

STUDENTS WITH AUTISM SPECTRUM DISORDER IN SPECIAL AND GENERAL EDUCATION SCHOOLS IN FLANDERS

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Introduction

In the past, students with disabilities were mainly educated in special schools, because segregation of persons with disabilities in general was a given fact (Kavale and Forness, 2000). Nevertheless, the educational inclusion of students with disabilities has been a hotly debated topic for decades (Harrower, 1999). Theoretical arguments concerning social development and legal issues related to the civil rights movement, have largely given entrance to the idea of inclusion of students with disabilities in general education classrooms (Harrower and Dunlap, 2001). Inclusion for students with disabilities has been strongly supported by some researchers and practitioners in both general and special education (Mamlin, 1999; Brucker, 1994). According to its advocates,

the benefits of inclusion are: increased expectations by teachers of the learning potential of the included students; behavioural modelling on normally developing peers; more learning; increased self-esteem; more accepting attitudes on the part of the peers; and less isolation and stigma for disabled students and their families (Banerji and Dailey, 1995; Mesibov and Shea, 1996; Peetsma *et al.*, 2001). Other researchers are more sceptical about inclusion of all students with disabilities. They suggest that less severely handicapped students with fewer behavioural problems are the ones who typically benefit most from more integrated settings, while many students with more severe disabilities would benefit from more segregated and specialised programmes, considering their very specific needs (Carlberg and Kavale, 1980;

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Fuchs and Fuchs, 1995; Madden and Slavin, 1983; McLeskey *et al.*, 1999; Waldron and McLeskey, 1998).

Some researchers (e.g. Harrower and Dunlap, 2001; Kasari *et al.*, 1999; Mesibov and Shea, 1996; Myles *et al.*, 1993) assessed inclusive educational programmes for students with Autism Spectrum Disorder (ASD) in particular, but most research on inclusive education concerns students with other disabilities than ASD.

Autism is characterised by severe qualitative impairments in social interaction and communication and restricted, repetitive and stereotyped patterns of behaviour, interests and activities (DSM IV-TR; American Psychiatric Association, 2000). In this article the term ASD will be used to refer to a broader categorisation of disorders related to autism. ASD includes autism, Asperger syndrome and pervasive developmental disorder (PDD) - not otherwise specified. The latter two disorders show some but not the full complement of impairments necessary to meet the criteria for autism (Wing, 1996). The diagnostic label ASD is preferred in Flanders because the validity of Asperger syndrome as a distinct diagnostic category is disputed (for an overview: see Macintosh and Dissanayake, 2004). Estimates of prevalence rates range from 10 in 10,000 for autism to 60 in 10,000 for ASD (Fombonne, 2003).

Because of the very nature of the disorder, many students with ASD seem to require an alternative educational approach than that applied for students without ASD. Where for instance verbal explanations, gestures, the use of abstract concepts, modelling and social rewarding may be beneficial educational techniques for other students, this way of instructing may confound students with ASD (Mesibov and Shea, 1996; Panerai *et al.*, 2002). While there is considerable evi-

dence that children with disabilities benefit from having contact with less disabled or 'sound' peers, the nature of ASD itself could minimise the influence of the other children present in the classroom as role models (Mesibov, 1999).

Not just the researchers seem to have doubts about the beneficial outcome of educating students with ASD in a general education environment. Kasari *et al.* (1999) conducted a study which examined the effect of the child's diagnosis (autism vs. Down syndrome) on parental perceptions of inclusion of their own disabled child. Parents of children with Down syndrome were more likely to accept inclusion for their children, while parents of children with autism had reservations about educational inclusion (both for academic and non-academic activities). Over half of the parents thought that their children's current educational needs could not be adequately met in inclusive schools. Parents of children with autism were significantly more likely to regard the teachers as being the main advantage of their child's current special education. Above all, the specialist training of the teachers in special schools and the specialised teaching approach were decisive. General education teachers admit they lack the necessary skills, training, time and resources to implement inclusive education for children with ASD in their classroom (Scruggs and Mastropieri, 1996). A study by McGregor and Campbell (2001) shows that only a minority of general education teachers believes that students with ASD should be integrated.

