Inclusive Assessment: Challenges Faced by Autistic Students in Higher Education

|  |  |
| --- | --- |
| Martin Mc Hugh  Dundalk Institute of Technology,  Ireland  Martin.McHugh@dkit.ie | Naoise Collins  Dundalk Institute of Technology,  Ireland  Naoise.Collins@dkit.ie |

Abstract

Autistic students account for approximately 1-2% of the third level student population, however their graduation rates compared to their neuro typical peers is much lower.

Any mechanism put in place to support autistic students should, address the issues behind these low graduation rates specifically. For example, students who do not inform an institute of their diagnosis and don’t avail of local accommodations how can we best support these students?

Supports need to be integrated at the subject/module level ranging from employing technology aides to techniques such as Universal Design Learning and Inclusive Assessments to assist in achieving positive outcomes.

# Introduction

There has been an increase in the diagnosis of autism since the 1990’s [1] and it is expected that the number of autistic students enrolling in third level also will increase [2].

In 2018, the Department of Health in Ireland issued a report stating, that the prevalence of autism in the Irish population ranges from 1 – 1.5 percent [3]. In the UK this number is approximately 1-2 percent according to a 2022 report [4]. The Centre for Disease Control (CDC) in the US identified approximately 2.2 per cent of children in the US are diagnosed as being autistic [5]. Australia also showed a similar prevalence estimate for autism of between 1.5 and 2.5 per cent [6].

A 2014 report by the CDC identified that 69% of autistic people[[1]](#footnote-2) do not have additional intellectual disabilities. However, a further study revealed that autistic people with no additional intellectual disabilities often have poorer prospects, when compared to autistic people with additional learning needs. For example, autistic people with no intellectual disabilities are three times more likely to have no daytime activities including education or employment [7]. Autistic students in second level education tend to have a desire to progress to third level education [9]. This is further strengthened by research demonstrating that autistic people who have a third level education have better life outcomes [8].

The aim of this research is to identify the challenges faced by autistic students in Higher Education (HE) including a review of educational frameworks such as Universal Design for Learning (UDL) and technological advances in the field of Augmented Reality (AR) and Virtual Reality (VR) to determine if these mechanisms may be a viable route towards bettering outcomes for autistic students in HE.

# 2. Challenges Faced by Autistic Students

The number of autistic students reaching third level education is increasing [10], however internationally it has been found that the graduation rate for autistic students is much less than their comparable peers. A study carried out in Australia in 2015 identifies the number as (35% compared to 67%) [11]. A study completed at the University of Connecticut in 2015 sees several (39%) when compared with their peers (59%) [12].

The success of autistic students enrolled in third level education can be determined by the support which they received from their Higher Education Institute (HEI) [13]. This represents a challenge for third level as autistic students can be reluctant to disclose their diagnosis to others [14]. These disclosures are made to receive assessment accommodation during exams and for extra aids during classroom learning activities [15]. Autistic students choosing not to disclose their diagnosis potentially leads them to suffer as they don’t receive the necessary accommodations which they need to succeed [16].

A study carried out in Ireland in 2019 revealed that large numbers of autistic people are either underemployed or unemployed [17]. In Australia a report identified that just 42% of autistic people are employed compared to 83% of those without a disability [18]. A report released by the Office of National Statistics (ONS) in the United Kingdom in 2021 revealed that just 22% of autistic adults there are in employment [19]. In the US approximately 85% of autistic adults are unemployed [20].

## 2.1. Challenges experienced by Autistic Students in HE

The reasons for the low rate of graduation of autistic students when compared to their neurotypical peers is complex. Autistic students display diverse characteristics that may include strong memory, being extremely focused, being diligent and having an affinity with technology [21].

However, the transition of autistic student to HE can be much more challenging due to life tasks such as goal setting, establishing peer connections, and becoming independent [22]. Autistic students have great difficulty with transitions and without the necessary preparation they fare much worse than their neurotypical peers [23]. It has also been shown that there is an indirect relationship between a student’s stress levels during their transition to HE and 6 months later during their studies [24].

Autistic students struggle with the reduced structure and routines associated with higher education [25]. Furthermore, they can be distracted by heightened sensory sensitivities associated with a new campus, [26] they lack support from their friends [27] and they can experience anxiety, depression, and loneliness [26].

Autistic students can struggle with group work as often they don’t have the necessary social skills [28]. These students struggle with knowing how to engage within a group. Collaborative environments are essential to learning in third level [29]. There is an increasing movement towards the use of group work in HE as this can help provide the necessary life skills required for employment [30].

