

- Bradley, R. (2016). 'Why single me out?' *Peer mentoring, autism and inclusion in mainstream secondary schools*. *British Journal of Special Education* 43(3):272-288.
- Brugha, T. et al (2012). The NHS Information Center, Community and Mental Health Team. 'Estimating the prevalence of autism spectrum conditions in adults: extending the 2007 Adult Psychiatric Morbidity Survey'. Leeds: NHS Information Center for Health and Social Care.
- Majoko, T., 2017, 'Practices that support the inclusion of children with autism spectrum disorder in mainstream early childhood education in Zimbabwe', *SAGE Open* 7(3). <https://doi.org/10.1177/2158244017730387>.
- National Council for Special Education (2015). *Supporting Students with Autism Spectrum Disorder in Schools*. NCSE Policy Advice No. 5. Available from: [www.ncse.ie](http://www.ncse.ie).
- Park, M., Chitiyo, M., & Choi, Y.S., 2010, Examining pre-service teachers' attitudes towards children with autism in the USA, *Journal of Research in Special Educational Needs*, 10(2), 107–114. <https://doi.org/10.1111/j.1471-3802.2010.01150.x>.
- Preece, D., Trajkovski V. (2017). Parent education in autism spectrum disorder – a review of the literature. *Hrvatska revija za rehabilitacijska istraživanja*; 53(1): 118-128.

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## THE OPINION OF THE MAINSTREAM SCHOOL TEACHERS ON THE CONTENT OF THE AUTISM TRAINING: THE A-CLASS PROJECT

**Abstract:** Autism in the classroom is hard for teachers to deal with, especially as many children on the spectrum have accompanying challenging behavior. Giving accurate information about autism and behavior to teachers and teaching them to adapt their curriculum using good autism practice has been shown necessary to be effective in improving children's education. However, in some parts of Europe, such education is extremely limited or non-existent.

The aim of this article is to present initial research of the multinational project funded by Erasmus + program that has been developed to establish teacher education training program in six European countries based on Applied Behavior Analysis (ABA) method.

**Methodology:** To ensure that the training is relevant and appropriate a survey was created out in Autumn 2020 to identify the areas of training that they felt most important. A total of 223 respondents from seven countries took part in the survey: Denmark, Italy, Spain, Macedonia, Cyprus, Czech Republic, and Croatia. Data were evaluated with descriptive approach.

**Results:** Most of the respondents (60.4%) did not receive any training in autism spectrum disorders (ASD) during university studies and more than half of the respondents (53.1%) have never heard of Applied Behavior Analysis (ABA).

**Conclusion:** Teachers agreed that they need additional education. There was no wide difference between countries regarding the content that they felt important to be included in the training curriculum. Six procedures were suggested for training: Behavior management strategies, Functions of behavior, Using reinforcement in the classroom, Extinction, Token economies and Group contingencies.

**Keywords:** Autism, ABA, Behavior

## Introduction

Autism Spectrum Disorder (ASD) is a disorder that affects every individual to a different degree. It can be termed as a lifelong complex developmental disorder, which is characterized by a triad of qualitative impairments in social communication, social interaction and social imagination (Wing & Gould, 1979). In addition to these impairments, ASD people often struggle with sensory hyper- or hypo- sensitivity to visual, auditory, tactile, proprioceptive, gustatory and olfactory stimuli (McAlister, 2010). Epidemiological studies estimate that 1 in 59 births is likely to include a child with characteristics of the autism spectrum in the near future (Schendel & Thorsteinsson, 2018). Although nearly half (44%) of students with ASD fall in the typical range or above on cognitive ability, many of them are placed in mainstream classrooms (Bolourian, Stavropoulos, & Blacher, 2019). Autism in the classroom is hard for teachers to deal with, especially as many children on the spectrum have accompanying learning disabilities or other conditions such as ADHD, pathological demand avoidance (PDA), epilepsy, and/or learning difficulties (www.autism.org.uk, n.d.). Professionals support that it takes hard work to help a child with autism get the most out of the classroom experience. It also takes a good dose of structure and the understanding that every child with ASD is unique, which means each child has different styles of learning (www.webmd.com, n.d.). Existing trainings for school teachers provide little knowledge considered necessary to understand the behaviors of students with ASD (Horroks, White, & Roberts, 2008). In fact, many teachers report a lack of training or readiness to teach students with ASD (Laarhoven, 2010). Although children with autism stand a greater chance of doing better in the mainstream classroom (McAlister & Solan, 2017), many schools are unprepared to accommodate them, as evidenced by the number of legal disputes with families of students with ASD (Bolourian, Stavropoulos, & Blacher, 2019). Consequently, the need to prepare mainstream teachers in evidence-based approaches and practices to enhance the academic and social learning opportunities for these children is imperative. Interventions that are based on applied behavior analysis (ABA) are significantly related to best outcomes and are widely considered best practice (Keenan, Dillenburger, Röttgers, Dounavi, & all., 2015).