Students with autism or a related disorder appear to learn best in highly structured environments with lots of visual support and few distractions (Schreibman, 1988; Peeters, 2000). The best environments are those where learn-

ing can occur individualised and skill-oriented, where predictability exists and where antecedent conditions and consequent events responsible for erratic responding are identified and managed (Zager *et al.*, 1999). Therefore, and for reasons mentioned before, specialised instructional techniques and learning environments are often recommended for these students.

Despite the fact that researchers, parents and practitioners have doubts about the beneficial outcome of general education for children with ASD, we agree with Mesibov (1999) that it is not the single classroom model that is most important in choosing the best educational option for students with ASD, but the quality of the instruction delivered in that classroom.

In the present study we investigated 1) to what extent special and general education schools in Flanders (the Dutch speaking part of Belgium) make an effort to deliver high-quality education to students with ASD and adapt the learning environment to the unique needs of these students, and 2) the accessibility of these schools for students with ASD.

The Belgian special school system

Although special education started in the last part of the 19th century in Belgium, it took until 1970 before the Special Education Law recognised these special schools as an independent and specific form of education for students with various kinds of disabilities. There are 8 school types for special education in Belgium, designed for the different target group. Type 1 provides education for students with mild mental disabilities, type 2 for students with moderate and severe

mental disabilities, type 3 for students with behavioural problems, type 4 for students with physical disabilities, type 5 for students who are hospitalised, type 6 for students with visual disabilities, type 7 for students with auditory disabilities and severe language problems and finally, type 8 for students with learning disorders. Despite the well-developed network of special schools in Belgium, there is no formalised special school type for students with ASD. As a result, students with ASD are scattered over different types of special schools, mainly type 1, type 2, type 3 and type 7. Completely dependent on the motivation of the schools, some special schools retrain and apply for professional help to increase their expertise in educating students with ASD, while other special schools approach students with ASD the same way as students with any other disability. In other words, providing appropriate ASD-specific education in Belgium is a case of voluntarily restricting expenditure in other parts of the school for the benefit of a growing expertise in ASD-specific education.

Besides this fully segregated form of education in special schools, the Belgian school system allows students with disabilities to go to a general education school, possibly with support from a teacher of a special school. In this integrated form of education, students receive 2 to 4 hours support weekly from the special school. Despite the fact that this - so called - integrated education has been provided for by law since 1986, it is only during the last few years that students with ASD are actually applying for this form of support in general education schools.

Method

Data collection

To identify current levels of educational support for students with ASD in special and general education schools in Flanders, a questionnaire was compiled, based upon a review of the literature about service evaluation (Nesbitt, 2000; Sperry *et al.*, 1999). The questionnaire covered six main categories (for detailed information, see TABLE I).

The data gathered from the questionnaires were supplemented with information obtained from in-depth interviews we carried out with key professionals in 10 special schools. The same topics as the ones in the questionnaire were discussed in more depth. The key professionals we interviewed were co-ordinators responsible for the education of students with ASD. Two inclusion criteria were used to select a random sample of 10 special schools that would be contacted to participate in the interviews: firstly, the schools

TABLE I
Detailed information about the questionnaire

Category	Items in the questionnaire
1. Descriptive information about the school	1. Type of school 2. Capacity of the school 3. Number of students with diagnosed/suspected ASD in the school 4. Number of students (with/without ASD) on waiting list 5. Number of enrolments of students with ASD refused annually
2. Diagnosis of ASD	6. Diagnostic label of students with ASD in the school
3. Educational resources for students with ASD	7. Availability of ASD-specific approach in the school 8. Availability of one-to-one tutoring for students with ASD 9. Availability of alternative forms of communication for students with ASD (instead of spoken language) 10. Adaptations in the organisation of the physical environment for students with ASD 11. Availability of therapy for students with ASD 12. Availability of external support for students with ASD within the school
4. Involvement of the parents	13. Frequency of contact with the parents of students with ASD 14. Type of contact with the parents of students with ASD
5. General knowledge and training about ASD	15. Evaluation of ASD-specific knowledge regarding causes and prevalence, diagnostics, prognosis, assessment, and appropriate education and support 16. Availability of ASD training courses
6. Future needs and expectations	17. General appraisal of delivered education and support for students with ASD 18. Prior needs to optimise education and support for students with ASD

had to mention that they adapt their education programme to the needs of students with ASD and secondly, more than 10% of the students had to be diagnosed with ASD. The 10 interviews, each lasting about an hour and a half, were audio-recorded and later transcribed verbatim. The data obtained from the interviews were analysed under the main headings to detect patterns of opinion and to illustrate the views and experiences of the respondents.

