated neutral attitudes towards inclusion of students with autism in general kindergarten classes. In addition, there was found to be no relationship between teachers' self-efficacy and their attitudes

towards inclusion, although a link between their participation in in-service training and their effectiveness to make decisions was revealed.

Kenya

As part of her dissertation, Mwendo (2011) conducted a case study. The sample consisted of 50 participants deliberately chosen from an overall population of 75 participants. The participants included the headmaster, four departmental heads, eight special education teachers, 12 general education teachers, 15 assistant teachers, seven part-time therapists, as well as four administrative staff members from the special educational needs department of the Kenyan Ministry of Education. The results showed that there were specific policy guidelines about uniform education in Kenya. The results also revealed that environmental adjustments and modifications were made at primary school to meet the different needs of school pupils. The findings further revealed that the school collaborated with the autistic children's community. However, the study showed that the lack of a curriculum for the special autistic children's unit was a barrier to teaching those children, but also claimed that autistic children can be taught in the context of a uniform educational framework.

Tanzania

Geraldina (2015) carried out a study in Tanzania, Eastern Africa, in which he studied the attitudes of 16 teachers from three primary schools providing general education in the region of Dar-es-Salaam. The results of his study revealed that the majority of primary education teachers had poor knowledge about autistic children. The findings also showed that there were many factors, including the lack of in-service training and the lack of seminars, which were some of the main challenges, faced in teaching autistic children in general classes.

Saudi Arabia

Al-Faiz (2007) conducted a survey in Saudi Arabia analysing the attitudes of 231 primary school teachers concerning the inclusion of students with autism in general education classes. The results highlighted that the teaching framework, the teaching experience and also the existence of a relative with disabilities in the family greatly affected teachers' attitudes towards students with autism.

The purpose of Haimour and Obaidat's (2013) research study was to find out what teachers know about autism as well as if there are significant differences in their knowledge about autism depending on variables associated with gender, professional position, level of education, teaching experience and direct contact with students with autism. A total of 331 general and special education teachers from Jeddah in Saudi Arabia filled out a questionnaire on autism knowledge to determine their level of knowledge about autism. The results reveal significant differences in teachers' knowledge about autism depending on various factors: general teachers favouring special education teachers, more advanced level of education and teaching experience and previous contact with students with autism.

As part of her doctoral thesis, Alhudaithi (2015) conducted a research study in Saudi Arabia where she examined the attitudes of 600 teachers on integrating students

with autism into general classrooms. Only 497 questionnaires were returned and used for data analysis, and 12 teachers were asked about their attitudes towards the integration of these children. The data were analysed using the SPSS programme. The results were grouped into five categories, and revealed that teachers were supportive and had positive attitudes towards the inclusion of students with autism in the general classroom. On the other hand, teachers at private special institutes had more positive attitudes towards inclusion in relation to those teachers working in public primary schools. In addition, teachers supported the idea that inclusive classes were not suitable for students with autism, nor were they themselves qualified enough to teach these children. Therefore, further preparation and training on the practice of integration strategies and techniques is needed, as the researcher argued.

Hasan, Ahmed, and Alasmari (2015) carried out a study in order to evaluate the effects of some variables on special teachers' attitudes regarding the education of students with autism in the general classroom. The researchers used descriptive statistics methods. A questionnaire was used as a data collection method. The study group included 150 special education teachers from the Abu Areech region, while 70 teachers were randomly selected as a sample. The data were analysed using the SPSS programme. The results showed no significant differences in special education teachers' attitudes towards coeducation in relation to their level of interaction with students with disabilities. Furthermore, there were no significant differences in their attitudes towards inclusion, depending on class size. However, there were significant differences in their attitudes towards inclusion, based on training programmes and certification/specialisation.

Lebanon

In his postgraduate dissertation Al Rayess (2014) conducted research in Lebanon in the Mount Lebanon region and in Beirut to explore the attitudes of 35 primary school teachers about the inclusion of students with autism. The study aimed to find possible differences in teachers' attitudes based on variables such as gender, age, years of experience, training and previous contact with children with special needs. The results of his thesis showed that teachers' attitudes towards autism were generally positive. However, special education teachers were significantly more positive than general education teachers. The results showed that differences in attitudes of teachers based on gender, age, and years of experience were statistically insignificant. In addition, the researcher analysed the social acceptance of students with autism using sociometric evaluations. He examined five inclusive classes which usually had a student with autism. The results showed that in three out of five general inclusive classes, the students with autism were neglected, while in the other two, the students were well integrated socially.

