

TRAINING NEEDS IN THE FIELD OF AUTISM BY CONTEMPORARY POLISH TEACHERS IN THE CONTEXT OF INTERNATIONAL ASD-EAST PROJECT

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Abstract

The paper presents the results of the part of an international survey on teachers' opinion on autism characteristics and specific educational approach and treatment. Research was undertaken in Poland under the auspices of ASD-EAST project using quantitative and qualitative methods. The results showed the significant differences in teachers' perception on autism regarding to the school settings they worked in. The strong need for special training in the field of ASD was also expressed by teachers.

Keywords: *Autism spectrum disorder; inclusive education, teachers' opinion on ASD characteristics, teachers' training needs.*

Introduction

Poland is a country with an individual model of educational provision. Special school settings coexist with mainstreaming and inclusive schools (Kijak et al., 2017a). Although school mainstreaming and social integration has an established history in Polish education (Kościelska, 1994) optimal inclusive practice for children – regardless of their individual special educational need – is still sought, in accordance with European as well as national legislation to reduce social inequality (Woźniak, 2008; Kijak et al., 2017b). To obtain this goal it is necessary to improve both the level of professional knowledge and practical skills of each particular teacher. It might be possible to realize the idea of *school for all* in the inclusive settings, when each child, including those with autism spectrum disorder (ASD), can be placed successfully regardless of their specific disorders; and they would be appropriately treated as well as accepted by teachers and classmates (Starczewska et al., 2011).

Teachers' knowledge, especially in the context of introducing inclusive education, is also important in order to effectively support the development, therapy and education of a student with ASD (Lerman et al., 2008). However, teachers may demonstrate a low level of knowledge regarding different aspects of ASD, and there has been very little research in Poland regarding teachers' awareness concerning ASD (Bain et al., 2009; Williams et al., 2011). Teachers' (special and subject-specific) knowledge level tests provide important information and indicate the need to be supplemented in Poland (Łęczycka, 1994; Pisula, Rola, 1998; Chrzanowska, 2012) and other countries (Williams, 2011; Shetty, Rai, 2014; Liu et al., 2016; Ayub et al., 2017).

Therefore, understanding individual needs of students with autism in terms of the requirement for clarity of language, structure, visual cues or sensory appropriate physical environment would make a difference in successful implementation of inclusive education (De Clercq, 2006; Bogdashina, 2011; Bombińska-Domżał, Kossewska, 2016). To provide high-quality education to all students and fulfil their needs directly, teachers in inclusive and special schools need to be supported in their collaborative work with other professionals as well as by being provided with tailored trainings that can improve their skills in teaching students with ASD (Morrier et al., 2011).

Inclusion in education of students with ASD, in terms of supporting their participation through meeting their needs, starts with raising awareness, improving knowledge and developing pro-inclusive attitudes (Morewood et al., 2011). Despite generally positive attitudes of teachers towards children with ASD, a lack of knowledge and skills of teachers to include children with ASD has been identified (Busby et al., 2012). Appropriate training can lead to improved teaching skills as well as increasing the self-efficacy of teachers and even prevents their burn-out (Jennett et al., 2003). It is recommended that such training, which supports the teachers to be confident in teaching the children with ASD in inclusive settings, should make use of more than one educational intervention approach to address and manage challenges (Jones et al., 2009) as well as using evidence-based practical interventions (Alexander et al., 2015; Stahmer et al., 2015).

Based on the latest national educational law¹ teachers specifically supporting children with ASD in inclusive settings should be specialized in special education and it is recommended that they should complete university postgraduate studies in the field of autism. Due to this regulation there are many teachers – especially those teaching particular school subjects in primary and secondary schools – who express a strong need to improve their knowledge in the field of ASD.

Existing training for Polish teachers regarding ASD is usually given during university studies in the field of special education and psychology (lasting three up to five years). Therefore, specialist subject teachers are generally unfamiliar with how to teach and support children with ASD in an inclusive education context. Post-graduate studies (lasting three or four semesters) are also recommended. Short courses are also organized: these may be either focused on one specific approach, or on techniques for managing challenging behaviors based on functional behavioural assessment.

