

Influence of Generalist Teachers' Views on Training and Experience in Inclusive Education of Students with Autism Spectrum Disorders

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ABSTRACT

The purpose of this study is to survey and analyze the data on teachers' opinions, experiences, and preparation in inclusive teaching with respect to learners with autism spectrum disorders. Convenience sampling was carried out to recruit 76 teachers from Valceresio secondary school, who were administered an ad hoc questionnaire comprising 18 items. Through Chi Square analysis, with the help of the SPSS program, a check was made for the possible presence of associations between variables. The data showed that from the perception of their own training, 59.2% responded that they were trained for the required needs. In the between-relationship analysis, it is found that the variables influencing the perceived adequacy of teachers' preparation in planning inclusive activities for people with autism spectrum disorders relate to knowledge of such disability, presence of specific training on the disability, and previous experience ($p < 0.003$). In addition, teachers who are informed about this disability are more likely, in the case of a student in the classroom with autism spectrum disorders, to plan and propose inclusive activities themselves, while the remainder would refer to the support teacher ($p < 0.008$). The study shows how teachers consider training and experience to be of considerable importance in teaching aimed at the inclusion of individuals with autism spectrum disorders. It also points to the need to work on teacher training, as their perceptions influence how they work to promote school inclusion.

Key words: formation, disability, inclusive teaching, teacher, questionnaire

Introduction

Inclusive education represents an educational approach that aims to ensure meaningful learning opportunities for all students, regardless of their abilities or disabilities^{1,2}. Within this context, motor and sports sciences play a crucial role in promoting inclusiveness, as they provide fertile ground for developing motor, social and cognitive skills in an environment that values diversity³. Through physical activity and sports, educators can adapt lessons to meet the specific needs of students, promoting a sense of belonging and active participation⁴. In this context, exercise science and sports not only promote physical health, but also become a vehicle for teaching important principles of inclusiveness, mutual respect and cooperation, creating an educational environment that embraces diversity as a resource.

School inclusion in Italy has gone through several stages over the years. In 1977, Law 517/77 represented a sig-

nificant step by introducing the concept of school inclusion for students with disabilities⁵. However, it was with Law 104/92, known as the Disability Law, that the Italian approach to inclusion underwent a more radical transformation. This law enshrined the right to education for all students, promoting the integration of students with disabilities into mainstream schools through the adoption of individualized support measures. In 2009, Law 170/2010 further consolidated the principles of inclusion⁶, emphasizing the centrality of the design of personalized educational interventions. The goal was to ensure an educational pathway that meets the diverse needs of students, promoting active participation and the enhancement of each individual resource. Despite legislative and enforcement progress, there are ongoing challenges in ensuring effective school inclusion. Students often continue to experience segregated educational placements that prohibit access to the school setting of general education⁷. Teachers,

invested with the role of pioneers in education, must devise an instructional approach that is no longer based on abstract equality, but on equity, ensuring that everyone has the opportunity to pursue set goals, adapting the rules to individual ability and functioning. Since all students, regardless of disability status, benefit from and should have access to school-level standards and opportunities in general education classrooms, inclusive education must be promoted. One way to help students with disabilities have greater access to the general education environment and curriculum is to improve teacher's training toward the topic of inclusion⁸. Very often teachers do not receive adequate training to be able to transform theoretical knowledge into practical applications^{9,10}. Certainly, support teachers have more preparation than generalist teachers in planning and adapting course content for students with disabilities. To promote inclusive education, it is critically important to investigate the views of all teachers on their preparation¹¹ to support and collaborate with students with disabilities in inclusive settings.