Participating schools

All 277 special schools in Flanders, and 142 general education schools where students with ASD were registered, received the questionnaire by mail. The response rate of the special schools amounted to 62% (68% primary schools and 32% secondary schools). The response rate of the general education schools was 49% (79% primary schools and 21% secondary schools).

A drop-out analysis was carried out by telephone for a sample of 39 special schools that did not return the questionnaire. During the telephone conversation we inquired about the number of students in the school with a diagnosis of ASD. The percentage of schools that had students with a formal diagnosis of ASD was 79% and 74% for participating and non-participating schools respectively ($\chi^2(1) = 0.414, p = .524$). The assumption that only special schools with students with ASD would be likely to fill in the questionnaire proved to be wrong.

In 92% of all special schools involved in this study, students with formally diagnosed or suspected ASD were enrolled in the school. Given the focus of this study, the remaining 8% of schools that had no students with ASD were excluded from

further analyses. Since in this study only the general education schools that had students with ASD on their register were included, this delineation did not need to be made for the general education schools.

TABLE II shows that students of the whole range of ASD are represented in the special and general education schools that finally were included in the analyses.

Results

TABLE III shows the number of students with formally diagnosed or suspected ASD in special and general education schools in Flanders.

As the table indicates, there are marked differences between special and general education schools regarding the size of the school population and the means of the number of students with ASD; there being a larger proportion of students with ASD in special schools. Given this concentration of students with similar impairments in special schools, one would expect the special schools to put considerably more effort into the adaptation of education for students with ASD compared to general education schools. However, the results of our study concerning ASD-specific adaptation indicate that general education schools also make an effort to provide properly adapted education for students with ASD.

Adaptations in special and general education schools for students with ASD

Of all the special schools where students with (suspected) ASD were enrolled, 44% mentioned that they pay

special attention to the unique needs of these students. TABLE IV shows that the special schools with an ASD-specific approach put considerably more effort into adapting the educational environment to the needs of students with ASD than other special schools and general education schools. This special attention consists mainly of one-to-one tutoring, alternative forms of communication with the student with ASD (instead of spoken language) and an adapted organisation of the physical environment. However, there is not much difference between the general education schools and special schools without ASD-specific education as far as adapting the educational environment to

the needs of students with ASD is concerned.

In line with the extensive adaptations in special schools with ASD-specific education, it is to be expected that these schools put considerable effort into adapting their programme to the needs of students with ASD. Consequently, it is not surprising that these schools appeal more than other special schools to staff of the residential part of the school ($\chi^2(1) = 7.71$, $p = .005$) and to volunteers ($\chi^2(1) = 14.76$, $p = .000$) in supporting students with ASD. During the interviews conducted with some key professionals in special schools, they reflected that the organisation of ASD-specific education would

TABLE II
Percentage of (participating) general education schools and special schools where students with a diagnostic label of autism, Asperger syndrome, pervasive developmental disorder-not otherwise specified (PDD-NOS) and Autism Spectrum Disorder are enrolled

	General education school (%)	Special school (%)
Autism	38	58
Asperger Syndrome	33	24
PDD-NOS	1	24
Autism Spectrum Disorder	58	89

TABLE III
Means (M) and Standard Deviations (SD) of the total school population, of the number of students with ASD and of the number of students with suspected ASD in general education schools and in special schools

	General education school		Special school	
	Primary	Secondary	Primary	Secondary
Total School Population				
<i>M</i>	190.16	653.09	140.00	138.90
<i>SD</i>	127.94	318.94	79.52	96.62
Students with ASD				
<i>M</i>	1.69	2.27	8.86	10.33
<i>SD</i>	1.59	1.27	11.03	14.48
Students with suspected ASD				
<i>M</i>	1.29	0.73	4.22	3.60
<i>SD</i>	1.46	1.42	4.99	4.15

hardly be feasible without the support of the staff of the residential part of the school, the staff from other classes and volunteers. This extra support is mainly needed during less structured times (e.g. lunch, playtime, extramural activities etc.). Furthermore, with respect to learning activities, professionals of schools with ASD-specific education frequently men-

tioned that they have to economise on personnel and space in other classes for the benefit of classes with ASD-specific education (i.e. in ASD-specific classes there are less students in a relatively larger classroom and relatively more teachers than in the other classes).