Time management can also be difficult for autistic students [31]. This is usually caused by the lack of predictability and structure associated with HE.

There is a lack of research answering the questions as to why the graduation rates of autistic students is lower when compared to neurotypical students. Research to date has mainly focused on small sample groups and is primarily from the UK or USA [32]. Apart from one larger scale study (135 participants) most research into the experience of autistic students in HE has comprised of less than 36 participants [33]. In attempting to answer these questions we must look to the area of assessment; how can we view our assessment criteria differently?

**3. Inclusive Assessment**

Inclusive assessment is defined as the design and use of fair and effective assessment methods and practices that enable all students to demonstrate to their full potential of what they know, understand, and can do [34].

**3.1. Overview**

Current third level assessment practices have largely contributed to the exclusion of students with needs different to that of the dominant societal group [35]. For example, the use of extra time during exams “others” the students who must remain seated when the exam is over. To avail of these accommodations a waiver must be sought putting the onus and responsibility on the student rather than the educational system. This negatively affects autistic students as it fails to identify how these students may learn and interact with the world in ways that differ from the norm. Due to the differing profile for each autistic student assessment practices cause them to underachieve relative to their cognitive ability [36].

Guidelines for the implementation of inclusive assessment exist within teaching resources rather than as peer-reviewed publications, there remains a lack of studies on the design and implementation of inclusive assessment [37]. One key principle of inclusive assessment is to use a variety of methods and tools, rather than relying on a single test or assessment. This allows for a more comprehensive and accurate understanding of the individual's abilities and needs. For example, an assessment might include observation of the individual in a naturalistic setting, such as a classroom or home, as well as more structured tasks such as tests or interviews [38].

Another important aspect of inclusive assessment is to consider the context in which the autistic individual is being evaluated. Factors such as the individual's environment, support system, and access to resources can all impact their performance and should be considered when interpreting assessment results [39].

One of the main benefits of inclusive assessment is that it allows for the development of more tailored and effective interventions and supports. By considering the unique strengths and challenges of the autistic individual, it is possible to design interventions that are more likely to be successful and meet the individual's needs.

Overall, inclusive assessment is an important approach to evaluating that considers their unique abilities and needs. By using a variety of methods and tools, considering the context in which the assessment takes place, and involving a range of professionals, it is possible to gain a more comprehensive and accurate understanding of the individual's abilities and needs, leading to more effective interventions and support.

# 3.2. Universal Design for Learning

One approach to inclusive assessment that aligns with these principles is Universal Design for Learning (UDL). UDL is a framework for designing instruction and assessment that proactively addresses the diverse needs of all learners, including those with disabilities [40]. UDL provides a set of guidelines for designing assessments that are flexible, accommodating and provide multiple means of representation, action, and expression (R.A.E). This approach recognizes that students learn differently and that assessments should be designed to accommodate this diversity. By providing multiple means of representation, action, and expression, UDL assessments allow for different ways to demonstrate learning, giving all students an equal opportunity to succeed [41]. For example, providing visual aids, audio recordings, or alternative response formats for questions can support students with different learning styles, including those with autism. Additionally, UDL assessments can be designed to be more inclusive of the context and environment in which the assessment is taking place, which can positively impact the performance of autistic students[42].

**3.3. Studies involving Inclusive Assessment**

Inclusive assessment is usually enacted as part of a holistic plan of educational inclusion. There is more widespread research in this area at a primary school level, for example a study in Australia found that using an inclusive assessment approach required the needs of the student to be targeted at all levels of the education system through a three tiered model of individual level, class level and whole school level, it recommends the need to identify students, goal setting in conjunction with student input and the translation of goals into key outputs [36].

A large-scale study investigated the inclusive assessment standards and practices in schools across three countries: Ireland, the UK, and the US [43] they created a framework for with three core features for their comparison:

1. All students are included and benefit

2. Assessments are accessible

3. The entire curriculum is assessed.

The study found Ireland had a much less accountable process in terms of inclusive education as opposed to the UK and US however it also noted as a result there was a narrowing of the curriculum and accusations of “teaching to the test” in these more accountable models.

As mentioned previously there is a lack of research in inclusive education for autistic students however a study conducted in third level for linguistically diverse learners [44] found that incorporating learners into the design of the assessment elicited positive results where learners found the system fairer, although the learners reported it to be effortful.