“The “A” class: integrating and supporting students with autism in the mainstream classroom” project has a target group of primary school teachers and the following objectives:

- Design, test and publish an innovative educational package (curriculum, handbook, activity book for teachers, classroom management/ reinforcement software for children, infographics, and an e-Learning platform) on evidence-based teaching approaches (based on ABA) for primary school teachers that will guide and support their teaching of children with autism integrated in the mainstream classroom.

- To provide quality training to primary school teachers on how to utilize the innovative educational package in the mainstream classroom to understand, assess and manage behaviors of children with autism and create individualized behavior support plans to prevent and/or de-escalate their challenging behaviors.

The project results are directly linked to intellectual outputs and activities carried out within the project implementation period. Partners from Denmark, Spain, Czech Republic, Italy, Croatia, Cyprus, and The Republic of North Macedonia, will work together to achieve the following results:

1. The “A” Class Educational Package including a Curriculum (IO1) and Handbook (IO2) for primary school teachers, an activity book for teachers (IO3), classroom management/ reinforcement software for children with autism (IO4), and Infographics (IO5), all interconnected.
2. An e-learning platform
3. A set of two e-Learning courses
4. 35 trained (C1) Trainers
5. 35 trained primary school teachers
6. Seven multiplier events (6 multiplier events and 1 Final Conference) to promote the project, its intellectual outputs, and its outcomes.

## Method

The aim of this article is to present initial research of the multinational project funded by an Erasmus + program that has been developed to establish teacher education training programs in six European countries based on ABA methodology. To ensure that the training is relevant and appropriate a survey was conducted in Autumn 2020 to identify the areas of training that they felt most important. A total of 223 respondents from seven countries took part in the survey: Denmark, Italy, Spain, Macedonia, Cyprus, Czech Republic, and Croatia. Data were evaluated descriptively. Due to the needs of the project, descriptive statistics were processed and presented in percentages with ranks through tables and graphs. Relationships between variables were presented with crosstab and significant differences between variables were presented through Pearson's coefficient, with values less than 0.05 considered significant differences.

**Table 1**

Number of participants by country

Country	Total
Macedonia	33
Spain	30
Italy	35
Croatia	34
Denmark	30
Cyprus	31
Czech Republic	30
Total	223

Target groups of the survey were school teachers, trainers, and special education teachers. All respondents took the survey voluntarily and anonymously online. The fieldwork was completed with help of a semi-structured online questionnaire, self-completed by respondents.

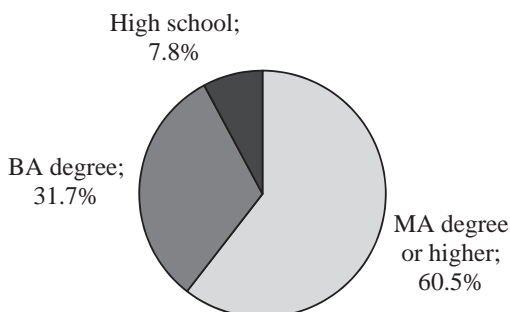
**Table 2**

Number of participants by profession

Which job title matches your role best?		Frequency	Percent
<b>Trainer</b>	Trainer	23	10.3 %
<b>Teacher</b>	Main teacher in the classroom	74	33.2 %
	Assistant teacher (for the class/for one child)	15	6.8 %
	Subject teacher	40	18.0 %
<b>Special education teacher</b>	Special education teacher in a special school	14	6.2 %
	Special education teacher in a special unit	12	5.3 %
	Special education teacher in mainstream school	17	7.7 %
<b>Other</b>	Professional team at school	5	2.4 %
	Speech therapist	1	0.4 %
	Other	22	9.6 %
<b>Total</b>		223	100 %

Most of the respondents held a BA degree or higher (92.2%). The educational structure of the respondents is presented in Graph 1.