Although special schools without ASD-specific education and general edu-

TABLE IV
Differences between special and general education schools in ASD-specific adaptations

	Special schools with ASD-education (%)	Special schools without ASD-education (%)	General education schools (%)	$\chi^2(2)$	<i>p</i>
One-to-one tutoring	49 ^a	11 ^b	4 ^b	47.99	.000
Alternative communication					
Written words	83 ^a	53 ^b	33 ^b	35.32	.000
PECS (Picture Exchange Communication System)	94 ^a	57 ^b	59 ^b	29.03	.000
Drawings	64 ^a	46 ^a	30 ^b	15.95	.000
Photographs	77 ^a	40 ^b	14 ^c	55.80	.000
Objects	58 ^a	13 ^b	7 ^b	56.10	.000
Speaking with support of gestures	49 ^a	14 ^b	0 ^c	53.66	.000
Task analyses	75 ^a	31 ^b	20 ^b	48.61	.000
Daily schedule	96 ^a	80 ^b	74 ^b	12.17	.002
Diary	74	70	54	6.71	n.s.
Week schedule	84 ^a	64 ^b	61 ^b	10.00	.007
Year schedule	58 ^a	30 ^b	24 ^b	19.27	.000
Scheme with photos of present teachers	81 ^a	19 ^b	10 ^b	90.44	.000
Organisation of the environment					
Modifications in classroom	96 ^a	57 ^b	21 ^c	78.56	.000
Modifications in dining hall	36 ^a	3 ^b	4 ^b	40.16	.000
Modifications in play ground	33 ^a	7 ^b	6 ^b	25.86	.000
Specially designed materials	81 ^a	21 ^b	19 ^b	72.04	.000
Adapted media	61 ^a	26 ^b	11 ^b	40.93	.000

NOTE: Percentages in the same row that do not share superscripts differ significantly at $p < .01$ using a $\chi^2(1)$ -test.

The superscript *b* indicates "significantly different" from the *a* and *c* value; *c* indicates a significant difference from the *a* and *b* value. Two values with the same superscript indicate no significant difference.

cation schools do not differ in communication and environment adaptations, professionals of the latter mentioned much more often that they seek external support for the education of students with ASD ($\chi^2(1) = 19.38, p = .000$).

Parental involvement

Similarly, comparisons of parental involvement revealed significant differences between special schools with and without ASD-specific education ($F(1,136) = 25.94, p = .000$). The group differences indicated parental involvement being higher for the group of special schools with an ASD-specific approach. When comparing general education schools with special schools without ASD-specific education, it is noticeable that there is much less parental involvement in the latter group of schools than in the general education schools ($F(1,137) = 6.41, p = .012$).

Autism-specific knowledge and training

The evaluation of the autism-specific knowledge of the staff was made by measuring five categories of knowledge on a 5-point Likert scale: a) causes and prevalence of ASD, b) diagnostics of ASD and appropriate diagnostic instruments, c) assessment of persons with ASD, d) appropriate education and support of persons with ASD and finally, e) the prognosis of ASD.

TABLE V shows that the average scores of autism-specific knowledge of the school head, the paramedics, the teachers and the assistant teachers were significantly higher in special schools with ASD-specific education than in the other special schools. This significant difference did not apply to psychologists/pedagogues. Furthermore, there were no significant differences between general education schools and special schools without ASD-specific approach as regards ASD-specific knowledge of the school head and the teachers. Both groups

TABLE V
The evaluation of autism-specific knowledge of the staff in special and general education schools

