Challenges Encountered by Children with Autism Spectrum Disorder: from the perspective of academic performances and education service providers

Zufan Wu *
Beijing 101 Middle High School, Beijing, China
* Corresponding Author Email: 24jovan.wu@beijing101id.com

Abstract. In recent years, special education in mainland China has been developing rapidly owing to the ever-increasing concern for minority groups with difficulties. However, many problems still exist in special education for individuals with autism. To improve the overall teaching quality targeting students with Autism Spectrum Disorder (ASD), this study first addresses the impact of typical symptoms on their academic performances, including their capabilities of reading, writing, and studying STEM (Science, technology, engineering, and mathematics)-related majors. Subsequently, this paper demonstrates the educational challenges encountered by ASD children. All kinds of schools, which contain regular schools, public special schools, and private institutions, are facing imperative issues. Last but not least, based on regulations and practices implemented in Taiwan and other western countries, this article advances two proposals enhancing the enrollment rate of inclusive education and alleviating the financial burdens of non-governmental organizations.

Keywords: Autism Spectrum Disorder; Special Education; Education Inequality.

1. Introduction

Autism Spectrum Disorder (ASD) is an early-appearing neurodevelopmental disability leading to social communication and interaction deficits, receptive and expressive language impairments, as well as restricted or repetitive sensory-motor behaviors [1-2]. This heterogeneous disorder contains autism, Asperger's syndrome, childhood disintegrative disorder, and an unspecified form of the pervasive developmental disorder. The cause of ASD is extremely complex and has not yet been fully elucidated. Thus, considerable work is still required to produce effective behavioral and medical treatment approaches. Currently, early interventions and special education are mostly applied to ameliorate symptoms of ASD [5-6].

According to the latest study, the prevalence rate of ASD in mainland China among children aged 6 to 12 years is approximately 0.70%, suggesting that 700,000 of them are diagnosed with ASD. The study also reveals the number of children with ASD is increasing constantly, which poses considerable challenges to both families with ASD individuals and the Chinese education department. Although special education has been reformed and rapidly developed in mainland China in the late 1970s when former president Deng Xiaoping implemented the Reform and Opening policy, children with severe neurological and developmental disabilities, especially ASD, are consistently under-educated. They cannot receive the same quality of education as normal students.

Hence, many scholars have conducted in-depth research on the diagnosis and intervention measures of ASD, academic difficulties encountered by children with ASD, and the situation of special education services provided in mainland China. Studies demonstrate that students with ASD generally have poor performance in reading comprehension and writing, while they have a unique talent in STEM-related fields. Studies also show that a variety of non-negligible issues exist in special education schools and institutions. They are not only short of specialized teachers and curriculum, but they are also short of reliable financial support.

Overall, the relevant literature is extensive. However, a systematic review that can provide an overview of studies on ASD education and thus help the educational sector to propose effective policies is lacking. Moreover, scholars in mainland China seldom offer solutions addressing issues of ASD education. Without advancing practical practices to help children with ASD academically, they
will be denied access to schools with sufficient resources. Eventually, they will meet many challenges in their future development, ranging from basic subsistence to employment. For instance, the majority of them find a hard time applying for a job; for ASD individuals who can earn money through work, underemployment is common. More importantly, special education in mainland China can hardly be improved to keep pace with general education. Education inequality can cause significant differences in educational achievement between individuals and thus negatively affect social and economic mobility.

Based on the above discussion, promoting ASD education is a matter of great significance for helping children with learning disabilities and achieving educational equity. Therefore, this paper aims to reveal the current situation regarding the schooling of students with ASD in mainland China and put forward educational practices on the basis of successful cases in other regions, including Taiwan and foreign countries. These policies are all supported by adequate theoretical knowledge and numerous authentic trials, whereas successful cases were not happened in Chinese educational settings, suggesting that proposed practices need to be adjusted to be suitable for ASD students in China. Although there are minor problems with applied literature, these references are extraordinarily helpful in revealing the current situation and providing suggestions to accelerate the development of ASD education in mainland China.