The ASD-EAST project was developed to address the acknowledged shortfall in teacher training in ASD in three European countries: Croatia, North Macedonia and Poland. In all these countries, there is a strong need for teacher training in autism to provide content including

¹ Regulation of the Minister of National Education of 9 August 2017 on the conditions for organizing education, upbringing and care for disabled children and adolescents, socially maladjusted and endangered by social maladjustment § 7 para. 2 point 1, item 1578, and § 3 and 4 on specific qualifications required of teachers apply, item 1575 with amendments

not only relevant theoretical information but also practical skills and strategies. The initial stage of the project comprised a mapping phase. In this phase, current best practice in teacher training in ASD was identified, the research literature in the field was reviewed, and a survey was undertaken to identify the knowledge, attitudes and practices of teachers working in both inclusive and special school settings in the three countries. This survey had the explicit goals of identifying: 1) teachers' perceptions of the characteristics of ASD; 2) their views concerning their training needs; and 3) necessary training topics/content. This paper reports on the results of the survey concerning Poland.

The survey

Method

The survey was undertaken with teachers from Poland by using combined qualitative and quantitative methods. To gather data from practicing teachers a structured questionnaire was developed along the ASD-EAST project. The tool collected demographic data regarding the sample, as well as data about teachers' knowledge and attitudes regarding learners with ASD and their needs, teachers' experience and confidence in using specific approaches, and their evaluation of their own training needs.

This survey was supplemented by a qualitative focus group interview protocol, again developed to consult teachers from both inclusive and special settings. Research questions for the qualitative data were focused on gaining further insight into teachers' identified training needs.

Samples

The questionnaire was distributed to teachers between November 2018 and February 2019, with 140 questionnaires returned (response rate 40%). All teachers were university graduates, at master ($n = 134$) and bachelor level ($n = 6$). The descriptive data regarding respondents from inclusive schools (group 1) and special schools (group 2) are given in table 1.

Table 1. Descriptive data (N=140)

Independent variables		Inclusive School N = 63		Special School N = 77	
		N1	%	N2	%
Gender	male	8	12,7	7	9,1
	female	55	87,3	70	90,9
Age	20-35	21	33,3	35	45,5
	36-50	28	44,4	32	41,5
	51-65	14	22,2	10	13,0
Location	city	59	93,6	59	76,6
	Small town	4	6,4	18	23,4
Experience with ASD	< one year	39	61,9	39	50,6
	1-5 years	15	23,8	11	14,3
	>6 years	8	12,7	27	35,1

Two focus groups were conducted in December 2019 to analyze teachers' training needs in the context of ASD. One comprised 12 teachers experienced with ASD. The second focus group consisted of 12 teachers not engaged in educating children with ASD, but currently undertaking postgraduate studies in the field of special education at the Pedagogical University of Cracow.

Results

1. Polish teachers' opinions regarding ASD

Respondents from Poland were asked to present their opinions about a number of statements regarding the characteristics of individuals with ASD. The results are given in the context of group differences related to the teachers experience based on school setting in which they work.

Table 2. Teachers' opinions on the characteristics of ASD – differences between inclusive and special settings in Mann-Whitney U Test

Children with ASD:	Group 1	Group 2	U	Z	p
	Rank Sum	Rank Sum			
Social and communication skills					
Prefer to be alone	4068,5	5801,5	2052,5	-1,7248	0,08
Are good communicators	5426,0	4444,0	1441,0	4,5447	0,00
Find it hard to work in a group	3913,0	5957,0	1897,0	-2,3922	0,02
Have a good language understanding	5119,0	4751,0	1748,0	2,9847	0,00
Interpret language literally	3689,0	6181,0	1673,0	-3,4110	0,00
Cannot make eye contact	3630,5	6239,5	1614,5	-3,5941	0,00
Do not want friends	4155,0	5715,0	2139,0	-1,2890	0,19
Do not have any emotions	4894,0	4976,0	1973,0	1,9471	0,05
Do not understand other's feelings	3928,5	5941,5	1912,5	-2,2511	0,02
Repetitive and challenging behaviors					
Are good at remembering facts	4737,0	5133,0	2130,0	1,4592	0,14
Show repetitive behaviors	3648,5	6221,5	1632,5	-3,7162	0,00
Focus on detail	4620,0	5250,0	2247,0	0,7780	0,43
Have extreme sensory sensitivities	3839,0	6031,0	1823,0	-2,7253	0,00
Love using computers	4754,0	5116,0	2113,0	1,4042	0,16
Are good at maths and science	5015,5	4854,5	1851,5	2,5051	0,01
Are aggressive	4285,5	5584,5	2269,5	-0,6829	0,49
Have obsessions	4561,5	5308,5	2305,5	0,5245	0,59
Are in a world of their own	4039,5	5830,5	2023,5	-1,7689	0,07
Interrupt in lessons	4295,5	5574,5	2279,5	-0,6306	0,52
Dislike change	4082,5	5787,5	2066,5	-1,5924	0,11

Table 2 presents data related to teachers' views regarding the characteristics in the context of school setting teachers worked in. Regarding social and communication skills, teachers working in inclusive settings perceived significantly more positive communication and language skills of children with ASD; and also mentioned that children with ASD are good at mathematics and science. Regarding repetitive and challenging behaviours, there were no significant differences found in teachers' responses.