**Graph 1**  
Level of education

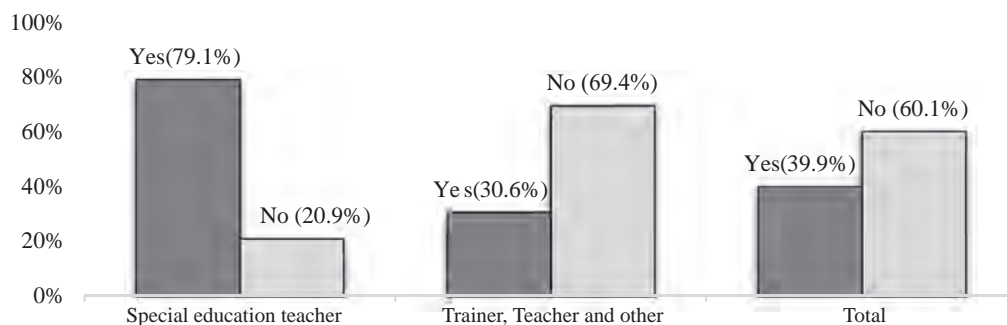


## Results and Discussion

Most of the respondents (60.4%) did not receive any training in autism spectrum disorders (ASD) during university studies. If we take into consideration trainers, teachers, and other participants independently from special educators, less than one-third (30.6%) of them have received some training regarding ASD. The same results were found in an article that reported ASD-EAST research results, about Polish teachers, where authors mentioned that there was a strong need for special training in the field of autism. Especially, they mentioned that there are significant differences in teachers' perceptions on autism, in reference to the school setting in which they work (Kossevaska, Preece, Lisak, Troshanska, & all, 2019). We found similar results in our research, where more than half of the respondents (54.2%) attended some training in ASD outside university studies (table 3). As expected, professionals that visited more trainings are trained or educated in the special education field (see Graph 2).

**Graph 2**  
ASD training attendance

**Did you receive any training in autism spectrum disorders (ASD) during university studies?**



More than half of the respondents (54.2%) attended some training in ASD outside university studies. Considering the cross tabulation below it can be noted that there is certain interest in trainings regarding ASD outside university studies among all target groups. Because children

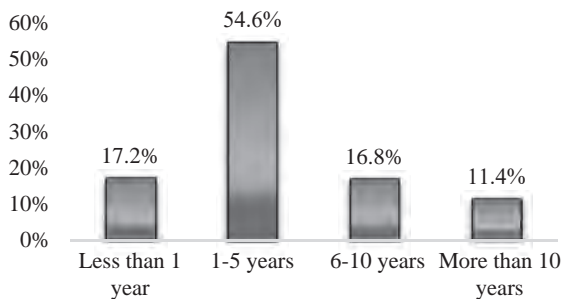
with autism are more likely to be part of the mainstream classroom, these results demonstrate that teachers recognize their need to be trained for specific strategies in the field of ASD. These results can be seen in other studies that present training needs for Eastern-European teachers (Preece, et al., 2019).

**Table 3**  
ASD training attendance outside university

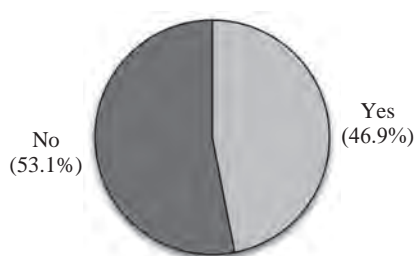
	D2. Level of education			Total	D3. Which job title matches your role best				Total
	MA degree or higher	BA degree	High school		Train-er	Teach-er	Special edu-cation teacher	Other	
<b>N</b>	135	71	17	223	23	129	43	28	223
<b>sig.</b>	0.095				0.003				
<b>Yes</b>	57.0%	55.7%	29.4%	54.2%	65.2%	43.4%	72.1%	64.3%	54.2%
<b>No</b>	43.0%	44.3%	70.6%	45.8%	34.8%	56.6%	27.9%	35.7%	45.8%
<b>Total</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Almost two-thirds of the respondents (69.6%) have practical experience in working with children with ASD, half of them 1 to 5 years (Graph 3) and more than half of the respondents (53.1%) have never heard of ABA (Graph 4). These results show us that popularity of ABA is low, and the awareness of ABA is lowest among the teacher’s group where almost three-quarters of respondents (72.3%) have never heard of ABA. This data is understandable, as a large number of them attended university without studying a subject related to autism (Troshanska, et al., 2019).