Turkey

Aslan (2016) conducted a survey in Central Turkey in the city of Konya, where he studied the attitudes of 82 parents and teachers (42 parents of students with autism and 40 teachers of students with autism). The results of the survey found that the majority of parents and teachers had a lack of knowledge about what autism is. Specifically, 79.2% of teachers had little knowledge about what autism is and 62.8% of parents did not know the exact meaning of autism. No statistically significant difference between the responses of parents and teachers was found. Also, there were no positive attitudes towards the

students with autism, while teachers and parents supported the view that students will not be able to accomplish their tasks at school. Moreover, both teachers and parents had a strong belief that they could complete their tasks better if they were involved in more physical activities rather than mental ones. The researcher concluded that parents should be informed about the needs and the requirements of their children and how these affect their independence in day-to-day routines.

Karal and Riccomini (2016) examined teachers' perceptions of students with ASD. The Autism Attitude Scale for Teachers was administered to 117 general education ($n = 53$) and special education ($n = 63$) teachers in 19 Education Centers for Children with Autism in Turkey. The results of their research indicate that both groups are receptive to students with autism, but special education teachers have more positive perceptions of students with ASD.

Rakap, Balikci, Parlak-Rakap, and Kalkan (2016) investigated the knowledge of 504 senior pre-service teachers who were enrolled in four different teacher education programmes. The findings of their survey indicated that pre-service teachers across programmes had limited knowledge of autism and its characteristics.

Yasar and Cronin (2014) conducted a survey in two universities in Turkey (Gazi University, Ankara, and Karadeniz Technical University, Trabzon). Two-hundred-seventeen participants were from Gazi University, Ankara and 334 participants were from Karadeniz Technical University, Trabzon, for a total of 551 participants (134 male and 417 female). The results of their survey demonstrated that students' knowledge of autism was limited; however, they realised they need for more classes and preparation in order to effectively work with children with autism.

Akgul (2012) investigated the perceptions of 117 teachers and administrators (76 women and 41 men) on the east side of Istanbul in Turkey. The survey results reveal that participants felt inadequate in both teaching and dealing with students with autism, while there were not asking for assistance and training to improve their skills.

Pakistan

Ayub et al. (2017) investigated the knowledge and perceptions of 73 teachers (mean age of 34 years, 66% females) in Pakistan, South Asia. Their results reveal that there are gaps in awareness and knowledge of the teachers. Specifically, 52 teachers identified themselves as having some knowledge about autism, with 23 among this group understanding autism as a neurological/mental disorder. The majority (73.1%) believe that special education is a helpful intervention. The results of this survey suggest that teachers have an inadequate understanding of autism due to several misconceptions. This calls for increased education of teachers with regard to autism and other childhood disorders.

In a survey conducted in Pakistan using questionnaires, Lodhi et al. (2016) examined the ability of 233 teachers to recognise the existence of learning disabilities, as well as their attitudes and practices towards students with dyslexia, Attention Deficit Disorder and autism. The results of this survey suggested that many teachers were not sufficiently qualified or didn't have the ability to detect the potential existence of learning difficulties. Furthermore, the majority of the teachers stated that students with learning disabilities should study in mainstream schools with special educators, while most of them

were found to use effective classroom management techniques, such as provision of more time for task completion, placement of students at the front of the class, but also involvement of the students in discussions.

Malaysia

Low, Lee, and Ahmad (2017) conducted a study with 264 pre-service teachers in a teacher training programme in Malaysia. The study involved 151 special education pre-service teachers and 181 pre-service teachers in Special Education, Sciences, and in English teacher training programmes, in order to identify the effects of teaching specialisations and societal attitude on their inclusive education attitudinal measures. The findings revealed that the special education pre-service teachers were less in favour of the total inclusion of students with ASD in the mainstream, when compared with the non-special education pre-service teachers. The findings also revealed the combined effects of societal attitude and a categorical teacher training model in shaping the pre-service teachers' attitudes towards inclusive education for the students with ASD in Malaysia.