These statistical differences seem to be related to both the level of social and communication impairment presented by children who are taught in special settings, as well as positive attitudes of teachers who work in inclusive settings but who may be less experienced in working with children with ASD.

2. Polish teachers' opinions regarding the education of children with ASD

Teachers were also surveyed regarding the types of educational settings and interventions they thought would benefit children with ASD. The results are given in table 3.

Table 3. Teachers' opinion on educational approach and treatment for children with ASD – school setting differences in Mann-Whitney U Test

Children with ASD	Group 1	Group 2	U	Z	p
	Rank Sum	Rank Sum			
benefit from:					
Early medical intervention	4340,0	5530,0	2324,0	-0,4230	0,67
Early therapeutic intervention (e.g. speech therapy)	3594,5	6275,5	1578,5	-3,5456	0,00
Early behavioral intervention	3598,5	6271,5	1582,5	-3,5288	0,00
Early educational intervention	5169,5	4700,50	1697,5	3,0471	0,00
Playing with their mainstream peers	5511,0	4359,0	1356,0	4,4775	0,00
educational needs:					
Specialist educational approaches	4071,5	5798,5	2055,5	-1,5476	0,12
Education in special schools	5012,5	4857,5	1854,5	2,3895	0,01
Education alongside their mainstream peers	4189,5	5680,5	2173,5	-1,0534	0,29
Can have a better life but cannot be cured	4812,5	5057,5	2054,5	1,5518	0,12
Are incapable of being educated alongside their mainstream peers	3890,5	5979,5	1874,5	-2,3058	0,02
progress and special talents:					
Can be cured	4093,5	5776,5	2077,5	-1,4555	0,14
Can be academically successful	4204,5	5665,5	2188,5	-0,9906	0,32

In comparison to teachers in inclusive schools, teachers from special settings more often identified the importance of early intervention (behavioral, therapeutic, and educational) for children with ASD; however, they were also more likely to view such children as incapable of being educated alongside their mainstream peers (see Table 3). On the other hand, teachers from inclusive schools significantly more often mentioned that children with ASD benefit from playing with non-autistic peers; however, in their opinion, special school would be appropriate for children with ASD.

3. Polish teachers' training needs in the field of ASD

There was high agreement that all teachers would benefit from training (83%). However, teachers of special setting were more interested in specific theoretical and practical approach. The group differences are given in table 4.

Table 4. Teachers' training needs in the field of ASD – school setting differences in Mann-Whitney U Test

Training benefits and training content	Group 1	Group 2	U	Z	p
	Rank Sum	Rank Sum			
Training benefits	4785,5	5084,5	2081,5	1,4387	0,15
Theoretical information	3920,5	5949,5	1904,5	-2,1801	0,02
Practical strategies	3933,5	5936,5	1917,5	-2,1257	0,03
Strategies relevant to school setting	3864,0	6006,0	1848,0	-2,4168	0,01
Supervision	3906,0	5964,0	1890,0	-2,2408	0,02
Self-experiential training	3590,5	6279,5	1574,5	-3,5623	0,00
Tools and resources	3681,5	6188,5	1665,5	-3,1812	0,00

Theoretical information and practical strategies, particularly those relevant to the settings where teachers worked, were identified as of high importance, as was supervision and the acquisition of tools and resources. Teachers expressed a strong desire to undertake self-experiential learning.

The focus group findings identified challenges that teachers experienced in their work with children with ASD in inclusive settings. Data were analyzed and a two-dimensional categorization of qualitative data was formulated. One dimension was related to psychological processes which might be improved during trainings in the field of ASD: cognition, emotions, and behaviors. The other dimension was related to the subject of training activities' focus (see Table 5).

The focus group responses identified that teachers seek training to develop and improve their understanding of ASD. They reported a lack of general knowledge about the psychological underpinnings of the social, emotional and behavioral impairments in ASD, as well as needing guidance regarding co-teaching and effective working with parents.

Participants wanted to know what methods to use in inclusive education and how to use them. As well as these specific issues, teachers were also interested in general and value-centered perspectives of school inclusion and social integration of children with ASD.

Polish teachers also identified different emotional processes that should be considered within professional training. These emotions seem to be harmful and difficult to cope with without supportive training and in addition they might also affect burnout and other mental health problems. It seems that it would be of great value to improve teachers' personal resources to cope with stress, fear, and overwhelming responsibility.

