



**Gauci, A. (2011) *What is the role of ICT in the education of students with autism spectrum disorder in Kindergarten classes in Malta? An MA thesis in partial fulfilment of the Master of Arts in e-Inclusion (Learning, Disability & Technology) at King's College London.***

### **Abstract**

Research shows that Information and Communication Technology (ICT) has various potential qualities that make it appealing to individuals on the autistic spectrum. This qualitative multiple case study focuses on the role of ICT with students with autism spectrum disorder (ASD) at kindergarten level in Malta by taking into account the views of early years educators. Findings show that ICT use with students with ASD in kindergarten has a two-fold role: as a supportive learning tool and as a reward and reinforcing tool. ICT in early years education is viewed as harmful by some, particularly with regard to students with autism, as it is seen as exacerbating existing social communication, interaction and rigid behaviour problems. Notwithstanding a growing acknowledgement of the benefits of ICT use for students with autism, appropriate knowledge and training in the area is needed. Implications for future research would involve the re-examination of ICT's role as a rewards strategy in order to minimise any conflict this may have with its supportive role for students with ASD, as well as inquiry into how ICT can be integrated with other forms of tuition for young learners with autism.

### **Main findings**

ICT use supports learning, as exemplified by the study's participants. It supports formal literacy and numeracy skills, as well as other functional and social skills which are essential in the classroom. For literacy and numeracy activities, the most widely used ICT is the desktop computer and related computer-based methods and programs, such as Microsoft PowerPoint, as echoed in literature by Goldsmith and LeBlanc (2004). The interview data corresponds with research discussed in the literature review (Heinmann et al., 1995; Moore and Calvert, 2000; Bosseler and Massaro, 2003), where computers were used to enhance vocabulary acquisition and numeracy.

ICT also serves as a reinforcing tool which improves motivation and behaviour among students with autism. As the interview data shows, the use and promise of ICT is an effective behaviour strategy for students with autism. Despite the growing body of research (e.g. Schlosser, 2001; Schlosser and Wendt, 2008) regarding Augmentative and Alternative Communication (AAC) technology, the data analysis shows that ICT was not used as an AAC tool in the sites examined.

The interview data reveals that the students with autism in question have a special affinity with technology and respond positively to different technology types. This is supported by literature about ICT and individuals with autism (Goldsmith and LeBlanc, 2004; More, 2008). While this might not be true for all early years students with autism, technology's affordances for such students need to be considered when examining different educational approaches for them.

Despite the benefits of ICT use within early years settings, concerns about it may be hindering educators from making better use of technology in class. In several instances in the interviews, ICT activities were considered solitary activities that segregate students from their peers. The data also reveals some cases where students do not actively use ICT; rather the kindergarten assistant or learning support assistant controls it, such as during storytelling. While the students' young age – perhaps requiring more guidance by educators – must be taken into account, research suggests promoting activities that give students with autism a more interactive role when using ICT (Stephen and Plowman,



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2003). While some participants believe ICT in kindergarten offers students valuable possibilities, others see it as a threat to activities deemed to be more important. As the interview data shows, educational activities promoting communication and increased social interaction by students are prioritised. Therefore, some do not view ICT as capable of promoting communication development. This is reflected in the literature cautioning against excessive ICT use with students with autism (Ramdoss et al., 2011). The difference found in the data of these four class teams is noteworthy, where learning support assistants seemed more aware of technology types and uses for students with autism.

Research shows that positive intentions regarding ICT use do not necessarily translate into appropriate use (Webb and Cox, 2004), as educators also require appropriate skills and knowledge about what technologies to use and how to use them. In this regard, nearly all study participants wanted more training in technology for special educational needs.