Toran, Westover, Sazlina, Suziyani, and Hanafi (2016) examined the preparation, knowledge, and self-reported competency of 312 special education teachers regarding students with autism. The results of their survey indicated that the current teacher preparation programmes may be inadequate in preparing teachers with the knowledge and skills necessary to teach students with autism. Additionally, in-service training is not currently addressing current teachers' needs for knowledge and skills related to autism.

Razali, Toram, Kamaralzaman, Salleh, and Yasin (2013) carried out a study in Selangor in Malaysia in which they studied the views of three preschool teachers about integrating autistic children into nursery classes. Their results revealed that teachers had not been prepared to teach autistic children in their classroom, because they did not know what features autistic children have and did not grasp the importance of inclusive teaching.

Thailand

Little, Vibulpatanavong, and Evans (2014) explored the attitudes of Thai teachers towards autistic pupils. Their attitudes were defined based on four factors: attitudes about integration, about the effectiveness of teachers, about the academic climate and about social integration. One basic suggestion this study made was that a positive attitude of teachers was closely correlated with more successful results achieved by pupils. The researchers used a mixed methodology, consisting of two phases, and employed both data from a questionnaire and qualitative case studies. The specific study only relates to the first phase of their research which included the answers to the questionnaire about teachers' attitudes. Four hundred and four teachers from seven schools in Bangkok took part in the study. The results showed a continuing need to help teachers build their own confidence and gain knowledge so that they can effectively care for autistic pupils in ordinary classes. Teachers' self-confidence in meeting the educational needs of autistic children (i.e. their effectiveness) was reported as being limited, but teachers did state that they were actively aware of the need to socially integrate such pupils into the ordinary school environment.

India

Srivastava et al. (2017a) carried out a study in India, in which they studied the attitudes of 115 teachers from private regular primary schools in Jaipur city. They examined the attitudes and knowledge about disability and inclusive teaching methods of regular schoolteachers. In terms of attitudes and teaching methods, they found a reliable instrument, which was selected for the usage in this study. They constructed and assessed the reliability of a scale in measuring knowledge about four disabilities: attention deficit hyperactivity disorder, dyslexia, intellectual disability and autistic spectrum disorder in the pilot and main studies. The results of their investigation revealed that teachers hold neutral attitudes towards inclusive education. Their knowledge about disabilities, however, was low, but knowledge about inclusive teaching methods was acceptable, which was a significant finding.

Srivastava, De Boer, and Pijl (2015b) examined the knowledge and attitudes of 79 regular primary school teachers from Jaipur city, India. The outcomes revealed that despite initial neutral attitudes in both groups, the experimental group had significantly more positive attitudes and had increased their knowledge about dyslexia, intellectual disability, ASD, and teaching methods. Furthermore, in their study, they did not find any effect of the background variables on attitudes, such as age or years of experience.

Shetty and Rai (2014) examined the awareness and knowledge of 326 teachers in India. The findings indicated that the majority of the teachers (95.7%) were aware of autism. Only 21% had adequate knowledge and 71 teachers had prior training on ASD. Teachers with more experience and prior training performed better. Teaching experience and prior training were positively correlated to knowledge.

Bangladesh

As part of her Master's thesis, Pervin (2016) conducted a research study in Dhaka City, Capital of Bangladesh where she examined the attitudes of 300 teachers (55% of the teachers were female and 45% were male) on integrating students with autism into general classrooms. The major findings of the study indicate that teachers' attitudes toward inclusion of pupils with ASD in regular classrooms are slightly positive. One interesting finding is that more than half of teachers are willing to make classroom modifications as well as adopt an inclusion model in order to meet the individual needs of students with ASD. In addition, nearly all teachers agree that the responsibility for teaching students with ASD should be shared between regular and special education teachers. On the other hand, the majority of the teachers are not supportive of meeting the needs of students with ASD in the regular classrooms; they are still in favour of the option of maintaining special classrooms for students with ASD. The results also indicate that a statistically significant correlation is highlighted between teachers' attitudes towards inclusion of pupils with ASD and the following teacher-related factors: gender, age, educational qualification, teaching experience, being personally acquainted with a person with ASD, adequate training, and formal training on ASD.