Table 5. Teachers' training needs two-dimensional matrix

Focus of training	Teachers' psychological processes trained		
	cognition	emotion	behavior
Student-centered	How to understand difficulties in social, cognitive, emotional, behavioral functioning and communication	I like my pupils and I would like them to be more competent	I want to be more competent (e.g. diagnosis process, visual support, sensory integration, music therapy) to help my pupils
Teacher-centered	How to organize co-teaching and parents' engagement	I am afraid of my work position	I want to be more competent to reduce my stress
Value-centered	How to work to improve inclusion and social integration	The most important in my work is responsibility	It is very important for me to act towards acceptance and tolerance improvement

Polish teachers also describe different behavioral strategies that they wished to develop or improve in order to be prepared for the effective inclusion of children with ASD. They expressed that they lacked skills in how to adapt lessons, individualize the curriculum and conduct assessment. Participants were interested in learning specific methods such as sensory integration or visual support systems. Participants emphasized their desire to develop their skills in diagnosis, individualization and adapting lessons teaching, and evaluating students' achievement.

Discussion

Understanding the individual needs of students with ASD is core to the effective implementation of inclusive education. It requires an understanding of the neurological mechanisms of the sensory, social, cognitive and communication impairments in ASD, as well as individuals' strong need for visual and physical structure in the physical environment (De Clercq, 2006; Grandin, 2009). To provide high-quality education to all students and meet their needs appropriately, teachers in inclusive settings need to be supported by effective collaborative work with other professionals as well as by being provided with tailored trainings that can build their skills in teaching students with ASD.

Teacher-teacher and teacher-professional collaboration is fundamental to the effective inclusion of students with ASD. It is essential in establishing and maintaining respectful relationships, in sharing knowledge about student characteristics and special needs, and to raising awareness of effective strategies among the teaching staff team; however, at the same time, it can also be time-consuming and difficult to undertake (Cabe, 2008; Morewood, Humphrey, & Symes, 2011; Busby, Ingram, Bowron, Oliver, & Lyons, 2012; Scheuermann, Webber, Boutot, & Goodwin, 2003).

There is a clear shortfall regarding the training available to teachers in Poland, when compared with that available elsewhere. In other parts of the world, teachers are better-prepared to work with students with ASD; for example, in the USA, most teachers have received a full- or half-day training, while in UK a quarter of teachers received training regarding ASD during university, and eight of ten received some form of in-service training thereafter (Morrier, Hess, & Heflin, 2011; APPGA, 2017).

In general, from the quantitative data, teachers working in inclusive settings perceived children with ASD as good at communication and language skills as well as at math and science. This positive perspective might be helpful for teaching; however, it might over time lead to feelings of failure and teachers' burnout (Jennett et al., 2003) as well as potentially increasing the challenging behavior in children with ASD.

Despite existing trainings in Poland, teachers participating in the survey were very interested in further training in ASD. Even though all respondents were university graduates, they did not receive sufficient training about ASD to be familiar with teaching and supporting the child with ASD in an inclusive *school for all*. Polish teachers expressed the need and desire to receive training in the field of ASD to develop their basic autism understanding as well as the knowledge on the co-teaching organization and parental engagement (Finch et al., 2013). Specific teaching methods and strategies were also important as well as strategies for coping with stress and negative emotions. This links to the findings of other research studies (Jennett et al., 2003), confirming that higher levels of education and training of teachers improve their self-efficacy and confidence in teaching students with ASD (Morrier et al., 2011).

Collaboration with parents and other professionals has emerged as a key theme for Polish teachers. Communication with parents of children with ASD has been reiterated in focus groups as an issue for both mainstream teachers and for special school teachers. Teachers expected parents to cooperate with them in supporting the child's learning at home and complained about parents not following their advice, and also about parents having unrealistically high expectations about the child's education. The need to improve teachers' skills to communicate with parents was emphasized.

Co-teaching with teaching assistants created a challenge within inclusive educational settings, and for teachers who felt strong pressured by having sole responsibility for the

inclusion process and for supporting students with ASD in their school (Loiacono & Valenti, 2010). It can be difficult to collaborate with class teachers and teaching assistants due to the low level of understanding of ASD and strategies of teaching in inclusive settings, as well as due to their attitude of shifting responsibility to the assistant teachers (Symes & Humphrey, 2011a, 2011b). In special schools the challenge of collaborating with other professionals was mainly expressed in terms of barriers in communicating with medical doctors (psychiatrists, neurologists) and psychologists regarding the results of the diagnosis assessment process and the lack of recommendations of how to address the complex needs of their students with ASD (Lerman et al., 2008; Loiacono & Valenti, 2010).