Research suggests that inclusive assessment has the potential to be successful for autistic students, as it allows for a more comprehensive and accurate understanding of their abilities and needs, but this area requires further academic rigor and research designs that include the voice of the students themselves to develop more tailored and effective interventions and supports. The next section discusses the importance of technology and how it can be used as an aid to support autistic students.

**4. Technology**

Technology has the potential to enhance the inclusivity of assessments by providing tools and resources that can support diverse learners. From accessibility features to personalized learning experiences, technology can help create a more equitable and inclusive assessment environment.

**4.1. Technology for Autistic Students**

Technology provides access to information and resources that can be difficult for autistic students to access in other ways. For example, autistic students may struggle with social interaction, and technology can provide a way for them to communicate with their peers and teachers [45].

It provides a way for autistic students to engage with and learn about new concepts in a way that is more accessible to them. It provides a way for them to practice and develop new skills in a safe and controlled environment. For example, some autistic students may benefit from AR or VR interventions to convey and practice information in a way that is more meaningful to them [46]–[48].

**4.2. Technology to overcome the Challenges for Autistic Students**

There are a variety of technologies that can be used to support higher level education for autistic students, some examples include:

1. Assistive technology: This refers to technology that is specifically designed to assist individuals in accessing and using educational materials. Examples of assistive technology for autistic students include text-to-speech software, speech-to-text software, and visual scheduling tools [49], [50].
2. Educational software: This refers to software that is specifically designed for educational purposes, such as learning math, science, or language skills. There are many educational software programs available that are designed to be accessible and engaging for autistic students [51], [52].
3. Online courses: Online courses can provide a flexible and accessible way for students with autism to access higher level education. Many online courses are designed to be accessible to students with disabilities and may include features such as text-to-speech, closed captions, and adjustable font sizes. [53], [54]
4. Virtual reality (VR) and Augmented Reality (AR) tools: VR and AR technologies can provide immersive and interactive learning experiences for autistic students. These technologies can be used to teach a variety of subjects, such as science, math, and social studies, in a way that is engaging and accessible [46]–[48].

While there have been many research studies examining the role of technology to improve learning outcomes for autistic students. There is a lack of research specifically examining the role of technology to improve assessment. What is the use of improving our student’s learning through technology if our assessment criteria are unable to capture it?

**5. Conclusion**

Approximately 1-2% of the population have been diagnosed with ASD, however very little research has been conducted to identify how many of these autistic people enter HE. Assuming the same proportion of autistic students in HE as the general population, then in Ireland there are approximately 5000 autistic third level students. Research has been conducted showing that graduation rates for autistic students are much lower than their neuro typical peers.

To address this gap, further research and attention should be given to the area of inclusive assessment, we identified a lack of research specifically addressing autistic students alongside the importance of key frameworks such as UDL for the holistic development of assessment criteria in HE. This holistic development of both teaching and assessment frameworks is crucial. While many autistic students have made disclosures to their higher education institute regarding their diagnosis, a number chose not to, for varying reasons and a holistic approach will benefit both students who have made disclosures and those that have opted not to.

Finally, an overview was provided of the technological interventions that can be employed to assist autistic students in third level recognizing the need for further research to use this technology for inclusive assessment practices.

# 6. References

[1] J. C. Sarrett, ‘Autism and accommodations in higher education: Insights from the autism community’, *J Autism Dev Disord*, vol. 48, no. 3, pp. 679–693, 2018.

[2] B. E. Cox *et al.*, ‘College experiences for students with autism spectrum disorder: Personal identity, public disclosure, and institutional support’, *J Coll Stud Dev*, vol. 58, no. 1, pp. 71–87, 2017.

[3] Department of Health, ‘Estimating Prevalence of Autism Spectrum Disorders (ASD) in the Irish Population: A review of data sources and epidemiological studies’, 2018. [Online]. Available: <https://assets.gov.ie/10707/ce1ca48714424c0ba4bb4c0ae2e510b2.pdf> (Access Date: 14 December 14, 2022)

[4] G. Russell *et al.*, ‘Time trends in autism diagnosis over 20 years: a UK population‐based cohort study’, *Journal of Child Psychology and Psychiatry*, vol. 63, no. 6, pp. 674–682, 2022.

[5] Center for Disease Control (CDC), ‘Data and Statistics on Autism Spectrum Disorder’, 2021.. [Online].Available: <https://www.cdc.gov/ncbddd/autism/data.html> (Access Date: 12 November, 2022)

[6] M. Randall *et al.*, ‘Autism spectrum disorder: Presentation and prevalence in a nationally representative Australian sample’, *Australian and New Zealand Journal of Psychiatry*, vol. 50, no. 3, pp. 243–253, 2016.