China

A recent study carried out in China by Liu et al. (2016) evaluated, with the use of questionnaires, the knowledge of 471 nursery teachers about the standard development

of children as well as the development of autistic children, their perceptions on the effectiveness of the teaching methods and their awareness of the existing organisations and intervention methods. The knowledge of nursery teachers about autism was linked with the geographical area they lived in, as well as with their education level, and most of the participants were not informed about the existing organisations for autistic people or the available educational intervention methods.

United States of America

Finke, McNaughton, and Drager (2009) carried out a research study in the U.S. about the views of five primary school teachers on the integration of students with autism. The study's findings highlighted that the involvement of general education teachers in teaching students with autism affects their attitudes towards inclusion in a positive way.

As part of his Master's thesis, Segall (2008) conducted a research study in the state of Georgia where he collected the experiences, knowledge and attitudes of nine general education teachers and 20 special education teachers about autism. The results of his thesis indicated that teachers had generally positive attitudes towards the inclusion of students with autism in general education classes. However, 75% of the sample reported that full inclusion was not feasible for all the students.

Hendricks (2011) in the state of Virginia analysed the knowledge and practices of 498 special education teachers about autism. Interestingly, this survey's results revealed that special education teachers, who were teaching students with autism, had low to moderate levels of knowledge regarding autism, as well as low to moderate effective teaching practices for their students.

Cassady (2011) conducted a survey in the states of Ohio, Kentucky, Massachusetts, Pennsylvania, and New York where he studied the attitudes of 25 general education teachers on the integration of students with autism and students with emotional problems. The survey results showed that participants were more positive towards the inclusion of students with autism than towards students with emotional problems.

Kosmerl (2011) explored the beliefs of 50 general education teachers and 50 special education teachers on the integration of students with autism in general primary school classes in Lancaster, Berks County, West Chester, and Montgomery in the state of Pennsylvania. According to the results, special education teachers were more receptive concerning the inclusion of students with autism in general education classes compared to general education teachers.

When preparing her doctoral thesis, Showalter-Barnes (2008) conducted a survey in one school district in Pennsylvania about the attitudes of general education teachers on the integration of students with autism in general education classes. This school region contained seven primary schools, two middle high schools and one high school. Eight thousand students overall attended school in this area. About 870 of these students were individuals with special educational needs. The research sample included 300 general education teachers from this district in Pennsylvania. The results showed that many teachers who received educational training on autism had positive attitudes towards

inclusion of students with autism, while those of them with many years of experience had negative attitudes towards the integration of these pupils.

In a similar study conducted by Park and Chitiyo (2011) which took place in the U.S., the attitudes of 127 teachers from a small town that included five elementary schools, one middle high school, and one high school were analysed. One hundred and fifteen women and 12 men participated in this survey, with the majority of them (83%) being primary school teachers. According to the study's findings, teachers had generally positive attitudes towards students with autism and their integration into public schools. Additionally, the demographic variables seemed to be associated with the attitudes of teachers (gender, age, educational role e.g. general or special education teacher, teaching experience, follow-up seminars about autism, and educational level). Moreover, younger teachers had more positive attitudes towards students with autism. Finally, primary school teachers seemed to have more positive attitudes towards students with autism in relation to high school teachers who had less positive attitudes.

Chung et al. (2015) examined the attitudes of in-service teachers concerning students with and without autism in the USA. In total, 234 teachers (from preschool teachers to high school teachers) from public schools of a metropolitan city participated in the survey. Participants initially read two scenarios, one outlining a student who was presented with autistic symptoms and another outlining a student with typical development. Then, teachers' attitudes towards each student were reported. The results revealed that teachers perceive students with autism differently from typical students, while teachers are more likely to dislike and avoid those students with autism. Standard regression analysis showed also that female gender, teaching at primary schools as well as having expertise in special education are predictors of positive attitudes of teachers towards students with autism.