As research is limited in this area, it would be useful to investigate teachers' perceptions of their preparation for and experience with inclusive teaching¹², referred specifically to autism spectrum disorders. It poses a significant challenge in school settings, as it involves various areas of development, including social, communicative and behavioral aspects. Also included in this spectrum is Asperger's syndrome, which was previously considered a form of autism; however, in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), published in 2013, the term "Asperger's syndrome" was removed. The main difference between autism spectrum disorders and Asperger's syndrome used to lie in the preservation of language and the absence of significant cognitive delays in Asperger's syndrome. However, now, in the context of DSM-5, all previously distinct conditions, including Asperger's syndrome, are considered under the common label of autism spectrum disorders. This approach reflects a broader and more inclusive view of the concept of autism, recognizing the diversity of clinical manifestations and individual challenges that may be present within that spectrum. Indeed, students may manifest notable individual differences in their abilities and challenges, requiring individualized approaches. In the classroom, the presence of sensory stimuli, complex social interactions, and variations in daily routines can be particularly problematic for students with autism^{13,14}. Therefore, it is crucial to implement teaching strategies and environments that promote inclusion and respect the specific needs of students with autism spectrum disorders in order to ensure effective interventions for them, which, however, largely depend on the preparation and motivation of teachers¹⁵. Adapting teaching methodologies, using visual aids, creating structured environments, and promoting positive social interactions can help facilitate the learning and well-being of students with autism spectrum disorder within the school setting^{16,17}.

The problem noted is that there is little training and experience on the part of teachers with respect to inclusive teaching applied to learners with autism spectrum disorders. The purpose of this study is to survey and analyze the data on teachers' opinions, experiences, and preparation in inclusive teaching with respect to students with autism spectrum disorders.

Materials and Methods

Study participants

Convenience sampling was conducted to recruit 90 teachers from Valceresio secondary school in the town of Bisuschio, in the Lombardy region of northern Italy, of whom only 76 signed up. Informed consent was obtained from all the participants.

Study design

The design of the study is exploratory in that it aims to investigate the perceptions of teachers in a secondary school regarding their teaching experience and the adequacy of their training in planning inclusive teaching for people with autism spectrum disorders, both in general terms and specific to physical education. With the study we focus on the contextual situation regarding school inclusion in the secondary school examined, as well as possible variables that influence teachers' perceptions in planning inclusive activities for people with autism spectrum disorders. This is structured with the formulation, application, and analysis of a questionnaire.

An ad-hoc questionnaire, including 18 items, was prepared with Google Form and administered by e-mail to the teachers of the institute. The questionnaire aims to get a comprehensive overview of participants' personal and work-related aspects and their knowledge on the topic. Starting from general information such as gender identity, age, educational qualification and years of experience, it was preferred to ask them to express their opinion on their knowledge and training as well as on the inclusiveness of the institute regarding disability and especially towards the reception of pupils with autism spectrum disorders. A detailed description is shown in Table 1.

Statistics

Descriptive statistics were used to summarize the data in frequency and percentage. Chi Square analysis was performed to check for associations between variables. The significance level was set at $p < 0.05$. Data were analyzed using the Statistical Package for Social Science software (IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY).

Results

A detailed visualization of the results of the questionnaire responses is shown in Table 2. With question Q1

TABLE 1
ITEMS OF THE QUESTIONNAIRE.

No. Questions	Answers
1 What gender do you belong to?	a) Male b) Female c) Other
2 What is your age range?	a) 18-30 b) 31-40 c) 41-50 d) +51
3 How long have you been working as a teacher?	a) 1-2 years b) 3-5 years c) 5-10 years d) +10 years
4 The discipline I teach is consistent with a course of study:	a) Humanistic b) Scientific-Technological c) Practical-Laboratory d) Sportive e) Other
5 Have you had direct experience in teaching students with disabilities?	a) Yes b) No
6 Have you received specific training to teach students with disabilities?	a) Yes b) No
7 What is the most problematic area identified in the educational and inclusive context?	a) Communicative function b) Relational function c) Behavior d) Learning ability e) Interaction and exclusion in the class group
8 Does your school have functional equipment and instrumentation for the purpose of inclusive education?	a) Yes b) No
9 How do parents contribute to the teaching-educational function of pupils?	a) They collaborate with educators b) They collaborate with other specialists c) They participate in their child's evaluation process d) They take an interest in educational interventions e) They do not contribute in any way
10 Are you familiar with autism spectrum disorder?	a) Not at all b) A little c) Fairly d) Very much
11 Do you know about Asperger's syndrome?	a) Not at all b) A little c) Fairly d) Very much
12 How would you act if your class had a pupil with autism spectrum disorder, affected by then Asperger's syndrome?	a) I would inquire, trying to understand his aptitude, passion, and difficulties. b) Continuously observing his behaviors c) Not knowing the disorder well, I would try to draw the right information, working closely with the support teacher d) I have never had a student with such a disorder
13 Do you feel that your training regarding management on autism spectrum disorder is adequate and sufficient?	a) Not very much b) Fairly, but could be further enriched c) Yes, it is more than adequate
14 What facilitation and/or educational environment does the school system provide for a pupil with autism or emotional and behavior disorder?	a) Materials and training courses b) Specific locations for conducting activities c) Teaching tools d) Support teachers
15 Do you think that the participation of students with disabilities in sports activities has a positive impact on their social and physical development?	a) Yes b) No
16 To the best of your knowledge, does your school offer inclusive sports programs for students with disabilities?	a) Yes b) No
17 What types of sports activities or inclusive programs are available at your school/institution? (You may select more than one option).	a) Football b) Basket c) Swimming d) Athletics e) Running f) Volleyball g) Other (to specify)
18 To the best of your knowledge, does your school provide the necessary resources to support the participation of students with disabilities in sports activities?	a) Yes b) No c) I never inquired