**Graph 3**  
Years of experience



**Graph 4**  
ABA Awareness



In total, 18.8% of the respondents have attended ABA training. Of them, 8.1% attended such training both during and outside the university studies, 4.5% attended during the university studies only, and 10.8% attended ABA training outside the university only.

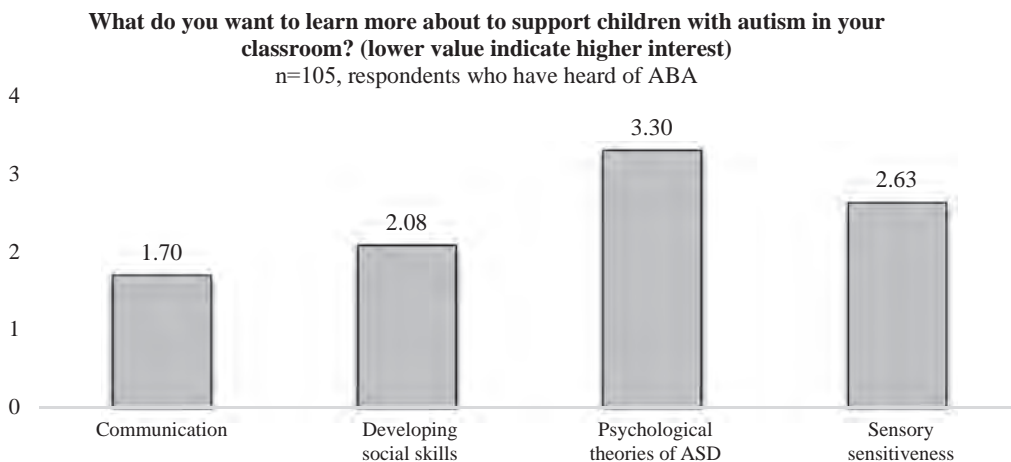
When asked about their confidence in the ability to execute specific ABA procedures and tactics, on average one-third of respondents who have heard of ABA feel very confident in performing those procedures and tactics, and about half of them on average feel somewhat confident. Lowest confidence in executing can be noted in the following procedures and tactics: “Group contingencies (specific procedures to increase and decrease group behavior)” 32.8% and “extinction (specific procedures for no longer paying attention or reinforcing certain behavior)” “In most of the

European countries there are small number of certified Board-Certified Behavior Analyst (BCBA) experts that can supervise the correct implementation of services based on ABA. Due to the fact that they have no one to consult regarding the application of methodological procedures, a large part of the professionals who claim to use ABA strategies have a low level of self-confidence.

Majority of respondents (about 80% on average) who have heard of ABA want to learn more about every offered procedure/ tactic and rankings regarding what respondents want to learn more about to support children with autism in their classroom indicated that they are most interested in “communication” and “developing social skills” (Graph 5).

**Graph 5**

Interest in learning



There was an option “other” in the previous question and the answers are given below:

- Specific ways to deal with challenging behavior
- Sexuality of people with ASD, prevention of bullying within a group
- Sexuality and ways of educating students with PSA on expressing sexual needs.
- Promote psychological well-being in ASD
- Predict avoidance of unpleasant behaviors
- Picture Exchange Communication System (PECS)
- How to establish better collaboration between children or young people
- Emotional difficulties of students with autism
- Emotional control in students with ASD
- Educational curriculum for school inclusion
- Dealing with tantrums and challenging behavior
- Communication with parents

**Conclusion**

Teachers have agreed that they need additional education in the field of ASD especially about strategies on how to handle challenging behavior. There was no broad difference among countries regarding the content that they felt important to be included in the training curriculum. According to their answers, six procedures were suggested for training: behavior management strategies, functions of behavior, using reinforcement in the classroom, extinction, token economies and group contingencies. Due to Article 24, of the United Nation Convention recommendation (United Nations, 2022), high numbers of children with ASD, are currently in mainstream schools. Our

research has shown that more than half of the respondents (60.4%) did not receive any training for autism, and more than half received their education about autism outside of their university studies. Also, we can conclude that teachers, special education teachers and other professionals that work in schools want to learn more about how to support children with autism in their classroom mostly about “communication” and “developing social skills”. That’s why we suggest that all universities that train teachers and other professionals that work with students with ASD should incorporate subjects on these topics in their curriculum. Also, for practicing ABA we need more local support is needed to help professionals with implementing ABA strategies in the classroom.