[7] S. W. White *et al.*, ‘Students with autism spectrum disorder in college: Results from a preliminary mixed methods needs analysis’, *Res Dev Disabil*, vol. 56, pp. 29–40, 2016.

[8] J. M. Hendrickson, R. Carson, S. Woods-Groves, J. Mendenhall, and B. Scheidecker, ‘UI REACH: A postsecondary program serving students with autism and intellectual disabilities’, *Educ Treat Children*, pp. 169–194, 2013.

[9] P. M. Camarena and P. A. Sarigiani, ‘Postsecondary educational aspirations of high-functioning adolescents with autism spectrum disorders and their parents’, *Focus Autism Other Dev Disabl*, vol. 24, no. 2, pp. 115–128, 2009.

[10] K. Duerksen, R. Besney, M. Ames, and C. A. McMorris, ‘Supporting autistic adults in postsecondary settings: a systematic review of peer mentorship programs’, *Autism in Adulthood*, vol. 3, no. 1, pp. 85–99, 2021.

[11] D. Adams, K. Simpson, L. Davies, C. Campbell, and L. Macdonald, ‘Online learning for university students on the autism spectrum: A systematic review and questionnaire study’, *Australasian Journal of Educational Technology*, vol. 35, no. 6, pp. 111–131, 2019.

[12] L. A. Newman and J. W. Madaus, ‘An analysis of factors related to receipt of accommodations and services by postsecondary students with disabilities’, *Remedial and Special Education*, vol. 36, no. 4, pp. 208–219, 2015.

[13] L. J. Baker and L. A. Welkowitz, ‘Introduction: Intervention as Community Building.’, 2005.

[14] J. Davidson and V. L. Henderson, ‘‘Coming out’on the spectrum: autism, identity and disclosure’, *Soc Cult Geogr*, vol. 11, no. 2, pp. 155–170, 2010.

[15] K. Eaton, J. L. Ohan, W. G. K. Stritzke, H. M. Courtauld, and P. W. Corrigan, ‘Mothers’ decisions to disclose or conceal their child’s mental health disorder’, *Qual Health Res*, vol. 27, no. 11, pp. 1628–1639, 2017.

[16] S. Thompson-Hodgetts, C. Labonte, R. Mazumder, and S. Phelan, ‘Helpful or harmful? A scoping review of perceptions and outcomes of autism diagnostic disclosure to others’, *Res Autism Spectr Disord*, vol. 77, p. 101598, 2020.

[17] Miley I, ‘Autism at Work scheme aims to boost employment’, *RTE*, 2019, [Online]. Available: <https://www.rte.ie/news/2019/0530/1052615-autism-at-work/> (Access Date: 16 December 2022.)

[18] M. Scott *et al.*, ‘Factors impacting employment for people with autism spectrum disorder: A scoping review’, *Autism*, vol. 23, no. 4, pp. 869–901, 2019.

[19] ONS, ‘Outcomes for disabled people in the UK: 2020’, 2020.

[20] J. Palumbo, ‘Why Autism Speaks Is Encouraging Companies To Hire Those On The Autistic Spectrum’, *Forbes*, 2021. [Online]. Available: <https://www.forbes.com/sites/jenniferpalumbo/2021/04/27/why-autism-speaks-is-encouraging-companies-to-hire-those-on-the-autistic-spectrum/> (Access Date: 05 December, 2022.)

[21] V. van Hees, T. Moyson, and H. Roeyers, ‘Higher education experiences of students with autism spectrum disorder: Challenges, benefits and support needs’, *J Autism Dev Disord*, vol. 45, no. 6, pp. 1673–1688, 2015.

[22] L. L. Geller and M. Greenberg, ‘Managing the transition process from high school to college and beyond: Challenges for individuals, families, and society’, *Soc Work Ment Health*, vol. 8, no. 1, pp. 92–116, 2009.

[23] E. VanBergeijk, A. Klin, and F. Volkmar, ‘Supporting more able students on the autism spectrum: College and beyond’, *J Autism Dev Disord*, vol. 38, no. 7, pp. 1359–1370, 2008.

[24] S. M. Pancer, B. Hunsberger, M. W. Pratt, and S. Alisat, ‘Cognitive complexity of expectations and adjustment to university in the first year’, *J Adolesc Res*, vol. 15, no. 1, pp. 38–57, 2000.