The study first addresses the impact of typical symptoms on their academic performances, including their capabilities of reading, writing, and studying STEM (Science, technology, engineering, and mathematics)-related majors. Subsequently, this paper demonstrates the educational challenges encountered by ASD children. All kinds of schools, which contain regular schools, public special schools, and private institutions, are facing imperative issues. Last but not least, based on regulations and practices implemented in Taiwan and other western countries, this article advances two proposals enhancing the enrollment rate of inclusive education and alleviating the financial burdens of non-governmental organizations.

2. Impact of student characteristics on academic performance

2.1 Weakness in reading comprehension

Starting from the moment they are born to the moment they learn to speak, children perceive and learn about the world in various ways. Reading is one of the most common means by which children acquire an understanding of their surroundings, as it is a constant part of children's lives. Hence, reading comprehension is crucial for children. However, ASD students have weaker reading skills compared to typically developing students. It has been shown that about one-third of children with ASD will exhibit reading difficulties after entering elementary schools.

Simple View of Reading (SVR) considers effective reading to include both words decoding skills and text comprehension. Children with ASD are more adept at decoding than the general population, yet they performed significantly worse on reasoning and language comprehension tasks. By comparing the reading comprehension characteristics of eight children with ASD and eight language-age matched normal children, a South Korean scholar discovered that although some children with ASD develop strong word recognition skills in the absence of appropriate meaning-making skills, they have difficulty transitioning their attention from word-level reading to text comprehension. Decoding words is a prerequisite for reading comprehension, but understanding words alone, without contextualizing and processing, and integrating all information, is not enough to understand the entire text. For example, most children with ASD can only describe a handful of story lines and goal-directed behaviors of characters. Accordingly, ASD children have an inability to read comprehensively. The weak central coherence theory is one of the underlying reasons, suggesting that children with ASD tend to excessively focus on the detailed information of reading contents, resulting in a failure to grasp the text as a whole.
Meanwhile, psychologists claim that children with ASD are incapable to understand the motivations or identify with the moods of the characters in reading passages because of deficits in their psychological development.

2.2 Weakness in writing

Composition difficulties experienced by students with ASD can be ascribed to the mechanics and content of the writing.

To begin with, children with ASD demonstrate handwriting impairments. According to the latest data, approximately 87% of children with ASD have fine and gross motor skills difficulties, ranging from uncoordinated gait to problematic handwriting abilities. ASD students are not capable of manipulating writing utensils, such as pens, as they have mild to severe issues with fine-motor control. Therefore, students with ASD are struggling to form legible handwriting, especially in writing letters.

In addition to the mechanics of writing, ASD students’ capability in composing a written text is often affected by perspective-taking problems. Writing is an act of communication between an author and his or her audience. With this notion, ASD students who are not capable to comprehend others’ viewpoints will be caught in a dilemma because they are writing for a targeted reader. Furthermore, the process of writing is complicated, requiring individuals to accomplish every step, involving brainstorming, devising an outline, gathering information, revising, and editing, carefully. These tasks are extremely challenging for children with ASD, as the majority of them have executive function deficits, a set of symptoms that urge ASD children to have a hard time with time management and organization. All in all, students with ASD tend to have poor performance in writing.

2.3 Advantage in STEM

Different from reading and writing, ASD students, especially those with Asperger syndrome, are proficient in STEM courses. The overall college enrollment rate of students with ASD is extraordinarily low. However, based on the data from National Longitudinal Transition Study, it is estimated that 34.31% of young adults with ASD are majoring in STEM-related fields when attending universities. The STEM participation rate of students with ASD is considerably higher than both the general population, which is about which is 22.80%, and any other group with disabilities. A large number of ASD students gravitate toward STEM majors because of their ability to be detail-oriented, an advantage that is detrimental to their reading skills. By thinking comprehensively, they can consolidate details into a larger whole, and the connections between even the tiniest details can be the starting point that leads to the advancement of new findings. In contrast, neuron-typical thinking usually proceeds at the top and analyzes details downward in a way that is shaped by existing knowledge, which can limit development of novel ideas.