regarding gender, 71.1% fall into the women category, 28.1% into the men category. Next, with question Q2 age group, of distinguish 4 groups, 27.6% are in the over-50 group, 3.9% in the 18–30 group, 36.8% in the 31–40 group and 31.6% in the 41–50 group. Question Q3 analyzes the working time of teachers, returning the following data: 43.4% have been working for more than 10 years, 10.5% for 1–2 years, 25% in the 3–5 year range and 21.1% in the 5–10 year range. Proceeding with Q4 'The discipline I teach is consistent with a course of study:', 11.8% answered other, 9.2% answered Practical-Laboratory, 25% answered Scientific-Technical, 3.95 Sports and 50% answered with Humanities. In question Q5 'Have you had direct experience in teaching students with disabilities?' 11.8% answered no and the remaining 88.2 answered yes. Regarding question Q6 'Have you received specific training to teach students with disabilities?' 40.8% answered no and the remaining 59.2% answered yes. Next, in question Q7, 'What is the most problematic area identified in the educational and inclusive context?', 10.5% answered learning ability, the same percentage answered behavior, 14.5% answered communication function, 36.8% answered relational function, and finally 27.6% answered interaction and exclusion in the class group. To question Q8 'Does your school have functional equipment and instrumentation for the purpose of inclusive education?' 13.2% answered no and the remaining 86.8% answered yes. Proceeding with question Q9 'How do parents contribute to the teaching-educational function of pupils?' 9.2% answered They collaborate with other specialists, 35.5% answered they collaborate with educators, 3.9% answered They do not contribute in any way, 9.2% answered with They participate in their child's evaluation process and the remaining 42.1% answered They take an interest in educational interventions. Question Q10 'Are you familiar with autism spectrum disorder?' breaks down the percentages into 46.1% somewhat, with 22.4% very much, 1.3% not at all and the remaining 30.3% with not at all. Question Q11 'Do you know about Asperger's syndrome?' 46.1% answered quite, 14.5% with very, 3.9% with not at all and the remaining 35.5% with not at all. To question Q12 'How would you act if your class had a pupil with autism spectrum disorder, affected by then Asperger's syndrome?' the responses found 60.5% for I would inquire, trying to understand his aptitude, passion and difficulties; 25% for I don't know the disorder well, I try to draw the right information, working closely with the support teacher; 6.6% I have never had a pupil with such a disorder and 7.9% for I continuously observe his behaviors. Subsequently to question Q13 'Do you feel that your training regarding management on autism spectrum disorder is adequate and sufficient?' 60.5% answered Quite a lot, but it could be further enriched; 28.9% answered not very much and 10.5% yes, it is more than adequate. To question Q14 'What facilitation and/or educational environment does the school system provide for a pupil with autism or emotional and behavior disorder?' the answers were divided with 76.3 % supportive teachers; 17.1% specific places for conducting activities; 2.6% materials and training courses

and 3.9% instructional tools. Continuing with question Q15 'Do you think that the participation of students with disabilities in sports activities has a positive impact on their social and physical development?' 100% answered yes. Proceeding with question Q16 'To the best of your knowledge, does your school offer inclusive sports programs for students with disabilities?' 44.7% answered no and the remaining 55.3% answered yes. In conclusion, with question Q18 'To the best of your knowledge, does your school provide the necessary resources to support the participation of students with disabilities in sports activities?' 15.8% answered no; 48.7% I have never inquired; and 35.5%. A detailed description of the institute's proposed inclusive activities is shown in Figure 1.