[25] X. Wei, J. W. Yu, P. Shattuck, M. McCracken, and J. Blackorby, ‘Science, technology, engineering, and mathematics (STEM) participation among college students with an autism spectrum disorder’, *J Autism Dev Disord*, vol. 43, no. 7, pp. 1539–1546, 2013.

[26] S. Pinder-Amaker, ‘Identifying the unmet needs of college students on the autism spectrum’, *Harv Rev Psychiatry*, vol. 22, no. 2, pp. 125–137, 2014.

[27] M. O. Mazurek, ‘Loneliness, friendship, and well-being in adults with autism spectrum disorders’, *Autism*, vol. 18, no. 3, pp. 223–232, 2014.

[28] J. A. Cullen, ‘The Needs of College Students with Autism Spectrum Disorders and Asperger’s Syndrome.’, *J Postsecond Educ Disabil*, vol. 28, no. 1, pp. 89–101, 2015.

[29] A. Burke, ‘Group work: How to use groups effectively.’, *Journal of Effective Teaching*, vol. 11, no. 2, pp. 87–95, 2011.

[30] C. L. Colbeck, S. E. Campbell, and S. A. Bjorklund, ‘Grouping in the dark: What college students learn from group projects’, *J Higher Educ*, vol. 71, no. 1, pp. 60–83, 2000.

[31] V. van Hees, T. Moyson, and H. Roeyers, ‘Higher education experiences of students with autism spectrum disorder: Challenges, benefits and support needs’, *J Autism Dev Disord*, vol. 45, pp. 1673–1688, 2015.

[32] A. H. Anderson, J. Stephenson, and M. Carter, ‘A systematic literature review of the experiences and supports of students with autism spectrum disorder in post-secondary education’, *Res Autism Spectr Disord*, vol. 39, pp. 33–53, 2017.

[33] A. H. Anderson, M. Carter, and J. Stephenson, ‘Perspectives of university students with autism spectrum disorder’, *J Autism Dev Disord*, vol. 48, no. 3, pp. 651–665, 2018.

[34] C. Hockings, ‘Synthesis Inclusive learning and teaching in higher education: a synthesis of research’, 2010. [Online]. Available: [www.heacademy.ac.uk/evidencenet](http://www.heacademy.ac.uk/evidencenet)

[35] J. H. Nieminen, ‘Assessment for Inclusion: rethinking inclusive assessment in higher education’, *Teaching in Higher Education*, 2022, doi: 10.1080/13562517.2021.2021395.

[36] J. Roberts and A. Webster, ‘Including students with autism in schools: a whole school approach to improve outcomes for students with autism’, *International Journal of Inclusive Education*, vol. 26, no. 7, pp. 701–718, 2022, doi: 10.1080/13603116.2020.1712622.

[37] J. Tai, R. Ajjawi, and A. Umarova, ‘How do students experience inclusive assessment? A critical review of contemporary literature’, *International Journal of Inclusive Education*, pp. 1–18, Dec. 2021, doi: 10.1080/13603116.2021.2011441.

[38] J. Tai, R. Ajjawi, M. Bearman, D. Boud, P. Dawson, and T. Jorre de St Jorre, ‘Assessment for inclusion: rethinking contemporary strategies in assessment design’, *Higher Education Research and Development*, 2022, doi: 10.1080/07294360.2022.2057451.

[39] N. Dargue, D. Adams, and K. Simpson, ‘Can Characteristics of the Physical Environment Impact Engagement in Learning Activities in Children with Autism? A Systematic Review’, *Rev J Autism Dev Disord*, vol. 9, no. 2, pp. 143–159, Jun. 2022, doi: 10.1007/s40489-021-00248-9.

[40] F. G. Smith, ‘Analyzing a college course that adheres to the Universal Design for Learning (UDL) framework’, 2012.

[41] S. Carrington, B. Saggers, A. Webster, K. Harper-Hill, and J. Nickerson, ‘What Universal Design for Learning principles, guidelines, and checkpoints are evident in educators’ descriptions of their practice when supporting students on the autism spectrum?’, *Int J Educ Res*, vol. 102, Jan. 2020, doi: 10.1016/j.ijer.2020.101583.

[42] D. H. Rose *et al.*, ‘Accurate and informative for all: Universal design for learning (udl) and the future of assessment’, in *Handbook of Accessible Instruction and Testing Practices: Issues, Innovations, and Applications*, Springer International Publishing, 2018, pp. 167–180. doi: 10.1007/978-3-319-71126-3\_11.