Additionally, owing to their innate abnormalities in logical thinking and their diminished capacity for social influence, children with ASD can form concepts and draw conclusions objectively independent of subjective conceptions.

3. Educational challenges encountered by children with autism spectrum disorder

3.1 Limited knowledge and experience of autism spectrum disorder among teachers

Compared with teachers in United Kingdom, teachers in mainland China barely possess knowledge and experience regarding ASD. According to an experiment conducted in 2019, 80.5% of teachers in the United Kingdom have experience teaching children with ASD, with 27.5% having more than 5 years of experience, 27.5% having 2-5 years of experience, and 27.5% having less than 2 years of experience. Moreover, 66% of teachers in the United Kingdom have been trained with specialized ASD knowledge. This figure is still increasing, which indicates that more teachers are getting to know the special academic demands of ASD students.
By contrast, the majority of the teachers in Chinese school’s lack awareness of ASD. For instance, in Shanghai, one of the developed cities in mainland China, 83% of public primary and secondary school teachers answered inaccurately to over half of the questionnaire testing knowledge related to ASD. In addition, only 28% of Chinese teachers reported that they had experience in teaching children with ASD, among which 0% had more than 5 years, 3.4% had 2-5 years, and 25.4% had less than 2 years. Last but not least, merely 38.4 percent of Chinese teachers participated in autism-specific training. These data fully demonstrate that a significant discrepancy in the understanding of ASD between Chinese and United Kingdom teachers exists. Chinese education authorities should increase autism-specific training for teachers, as they are crucial characters in helping students with disabilities in classroom settings.

3.2 Challenges in mainstream educational settings

Suiban Jiudu, the inclusive education in mainland China, has become the dominant mode of schooling for students with ASD, whereas the development of Suiban Jiudu has been stagnant or even regressive in recent years. Inclusive education advocates the elimination of conventional segregated forms of special education so that all children can learn together and succeed in regular schools. In fact, Suiban Jiudu plays a key role in increasing compulsory education enrollment and developing special education for children with disabilities. It is estimated that about 60% of handicapped children are educated in mainstream educational settings together with regular children.

However, compared with general education and inclusive education in western countries, there are still numerous problems with Suiban Jiudu in practiced in mainland China.

First of all, the legal guarantees for eligibility of Suiban Jiudu are extremely vague. Many legal texts simply state that children with disabilities who are "capable of receiving a general education" are eligible to attend regular schools, but there are no specific legal criteria for determining such capability. Moreover, the laws fail to provide penalties or effective legal remedies for intentionally refusing to accept children with disabilities who meet the requirements for enrollment in regular schools. Therefore, personal prejudices of schools and teachers can be easily carried over into the identification process of a child's disability. Many researchers have shown that teachers hold negative attitudes toward students with ASD and are more inclined to segregated education. The survey indicates that more than 60% of instructors are unwilling to accept children with disabilities in their classrooms. Due to impairments in development, ASD students tend to have poor academic performances. For instance, they often require more time to understand an unfamiliar concept than normal students need. Hence, they are always discriminated against by teachers and classmates, as they slow down the class efficiency, affecting the academic achievements of other students. As a result, most children with ASD are ostracized from regular schools. Based on interviews with their parents, a minority of ASD students are accepted into mainstream schools because their parents are often acquainted with school administrators or instructors, revealing that the implementation of Suiban Jiudu has not achieved its purpose.

Furthermore, personalized instruction and planning for students with ASD are absent in mainstream schools. Under most circumstances, students with ASD are taught with the same curriculum as their classmates without abnormal development. Although Suiban Jiudu alleviates both financial burdens and mental stresses of parents of children with ASD, it cannot satisfy the special demands of ASD students. Contributing to this shortcoming is the Chinese government's greater commitment to increasing the number of children with disabilities in mainstream schools, rather than practical assistance regular schools can offer to improve the academic performance of children with disabilities. Thus, the quality of education ASD students receive is not high.