The Chi Square test found significant associations. A relationship emerged between the behavior adopted when a pupil with autism spectrum disorders was present in the classroom and the knowledge of such disorders/Asperger's syndrome. A detailed description is shown in Table 3.

Other reports include the adequacy of one's training to handle autism spectrum disorders and the presence of specific training received, previous teaching experience, and knowledge of autism spectrum disorders/Asperger's Syndrome. A detailed description is shown in Table 4.

Discussion

The results of the present work showed that the contextual situation regarding school inclusion in the surveyed high school is positive both in general terms and specific to the area of exercise and sports science. Variables influencing the perceived adequacy of teachers' preparation in planning inclusive activities for people with autism spectrum disorder concern knowledge of this disability, the presence of disability-specific training, and prior experience. Moreover, teachers who are informed about this disability are more likely, in the case of a student in the classroom with autism spectrum disorder, to plan and propose inclusive activities themselves, while the remainder would turn to the support teacher.

The data confirm the presence of the role of women within educational institutions, which has become a phenomenon of particular educational importance, undergoing social and cultural transformation over the years and breaking down what, by now, is an outdated stereotype and thought such as "women know how to take care"¹⁸. This change has brought greater diversity of perspectives and expertise within educational institutions, providing positive role models for pupils and promoting equality in educational opportunities¹⁹. As for age, generational diversity within the teaching staff can be understood and, conversely, any succession or training needs can be identified and strategies adopted to ensure a dynamic and sustainable learning environment.

Regarding work experience as a teacher, the data provide a clear and immediate overview of the distribution of teaching staff by years of service. 43.4 % see themselves

as teachers with decades of experience, capable and meritorious in managing a classroom group, from an inclusive perspective, and in contributing to newly hired colleagues without experience.

Finally, the course of study offers an illuminating glimpse into the educational diversity within the institution, bringing out different academic backgrounds, highlighting the wealth of educational backgrounds present. Despite the prevalence of teachers with degrees in the humanities at 50 %, we would like to point out the 3.9% of teachers with degrees in sports disciplines. Surely such diversity can be valuable in adapting teaching strategies, implementing targeted professional development programs and promoting an inclusive and respectful culture of diverse academic experiences within the educational environment²⁰, although it is not possible to statistically analyze differences in perceptions and knowledge among faculty from different university backgrounds due to low representation.

88.2% of the teachers have previously had experience with students with disabilities; however, only 59.2% reported that they had undergone specific training in the proper and efficient management of students with disabilities, highlighting possible gaps in training^{21,22}. The most problematic area identified in the educational and inclusive environment, based on their own experience, appeared to be relationships (36.8%) followed by interaction and exclusion in the class group (27.6%). These difficulties, if not adequately addressed, spill over into the formation of tomorrow's citizen as a member of society, and it is therefore useful to improve the inclusive educational environment, although the school institution has specific functional tools and equipment for inclusive teaching²³.

The second part discusses teachers' knowledge and perceptions of autism spectrum disorder, and in particular, of what was then considered as Asperger's syndrome in order to best apply inclusive teaching. If they had a student with autism spectrum disorder (or affected by the then "Asperger's syndrome") in their class, most teachers (60.5%) would inquire, trying to understand the student's aptitudes, passions and difficulties, while 25% would seek close collaboration with the support teacher. Regarding whether their own training regarding management on autism spectrum disorder is adequate and sufficient, 60.5% responded that it is quite adequate and sufficient, but could be further enriched, while 28.9% not so much. It becomes useful to work on this aspect, that is, in case of the presence of students with specific disabilities, to organize meetings to inform teachers about the activities and equipment available in order to organize inclusive teaching^{24,25}. From the associative analysis, it was found that most of those who know little/not at all about autism spectrum disorder and Asperger's syndrome would rely on the support teacher in case there was a student with such a disability in their class, in contrast to those who know