Anderson (2015) examined the attitudes of forty teachers who had prior direct classroom experience with one or more students diagnosed with autism spectrum disorder. Six different public schools in southeastern Wisconsin employed these teachers of kindergarten through twelfth grade. The results of her research indicate that female teachers and primary level teachers have the highest levels of knowledge and confidence in teaching this unique population of students. Additionally, findings show there is no correlation between number of years of classroom teaching and a teacher's level of knowledge and confidence in teaching a child with autism.

Cramer (2014) examined the attitudes of 1,028 pre-service teachers concerning students with autism in Midwestern Region of the United States. The results of her investigation indicated that pre-service teachers have positive attitudes toward the inclusion of students with ASD. However, their efficacy beliefs about their ability to educate students with ASD in an inclusive classroom were low. Pre-service teachers had significantly lower efficacy beliefs about their ability to educate students with ASD than for their ability to educate students with disabilities in an inclusive classroom. Pre-service teachers did not feel prepared for the inclusion of students with ASD. Pre-service teachers' attitudes toward the inclusion of students with ASD were correlated with efficacy beliefs about their ability to educate students with ASD in an inclusive classroom. Teacher efficacy contributed the most to the variance of pre-service teachers' attitudes toward inclusion of students with ASD (7.2%). The researcher concluded that pre-service teachers have positive attitudes toward the inclusion of students with ASD, but do not

feel prepared for it. They believed they lack the skill and ability necessary to teach students with ASD.

Barned, Knapp, and Neuhardt-Pritchett (2011) in their research analysed the knowledge and attitudes of 15 future preschool teachers at a large South-Eastern University, using a modified version of the Autism Inclusion Questionnaire. Four of them also participated in subsequent in-depth interviews. The results indicated that the future teachers had no knowledge and also basic misconceptions about autism and the needs of students with autism in inclusive education classes. Furthermore, while the participants wanted to learn more in this area and were generally in favour of integration, they seemed to have mixed attitudes about the inclusion of students with more severe disabilities and their future roles in an inclusive education class.

The views of 108 general education teachers on the education of students with autism in general classrooms were examined in the state of Ohio using online questionnaires. Among the most notable results of this study, someone could observe the teachers' intense desire to acquire better knowledge about autism, but also their positive attitudes with regards to the education of students with autism in general classes (Stidham, 2015).

A similar research study was also conducted at the University of Louisville, where researcher analysed the individual characteristics of general and special education teachers and how these affect their views on inclusive education. The data (n=2,627) were collected through a demographic questionnaire and a modified scale which assessed their attitudes. The results indicated that the older teachers in the sample were less receptive to inclusive education, as well as those who had not received formal training in autism (Wilkerson, 2012).

Johnson, Porter, and McPherson (2012) examined the autism knowledge among pre-service teachers specialised in children birth through age five (B-5). The data were collected from 148 of the 176 preservice B-5 teachers. The results indicated that many participants lacked autism knowledge, which is influenced by age, perceived autism knowledge, past experience in working with autistic children and the number of sources where participants received autism information.

An important study was carried out in the state of Pennsylvania on the frequency of inclusion of students with autism in the general classrooms, as well as the correlation between the teachers' beliefs and the quality of inclusion. Their sample included 73 teachers and 78 students, 39 of the latter having been diagnosed with autism. The results of the survey recorded that students with autism who received full-time education, had better development, especially in the area of sociability, compared with students who received part-time education, while the researcher argues that teachers' attitudes on inclusive education are directly affected by the progress of students (McKeating, 2013).

Finch, Watson, and MacGregor (2013) gathered information on experiences of general education teachers concerning their inclusion practices for children with ASD. The sample included 16 elementary education teachers. They found that the participants had minimal experience in pre-service preparation with minor background knowledge on ASD. They also found a limited knowledge of teaching strategies and experiences. Furthermore, they measured the teacher efficacy through the perceptions of preparedness, confidence,

and effectiveness in educating children with ASD. The participants felt low efficacy levels in these areas.