Teachers can feel highly pressured due to a number of factors: their role, their lack of confidence in adapting and modifying teaching methods and environments, and the struggles they experienced in collaboration with parents and colleagues. In response to this, they expressed their need for further training, including hands on practical experience, opportunities for supervision or sharing of experience and knowledge amongst the community of teachers (Probst & Leppert, 2018).

Research limitations

The research presented makes a contribution to our understanding regarding Polish teachers' knowledge and training needs about ASD. The use of both quantitative and qualitative methods provides coherent, triangulated results, though – of course - these have clear limitations. Although the teaching profession is highly feminized, it would be worthwhile to expand the sample studied to include a greater number of male respondents, particularly as male staff are greatly needed in school teaching teams. Secondly, future analysis should take account of demographic variables such as place of work (primary school vs high school), place of residence (village vs small town vs large city), age or length of work experience. Including such factors in the analysis would allow for a wider generalisation of results.

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Summary

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The idea of *school for all* in the inclusive settings, when each child, including those with autism spectrum disorder (ASD), can be placed successfully regardless of their specific disorders is the actual goal of national education system in Poland. To obtain this goal it is necessary to improve both the level of professional knowledge and practical skills of each particular teacher. Existing training for Polish teachers regarding ASD is usually given during university studies in the field of special education and psychology (lasting three up to five years). Therefore, specialist subject teachers are generally unfamiliar with how to teach and support children with ASD in an inclusive education context.

The ASD-EAST project was developed to address the acknowledged shortfall in teacher training in ASD in three European countries: Croatia, North Macedonia and Poland. In all these countries, there

is a strong need for teacher training in autism to provide content including not only relevant theoretical information but also practical skills and strategies. The initial stage of the project comprised a survey to identify the knowledge, attitudes and practices of teachers working in both inclusive and special school settings in the three countries.

The survey, presented in this paper, had the explicit goals of identifying: 1) teachers' perceptions of the characteristics of ASD; 2) their views concerning their training needs in the field of ASD; and 3) necessary training topics/content. This paper reports on the results of the survey concerning Poland.

The survey was undertaken with teachers from Poland by using combined quantitative (the structured questionnaire developed along the ASD-EAST project) and qualitative (focus group interview protocol) methods. The questionnaire was filled in by 140 teachers: group 1 (N = 63) from inclusive schools and group 2 (N = 77) from special schools. Two focus groups were conducted to analyze teachers' training needs in the context of ASD. One comprised 12 teachers experienced with ASD and the second focus group consisted of 12 teachers undertaking postgraduate studies in the field of special education but not engaged in educating children with ASD.

The results showed the statistical differences in teachers' perception of children with ASD characteristics related to school setting teachers worked in. Teachers working in inclusive settings perceived significantly more positive communication and language skills as well as the skills of mathematics and science of children with ASD.

In reference to specific treatment teachers from special settings more often identified the importance of early intervention (behavioral, therapeutic, and educational) for children with ASD; however, they were also more likely to view such children as incapable of being educated alongside their mainstream peers. Teachers from inclusive schools significantly more often mentioned that children with ASD benefit from playing with non-autistic peers; however, in their opinion, special school would be appropriate for children with ASD.

The results also showed the strong need of training in the field of ASD of tested teachers. Theoretical information and practical strategies, particularly those relevant to the settings where teachers worked, were identified as of high importance, as was supervision and the acquisition of tools and resources. However, teachers of special setting were more interested in specific theoretical and practical approach.

The focus group responses identified that teachers seek training to develop and improve their understanding of ASD. They reported a lack of general knowledge about the psychological underpinnings of the social, emotional and behavioral impairments in ASD, as well as needing guidance regarding co-teaching and effective working with parents.

Participants wanted to know what methods to use in inclusive education and how to use them. As well as these specific issues, teachers were also interested in general and value-centered perspectives of school inclusion and social integration of children with ASD.

Polish teachers also identified different emotional processes that should be considered within professional training. These emotions seem to be harmful and difficult to cope with without supportive training and in addition they might also affect burnout and other mental health problems. It seems that it would be of great value to improve teachers' personal resources to cope with stress, fear, and overwhelming responsibility.

It might be concluded that the presented survey gave the significant scientific base for the ASD-EAST project which was developed to address the acknowledged shortfall in teacher training in ASD in three European countries. In Poland teachers expressed the strong need of training in the field of ASD, however, both the necessary training topics/content and teachers' perceptions of the characteristics of ASD differed in reference to the school setting they worked in.

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