3.3 Issues regarding public special schools

The development of public special schools within mainland China is greatly disparate. With the rapid development of the Chinese economy, society has placed an increased emphasis on the schooling of children with disabilities. The government has provided various supports to special schools,
allowing significant progress in the development of special education. Specifically, the government has encouraged more university students to engage in special education and offered subsidies to special schools. Accordingly, special schools have acquired personnel and instructional resources. Many parents of ASD students also have claimed that public special schools are affordable, causing no economic hardship to families.

However, public special schools have been constructed exclusively in urban areas, such as Beijing and Shanghai. In remote rural regions, on the contrary, children with ASD have little to no educational opportunities. For example, the People’s Government of Xintian County states that local special education is still encountering issues such as tight funding for school operations, shortage of faculty members, and insufficient rehabilitation equipment. The school consists of 12 staff members, of whom only 2 are special education teachers. In addition, the school currently accepts 36 students with cognitive impairments. However, the entire county possesses 170 licensed children with intellectual disabilities, including ASD, between the ages of 7 and 16. Therefore, Xintian county is incapable to meet the demand for schooling for eligible children with ASD. Many more similar cases exist in mainland China. Hence, the government and related departments should continue to enhance support for the development of special schools throughout mainland China, including in impoverished rural areas.

### 3.4 Shortcomings of non-governmental organizations

In accordance with the preceding content, both inclusive education and the public special schools supported by the government are far from adequate to fulfill the needs of a large number of ASD students. Non-governmental organizations for students with ASD are thus burgeoning across the country. These private institutions are able to operate in a flexible approach, effectively satisfying the needs of parents and children with ASD. However, the lack of professional special education instructors and the austere educational environment has led to a worrying situation for the survival of most non-governmental organizations. An investigation of private special education institutions in Chongqing, a city in southwestern China, fully demonstrates these issues.

One of the most pressing problems encountered by private special education institutions is the qualification and availability of faculties.

First, teachers in private institutions are not professional in the area of special education for ASD students. Through the interviews, the study learned that the most essential requirement for all institutions when hiring is that teachers must possess the qualities of caring and patience. In addition to this, institutions also expect their employees to have a college degree or higher. These two standards indicate that the institution does not have high expectations for teachers. If the institutions overly emphasize job matching, they will face the problem of staff shortage. As a matter of fact, teachers who study special education in universities are extremely rare in private institutions. For example, Chongqing Normal University Experimental Center for Children with Disabilities has 2; Yubei Tian'ai Rehabilitation Training Center for the Disabled has 1; Rongzhhi Education Service Center has 2. Moreover, restricted by financial pressures, many new recruited employees rely on post-induction training organized by institutions they work with, rather than receiving systematic and specialized courses.

Secondly, the turnover rate of teachers in non-governmental organizations is high. Contributing to this phenomenon is the fact that teachers are generally underpaid. The average salary of teachers ranges from a minimum of 700 RMB per month to a maximum of 1500 RMB per month. Facilities are also not entitled to additional benefits. In current society, the skyrocketing costs of living and property prices are putting a huge financial strain on individuals. The meager salary offered by private special education institutions fails to satisfy people’s basic needs for survival. Hence, many teachers are leaving special education for better-paying careers.

Except for the issue of faculty, the environment of non-governmental organizations is also not conducive to the development of students with ASD. Non-governmental organizations are self-funded and self-managed by their promoters, lacking support from the government and enterprise. Therefore,
their financial income is mainly derived from tuition fees. As a result, many institutions are located in residential areas, as the rents are cheaper than in office buildings. The living room is often used as an activity space or sensory training room. Bedrooms are decorated and furnished with desks and chairs to serve as classrooms. Consequently, institutions have little space and students do not have enough space to move around. Due to the fact that they do not own the house, some institutions do not even decorate the classrooms, but merely lay plastic mats on the ground in order to prepare for relocation when necessary.

4. Educational practices for students with autism spectrum disorder

4.1 Measures improving inclusive education in mainland China

In order to improve Suiban Jiudu, the government of mainland China should formulate an explicit law on special education and establish an appeal system.