[43] G. Douglas, M. McLinden, C. Robertson, J. Travers, and E. Smith, ‘Including Pupils with Special Educational Needs and Disability in National Assessment: Comparison of Three Country Case Studies through an Inclusive Assessment Framework’, *Intl J Disabil Dev Educ*, vol. 63, no. 1, pp. 98–121, Jan. 2016, doi: 10.1080/1034912X.2015.1111306.

[44] A. Kaur, M. Noman, and H. Nordin, ‘Inclusive assessment for linguistically diverse learners in higher education’, *Assess Eval High Educ*, vol. 42, no. 5, pp. 756–771, Jul. 2017, doi: 10.1080/02602938.2016.1187250.

[45] J. Ferguson, E. A. Craig, and K. Dounavi, ‘Telehealth as a Model for Providing Behaviour Analytic Interventions to Individuals with Autism Spectrum Disorder: A Systematic Review’, *J Autism Dev Disord*, vol. 49, no. 2, pp. 582–616, Feb. 2019, doi: 10.1007/s10803-018-3724-5.

[46] M. Schmidt and N. Glaser, ‘Investigating the usability and learner experience of a virtual reality adaptive skills intervention for adults with autism spectrum disorder’, *Educational Technology Research and Development*, vol. 69, no. 3, pp. 1665–1699, Jun. 2021, doi: 10.1007/s11423-021-10005-8.

[47] K. Khowaja *et al.*, ‘Augmented reality for learning of children and adolescents with autism spectrum disorder (ASD): A systematic review’, *IEEE Access*, vol. 8. Institute of Electrical and Electronics Engineers Inc., pp. 78779–78807, 2020. doi: 10.1109/ACCESS.2020.2986608.

[48] C. Berenguer, I. Baixauli, S. Gómez, M. de E. P. Andrés, and S. de Stasio, ‘Exploring the Impact of Augmented Reality in Children and Adolescents with Autism Spectrum Disorder: A Systematic Review’, *International Journal of Environmental Research and Public Health*, vol. 17, no. 17. MDPI AG, pp. 1–15, Sep. 01, 2020. doi: 10.3390/ijerph17176143.

[49] L. Desideri, A. di Santantonio, N. Varrucciu, I. Bonsi, and R. di Sarro, ‘Assistive Technology for Cognition to Support Executive Functions in Autism: a Scoping Review’, *Advances in Neurodevelopmental Disorders*, vol. 4, no. 4. Springer Science and Business Media B.V., pp. 330–343, Dec. 01, 2020. doi: 10.1007/s41252-020-00163-w.

[50] A. Ozdowska, P. Wyeth, S. Carrington, and J. Ashburner, ‘Using assistive technology with SRSD to support students on the autism spectrum with persuasive writing’, *British Journal of Educational Technology*, vol. 52, no. 2, pp. 934–959, Mar. 2021, doi: 10.1111/bjet.13063.

[51] A. H. Ziadat, ‘The extent to which autistic student’s special education centers use computer software’, *TEM Journal*, vol. 9, no. 2, pp. 798–805, May 2020, doi: 10.18421/TEM92-50.

[52] T. Stefanac and R. Colomo-Palacios, ‘NoOps - A Multivocal literature review’, in *Procedia Computer Science*, 2021, vol. 196, pp. 167–174. doi: 10.1016/j.procs.2021.12.002.

[53] M. Buchnat and A. Wojciechowska, ‘Online education of students with mild intellectual disability and autism spectrum disorder during the COVID-19 pandemic’, *Interdyscyplinarne Konteksty Pedagogiki Specjalnej*, no. 29, pp. 149–171, Oct. 2020, doi: 10.14746/ikps.2020.29.07.

[54] A. Stathopoulou, Z. Karabatzaki, D. Tsiros, S. Katsantoni, and A. Drigas, ‘Mobile apps the educational solution for autistic students in secondary education’, *International Journal of Interactive Mobile Technologies*, vol. 13, no. 2, pp. 89–101, 2019, doi: 10.3991/ijim.v13i02.9896.

[55] ‘AsIam.ie’. [Online]. Available www.asiam.ie (Access: Date 01 December, 2022).

1. Please note the use of the term “autistic people” rather than a “person with autism” to reflect the preference of autistic self-advocates and the neuro-diversity movement [55] [↑](#footnote-ref-2)