Data were also collected from six principals of primary schools through semi-structured interviews in order to ascertain their attitudes concerning the integration of students with autism in the general education classes of public elementary schools in Pennsylvania. The results of this survey concluded that principals' beliefs were the most decisive factors in the successful inclusion of students with autism in general education classes (Weller, 2012).

At the same time, another researcher (Kesterson, 2012) from the University of Oklahoma garnered 102 teachers with the aim of exploring their knowledge about autism, as well as the consequences of labeling. Participants initially filled out questionnaires that examined their knowledge on autism, and were later asked to read a vignette and a diagnostic assessment of the child which was described in it. Then, they watched a video with the basic characteristics of individuals with autism and Asperger syndrome, and finally, they were asked to fill out the original questionnaires and read the vignette again with the aim to attempt a diagnostic assessment themselves. The findings of this research are impressive, showing that the teachers did not seem to have been affected by diagnostic labels of autism or Asperger syndrome when they had to explain the student's behavior, while they improved their knowledge on autism after they had watched the short video.

Canada

An interesting study was carried out by the University of Toronto using interviews to collect data from two experienced teachers in order to explore to what extent their perceptions and knowledge of teaching autistic children affected the practices and strategies they used. In fact, the study's results indicate that there is a strong correlation between the following points: the more rounded knowledge of autism teachers have, the more effective and beneficial their adopted practices are (Chaaya, 2012).

Discussion – Conclusions

In light of this literature review, most teachers appeared to have positive views and attitudes towards the integration of students with autism (Cassimos et al., 2013; Humphrey & Symes, 2011; Park & Chitiyo, 2011; Segall, 2008; Srivastava et al., 2015b) and used effective classroom management techniques, such as providing more time for task completion, placement of students at the front of the class, but also involvement of students in discussions (Lodhi et al., 2016). Teachers generally demonstrated positive expectations on the education of students with autism (Rodriguez et al., 2012). Positive attitudes were shown not only by general preschool teachers (Engstrand & Roll-Pettersson, 2012), but also primary school teachers (Mwendo, 2011). Specifically, environmental adjustments and modifications appeared to be made at primary school to meet the different needs of school pupils, whereas the school sometimes seemed to collaborate with the autistic children's community (Mwendo, 2011). Furthermore, participants were more positive towards the inclusion of students with autism than towards students with emotional problems (Cassady, 2011), were aware that autism was not always associated with intellectual disabilities (Mavropoulou & Padeliadou, 2000) and

knew more about learning disabilities as compared to autism and Attention Deficit Disorder/Hyperactivity (Kalyva, 2010).

On the other hand, teachers had little knowledge about what autism is, supported the view that students would not be able to accomplish their tasks at school and had a strong belief that children would complete their tasks better if they were involved in more physical activities rather than mental ones (Aslan, 2016). Moreover, most of the participants were not informed about the existing organisations for autistic people or the existing educational intervention methods (Liu et al., 2016), while their insufficient knowledge might also limit their ability to detect the potential existence of learning difficulties (Lodhi et al., 2016). Many teachers also perceived students with autism differently from typical students, while they were more likely to dislike and avoid those students with autism (Chung et al., 2015). In addition, many teachers supported the view that inclusive classes were not suitable for students with autism, nor were themselves qualified enough to teach these children (Alhudaithi, 2015). It is worrying that the majority of primary school teachers appeared to have poor knowledge about autistic children (Geraldina, 2015), were not prepared to teach autistic children in their classroom (Cramer, 2014; Low et al., 2017; Pervin, 2016; Razali et al., 2013) and felt inadequate in both teaching and dealing with students with autism (Akgul, 2012; Toran et al., 2016). Furthermore, teachers expressed neutral attitudes towards the inclusion of students with autism in general education classrooms (Engstrand & Roll-Pettersson, 2012; Srivastava et al., 2017a), whereas special education teachers, who taught students with autism, had low to moderate levels of knowledge regarding autism, as well as low to moderately effective teaching practices for their students (Hendricks, 2011). Finally, in-service, pre-service, and future teachers had no (or limited) knowledge as well as basic misconceptions about autism and the needs of students with autism in inclusive education classes (Ayub et al., 2017; Barned et al., 2011; Finch et al., 2013; Johnson et al., 2012; Rakap et al., 2016; Yasar & Cronin, 2014; Young et al., 2017).