	Special schools with ASD-education M (SD)	Special schools without ASD-education M (SD)	General education schools M(SD)	df	F	p
School Head	3.04 (.81) ^a	2.34 (.69) ^b	2.55 (.69) ^b	2,213	17.361	.000
Paramedics	3.35 (.76) ^a	2.60 (.77) ^b	-	1,139	33.744	.000
Psychologists/ Pedagogues	3.66 (.77)	3.28 (.62)	-	1,77	6.102	n.s.
Teachers	3.23 (.89) ^a	2.18 (.71) ^b	2.42 (.81) ^b	2,218	34.552	.000
Assistant Teachers	3.26 (.96) ^a	2.07 (.92) ^b	-	1,33	13.841	.001

NOTE: Means in the same row that do not share superscripts differ significantly at $p < .01$ using a post hoc-test (Scheffe)

judged the ASD-specific knowledge to be relatively low in their schools.

In almost all special schools with ASD-specific education (97%) staff members were given the opportunity to follow training concerning ASD, whilst only 61% of the special schools without ASD-specific education provided this opportunity ($\chi^2(1) = 28.82, p = .000$). In the group of general education schools, 73% followed ASD-specific training, which tends to be a higher percentage than that in special schools without ASD-specific approach ($\chi^2(1) = 2.64, p = .072$). Nevertheless, all schools involved in this study had one or more students with a diagnosis of ASD or suspected ASD. Keeping in mind that the quality of life of individuals with ASD largely depends on the autism-specific knowledge and the expertise and skills that professionals have in modifying their communication style and the environment to the needs of people with ASD, training should be regarded as a key factor in developing good practice for persons with ASD (Peeters, 2000).

All schools were asked to rate themselves on a 10-point scale, which represented the quality of the education of students with ASD in their school. A score of 10 indicated the ideal education in ideal circumstances for students with ASD. The average scores of the schools are shown in TABLE VI.

Accessibility of special and general education schools for students with ASD

The results of our study highlight clear differences between special and general education schools as far as accessibility is concerned. One of the major accessibility difficulties of special schools in Flanders lies in the long waiting lists. Thirteen percent of the special schools have a waiting list. Significantly, more schools, stating that they adapt their educational programme to the needs of students with ASD, have a waiting list (23%) than schools without ASD-specific education (5%) ($\chi^2(1) = 11.44, p = .001$).

Another possible cause of limited accessibility of specialised ASD-education is the fact that many special schools in Flanders require a formal diagnosis of ASD as a prerequisite of being eligible to request ASD-specific support within the school. However, results of previous research carried out among parents of children with ASD (Renty and Roeyers, 2004) indicate that it is not easy to consult diagnostic centres, due to their long waiting lists and the limited availability of diagnostic centres. People have to consult an average of 3.29 (SD = 1.76) diagnostic centres and have to wait on average 2.12 years (SD = 2.12) for a diagnosis. Meanwhile, the child will have reached on average 5.78 years

TABLE VI
General (self-reported) appraisal of quality of the education delivered to students with ASD in special and general education schools.

	Special schools with ASD-education M (SD)	Special schools without ASD-education M (SD)	General education schools M(SD)	df	F	p
Quality score	6.65 (1.61) ^a	3.88 (1.81) ^b	5.15 (2.19) ^c	2,199	37.517	.000

NOTE: Means that do not share superscripts differ significantly at $p < .01$ using a post hoc-test (Scheffe)

(SD = 2.41). Considering that several studies have demonstrated that the diagnosis of ASD is reliable and stable from the age of 2 years (Moore and Goodson, 2003; Charman and Baird, 2002), the average age when a diagnosis is made is unacceptably high in Flanders. Since special schools with an ASD-specific approach often demand a formal diagnosis of ASD, these diagnostic problems impede easy access to proper support and education. In view of the fact that general education schools have a lower threshold, these accessibility problems clearly occur less frequently in these schools. Moreover, 94% of these schools declared that so far they have never refused to enrol a student with ASD.