enough/very much, who would try to inquire about the student, identifying his or her aptitudes passions and difficulties. Most of those who consider their training in dealing with autism spectrum disorder to be adequate enough stated that they have received specific training in teaching students with disabilities, have had direct experience in teaching students with disabilities, and know enough about autism spectrum disorder/former Asperger's syndrome. The majority of those who considered their training to handle autism spectrum disorder not very adequate stated that they had not received specific training to teach students with disabilities, had direct experience in teaching with students with disabilities, and knew little about autism spectrum disorder/former Asperger's syndrome.

Conclusion

The study highlights the need to work on teacher training, as their perceptions influence how they work to promote school and sports inclusion. Sports play a key role in promoting the overall well-being of students, including those with disabilities, and particularly those with autism. Their participation in physical activities helps to bring benefits not only to their physical health, but also to the broader concept of psycho-social well-being, related to the emotional sphere. Through inclusive sports programs, pupils have the opportunity to develop positive and meaningful relationships, improving their social skills and experiencing their sense of belonging individually and collectively. If this is true for all pupils, then we cannot but reinforce this concept for pupils with autism spectrum disorder, having the focus on creating a more aware and welcoming school environment.

The continuous challenges, which should lead to successes, cannot occur if there is no continuous and constant training behind it from teachers, the main pioneers of inclusion, in order to effectively manage the individual needs of students, especially for the fragile ones. Creating an inclusive environment requires continuous and coordinated efforts by all stakeholders involved in the educational process. Such an environment will need to respect, support and encourage the diversity or, better said, uniqueness, of everyone including pupils with disabilities, whether physical or mental. This research provides a solid foundation for future developments in inclusive educational practices, promoting a comprehensive approach to student well-being through empowerment, understanding and inclusion. The strength of the present work is the representativeness of the sample relative to the institution surveyed; however, there is a need to conduct a further study by extending the research to other institutions in northern Italy, to try to recruit more physical education and sports teachers, and investigate their perceptions regarding sports inclusion.

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UTJECAJ MIŠLJENJA NASTAVNIKA NA OBUKU I ISKUSTVO U INKLUZIVNOM OBRAZOVANJU UČENIKA S POREMEĆAJIMA IZ AUTISTIČNOG SPEKTRA

SAŽETAK

Svrha ovog istraživanja je istražiti i analizirati mišljenja, iskustva i pripreme nastavnika u inkluzivnoj nastavi koja uključuje učenike s poremećajima iz spektra autizma. U istraživanju je korišten prigodni uzorak od 76 nastavnika iz srednje škole Valceresio, Italija, koji su ispunili ad hoc upitnik koji se sastojao od 18 stavki. Chi Square analizom, uz pomoć programa SPSS, izvršena je provjera moguće prisutnosti povezanosti između varijabli. Podaci su pokazali da je 59,2% nastavnika smatralo da su, s obzirom na vlastitu izobrazbu, osposobljeni za rad s takvim učenicima. U analizi međuodnosa varijabli utvrđeno je da se varijable koje utječu na percipiranu primjerenost pripreme nastavnika u planiranju inkluzivnih aktivnosti za osobe s poremećajima iz autističnog spektra odnose na poznavanje takvog invaliditeta, prisutnost specifične obuke o poremećaju i prethodno iskustvo ($p < 0,003$). Osim toga, nastavnici koji su upoznati s ovim invaliditetom vjerojatnije će, u slučaju učenika u razredu s poremećajima iz autističnog spektra, sami planirati i predlagati inkluzivne aktivnosti, za razliku od drugih nastavnika koji bi se obratili za pomoć specijalno obučanim nastavnicima ($p < 0,008$). Studija pokazuje kako nastavnici smatraju da su obuka i iskustvo od velike važnosti u nastavi usmjerenoj na uključivanje osoba s poremećajima iz spektra autizma. Također ukazuje na potrebu rada na obuci nastavnika, budući da njihova percepcija utječe na način na koji rade na promicanju inkluzije u školi.