Comparing the attitudes of general and special education teachers working either in public or in private schools, it could be said that special education teachers' attitudes were significantly more positive than general education teachers' attitudes towards autism (Al Rayess, 2014; Karal & Riccomini, 2016; Sanz-Cervera et al., 2017). Specifically, special education teachers were more receptive concerning the inclusion of students with autism in general education classes, compared to general education teachers (Kosmerl, 2011), while primary school teachers seemed to have more positive attitudes towards students with autism in relation to high school teachers who had less positive attitudes (Park & Chitiyo, 2011). In addition, compared to teachers, administrators reported higher levels of self-efficacy towards students as well as in handling their behaviour (Humphrey & Symes, 2011), while teachers at private special institutes had more positive attitudes towards inclusion in relation to those teachers working in public primary schools (Alhudaithi, 2015).

Finally, factors contributing to teachers' positive attitudes towards autistic children are discussed. First of all, training programmes and certification/specialisation in special education are considered vital for teachers in order to have positive attitudes towards the inclusion of autistic children (Alhudaithi, 2015; Athanasoglou, 2014; Chung et al., 2015; Geraldina, 2015; Hassan et al., 2015; McConkey & Bhurgri, 2003; Showalter-Barnes, 2008; Syriopoulou-Delli et al., 2012; Wilkerson, 2012). It is a fact that the more

rounded knowledge of autism teachers have, the more effective and beneficial practices they adopt (Chaaya, 2012). The relationship with an Autism Network is also an important variable for predicting special education teachers' attitudes (Rodriguez et al., 2012). Other demographic variables associated with the attitudes of teachers are gender, age, educational role (general or special education teacher), teaching experience, and school level (Park & Chitiyo, 2011; Pervin, 2016; Shetty & Rai, 2014). Specifically, younger teachers appeared to have more positive attitudes towards students with autism (Park & Chitiyo, 2011), whereas older teachers were less receptive to inclusive education (Wilkerson, 2012). Being female and teaching at primary schools are also predictors of positive attitudes of teachers towards students with autism (Anderson, 2015; Chung et al., 2015), while the interpersonal experience of teachers with these specific students may affect their attitudes in a positive way (Athanasoglou, 2014). Moreover, the involvement of general education teachers in teaching students with autism affects their attitudes towards inclusion in a positive way (Finke et al., 2009) and makes them more confident (McGregor & Campbell, 2001). Finally, the beliefs held by principals are also decisive factors in the successful inclusion of students with autism in general education classes (Weller, 2012), while the knowledge of nursery teachers about autism was linked with the geographical area they lived in as well as with their level of education (Liu et al., 2016).

In conclusion, it can be said that the inclusion of students with autism is an essential aspect of their social acceptance. Autistic children can be taught in the context of a uniform educational framework (Mwendo, 2011) and both teachers and parents should be aware of autistic children's needs and requirements (Aslan, 2016). Unfortunately, many teachers report that full inclusion is not feasible for autistic children (Segall, 2008) and seem to be confused about the causes of autism as well as about appropriate educational practices (Mavropoulou & Padeliadou, 2000). This situation could be changed, if specialised training were to be provided to teachers for every type of disability (Kalyva, 2010). Only in this way will teachers be able to build their own confidence and gain knowledge so that they effectively care for autistic children in ordinary classes (Little et al., 2014).

Limitations of the study

There are two limitations to this review study. There is a lack of prior research studies on this topic. Future investigations could focus on the perceptions and attitudes of teachers concerning the inclusive education of autistic pupils from other EU countries such as Austria, Belgium, Croatia, Cyprus, the Czech Republic, Denmark, Finland, Germany, Hungary, Italy, the Netherlands, Poland, Portugal, Romania, Slovakia, and Slovenia. The results of these research studies could be compared with the results of this study. Finally, it is worth mentioning that it was difficult for the researchers to find significant interrelations from the data presented, mainly due to the small sample size of some of the reported studies. Larger samples in statistical tests could ensure better representativeness for the relevant research findings.

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