Discussion

Considering the increasing number of publications and movements advocating the educational inclusion of students with disabilities, it seems that the value of special education has shifted to the background (Palmer *et al.*, 2001). Nevertheless, in reality special education is still a frequently chosen option for students with disabilities in many countries (Ainscow, 1997; McLeskey *et al.*, 1999). Although the goals and values underlying the philosophy of inclusion are undeniably laudable, some researchers dispute the benefit of general education for students with more severe disabilities (Carlberg and Kavale, 1980; Fuchs and Fuchs, 1995; Madden and Slavin, 1983). However, the results of our study have demonstrated that choosing a special school does not automatically provide the best educational environment for students with ASD. On the one hand, of all the special schools that educate students with ASD, only 44% confirmed they

had an adjusted educational programme that takes into account the unique needs of students with ASD. The specialised approach in these schools manifests itself in areas of alternative communication, the educational environment, parental involvement and finally, autism-specific knowledge and training. On the other hand we found that, in comparison with special schools without ASD-specific education, general education schools tend to create more opportunities for the staff to follow ASD-specific training and they often work more closely together with parents and external supporters to adapt their education to the needs of students with ASD. Moreover, general education schools try just as hard as special schools without ASD-specific education to adapt the learning environment and communication to the needs of students with ASD. In view of the differences in environmental and communicative needs of the respective school populations, this is a creditable effort of the general education schools.

Practical Implications

Although the present study is limited to self-report data of the schools and no direct indication is provided about differences in student outcome depending on the type of school, ASD-specific educational adaptations are considered to be worth the effort since previous research has demonstrated that these adaptations result in improved student outcome (Panerai *et al.*, 2002). However, interviews with key professionals in special schools have revealed that these educational adaptations require extra funding and attention. Many schools have to distribute their financial resources unevenly between

classes with and without students with ASD to the advantage of the ASD-specific classes, since the education of students with ASD makes great demands on the staff as far as training, endurance and acquiring specialised instructional techniques are concerned. Besides, properly adapted education for students with ASD does not only have an impact on the classes involved, but on the school in its entirety. All this implies that the organisation of ASD-specific education is a challenge, affecting staffing levels and infrastructure. Despite the efforts all schools in Flanders make to optimise their education towards students with ASD, the analyses of the questionnaires and the interviews show that in many schools the ASD-specific adaptations could be improved. Additional financial and infrastructural resources seem to be a major factor in improving ASD-specific education. Considering the increased prevalence of children with ASD within the normal range of intelligence (Chakrabarti and Fombonne, 2001) and since general education schools apparently try hard to adapt their education to the needs of students with ASD, more attention must be paid to extra funding and the organisation of extra support for students with ASD and their teachers in general education schools. Nevertheless, general education for all students with ASD seems to be unrealistic at the present time, given the current unfavourable economic climate that limits the resources for fully adapting general education to the extensive and unique needs that some children with ASD have. Consequently, a continuing attention for training and development of special schools with ASD-specific education must not be underestimated. Although more than half of the special schools where students with ASD are enrolled do not have an adjusted

programme for children with ASD, it would be unwise to invest in extending ASD-specific education to all special schools. But in special schools without an ASD-specific approach the organisation of ASD-specific training is of major importance because: 1) especially these schools fulfil an important role in detecting students with ASD; 2) it enables having some consideration for the special needs of children with a suspected ASD (possibly in anticipation of specialised education in an adjusted class).

Finally, we would like to emphasise that the best educational environment for students with ASD has to be assessed individually and is not connected with a single classroom model. Although the least restrictive environment is often associated with an inclusive environment, we are convinced that an individualised, skill-orientated and predictable environment will be the least restrictive environment for many students with ASD, because these adaptations often imply a life with more independence, less behavioural problems, fewer errors (Panerai *et al.*, 2002) and as a result a better quality of life.

Summary

This study investigated quality and accessibility of the Flemish school system for students with Autism Spectrum Disorder (ASD). A questionnaire was sent to all special schools (n=272) and a sample of general education schools (n=140) in Flanders (Belgium). The results ensuing from the 172 special schools and 70 general education schools that participated in this study has demonstrated that special education does not necessarily provide the most beneficial environment for the

student with ASD. Special schools stating that they adapt their educational programme to the needs of students with ASD and general education schools put more effort into dealing with ASD-specific pedagogical and organisational issues than special schools without ASD-specific education. Due to the organisational and pedagogical specificity of appropriate education for students with ASD, it seems that schools trying to adjust to the special needs of students with ASD often need more additional financial and infrastructural resources in order to optimise the education for students with ASD.

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