The main purpose of the special education law is to protect the right of children with ASD to attend mainstream schools. Two principles should be followed by all schools to achieve educational equity. First, every child should be entitled to equal access to education. Second, every child has the right to receive an education that is specifically tailored to his or her characteristics. Specific legal provisions should strictly regulate the composition, qualifications, principles, and procedures of the ASD evaluation committees. The special education law should also specify the form of educational placement, the conditions of enrollment, the teaching materials, the pedagogy, the adaptation of the curriculum, and the assessment measures for children with ASD. Last but not least, the law should clearly define the scope of responsibility of all parties, with operational penalties for persons and institutions that fail to fulfill their obligations.

Figure 1. Appeal system implemented in Taiwan

The appeal system is responsible for helping ASD students advocate for their rights. Since the implementation of inclusive education in mainland China, it is not unusual for many ASD students to be rejected and discouraged from attending regular schools. Due to the fact that the judicial system in mainland China is not fully established yet, it can take an extremely long time to file a lawsuit. Therefore, the government needs to construct a more flexible system of rights remedies in addition to litigation. The specialized appeal system for special education students in Taiwan, China, is worthy of
reference. By emulating the system introduced in Taiwan, as shown in Figure 1, students with ASD are not only guaranteed enrollment but also a backstop to defend their rights. For instance, when they are rejected by mainstream schools, ASD students, although individuals, also enjoy the power to go up against schools. The establishment of such a mechanism can also avoid radical and violent resolution, as it establishes a rational way for ASD groups to protest.

4.2 Measures enhancing non-governmental organizations

Non-governmental special education organizations have filled the gap caused by inclusive education and public special schools, becoming an indispensable component of special education in China. However, as mentioned in the previous section, private special education institutions are under great financial pressure. Government funding has undoubtedly become a necessity for the survival and development of private-run institutions. The first solution is that the government can distribute funds to private institutions in the form of research projects. To be more specific, non-governmental organizations can receive government transfers by assisting or undertaking the project conducted by the governmental special education department. The amount of the transfer is determined by the quality of the institution's completion. Through this approach, both sides benefit. The government can also allocate land at low or no cost to private institutions. Another way of assistance is that the government can give a one-time subsidy to the institutions’ start-up funds at the beginning of their establishment. For example, Beijing, which is the capital city of China, gave grants to institutions, as well as private citizens, that provide rehabilitation and education for people with ASD in 2010.

5. Conclusions

All in all, the paper reviews the existing literature on educational challenges encountered by students with ASD in mainland China from the perspectives of personal developmental defects and social educational services. First of all, due to the abnormal development of students with ASD, their reading and writing skills are generally weaker than those of typically developing students. However, students with ASD demonstrate an absolute predominance in STEM-related subjects because they tend detail-oriented. Secondly, educational service providers in mainland China, including faculties, regular schools, public special schools, and non-governmental organizations, are defective, as they all face the issues of unprofessional teaching resources, financial strains, and ambiguous legitimate regulations. By examining these two perspectives, it is clear that ASD students are not receiving a high-quality education in line with their special needs. The demand for education from ASD students is significantly greater than the supply. Special education has its roots in the ideas of justice, human rights, and equality, which assert that any individual can be educated and trained to be a valuable member of society. Accordingly, it is the responsibility of all societies and generations to provide an equitable start and schooling opportunities for every child. Hence, integrating effective policies implemented in Taiwan and other western countries, the paper advances several educational practices that can be adopted by mainland China to improve special education for ASD students. Establishing complete and strict stipulations for inclusive education and increasing governmental transfer payments to private special education institutions are feasible and helpful measures. Fully accomplishing these proposals can promote the elimination of educational inequality, as students with ASD also have the right to gain the knowledge and skills they need to integrate into society and reach their full potential. Guaranteeing educational rights and opportunities for children with disabilities is only the threshold for the development of special education, as it is a complex and large-scale project, requiring not only the construction of an efficient administrative protection system but also the formation of a scientific and specialized protection system. Therefore, the effort to improve special education is not the responsibility of one party, but a process of full participation and cooperation of people from all walks of life. Special education in mainland China still leaves much room for improvement, but with the increasing awareness of disabled children, it is poised to make leaps and bounds in the near future.
References