## Bibliography

- (CRPD), C. o. (2022, July 17). *United Nations*. Retrieved from CRPD Homepage: <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities/article-24-education.html>
- Bolourian, Y., Stavropoulos, K. & Blacher, J. (2019, April). *researchgate.net*. Retrieved from [https://www.researchgate.net/publication/332332500\\_Autism\\_in\\_the\\_Classroom\\_Educational\\_Issues\\_across\\_the\\_Lifespan](https://www.researchgate.net/publication/332332500_Autism_in_the_Classroom_Educational_Issues_across_the_Lifespan)
- Horrocks, J. L., White, G. P. & Roberts, L. (2008, February 7). Principals’ Attitudes Regarding Inclusion of Children with Autism in Pennsylvania Public Schools. *Journal of Autism and Developmental Disorders volume 38*, 1462-1473.
- Keenan, M., Dillenburger, K., Röttgers, H. R., Dounavi, K. & all, a. (2015). Autism and ABA: The Gulf Between North America and Europe. *Review Journal of Autism and Developmental Disorders volume 2*, 167-183.
- Kossevka, J., Preece, D., Lisak, N., Troshanska, J. & all, a. (2019). TRAINING NEEDS IN THE FIELD OF AUTISM BY CONTEMPORARY POLISH TEACHERS IN THE CONTEXT OF INTERNATIONAL ASD-EAST PROJECT. *SOCIAL WELFARE INTERDISCIPLINARY APPROACH 1(9)*, 82.
- Laarhoven, T. V. (2010, October 8). *A Comparison of Picture and Video Prompts to Teach Daily Living Skills to Individuals With Autism*. Retrieved from Sage Journals: <https://journals.sagepub.com/doi/10.1177/1088357610380412>
- McAlister, K. (2010). The ASD Friendly Classroom – Design Complexity, Challenge & Characteristics. *Design Research Society International Conference 2010* (pp. 1-18). Montreal: Paper presented at Design Research Society International Conference 2010.
- Mcallister, K. & Solan, S. (2017). Designed by the pupils, for the pupils: an autism-friendly school. *British Journal of Special Education 43(4)*, 330-357.
- Preece, D., Listiakova, I. L., Stoshic, J., Lisak, N., Troshanska, J., & Kossevka, J. (2019, June 15). *ASD-EAST: Empowering Teachers to Work with Autism in Eastern Europe*. Retrieved from Research gate: [https://www.researchgate.net/publication/333917734\\_ASD-EAST\\_Empowering\\_Teachers\\_to\\_Work\\_with\\_Autism\\_in\\_Eastern\\_Europe?channel=doi&linkId=5d0c998c299bf1547c716dce&showFulltext=true](https://www.researchgate.net/publication/333917734_ASD-EAST_Empowering_Teachers_to_Work_with_Autism_in_Eastern_Europe?channel=doi&linkId=5d0c998c299bf1547c716dce&showFulltext=true)
- Schendel, D. E. & Thorsteinsson, E. (2018, November 6). *Cumulative Incidence of Autism Into Adulthood for Birth Cohorts in Denmark*. Retrieved from PubMed.gov: <https://pubmed.ncbi.nlm.nih.gov/30398592/>
- Troshanska, J., Nikolovska, A. P., Listiakova, I. L., Lisak, N., Kossevka, J., Stosic, J. & Preece, D. (2019). Developing training for teachers to support the inclusion in education of pupils with autism spectrum disorder in Eastern Europe and the Balkans. „70 ГОДИНИ – ОРГАНИЗИРАНА ЕДУКАЦИЈА, РЕХАБИЛИТАЦИЈА И ВРАБОТУВАЊЕ НА ЛИЦА СО ПОПРЕЧЕНОСТ ВО РЕПУБЛИКА МАКЕДОНИЈА“ (pp. 53-58). Bitola: Sojuz na specijalni edukatori i rehabilitatori.
- Wing, L. & Gould, J. (1979). Severe impairments of social interaction and associated abnormalities in children: Epidemiology and classification. *Journal of Autism and Developmental Disorders, 9 (1)*, 11-29. doi:<https://doi.org/10.1007/BF01531288>
- [www.autism.org.uk](http://www.autism.org.uk). (n.d.).
- [www.webmd.com](http://www.webmd.com). (n.d.).