

# iPads and Children with Special Learning Needs: A Survey of Teachers

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**Abstract:** Twelve special education teachers who have instructional experience using iPads with children with special needs completed a survey that queried their practices and perceptions. In general, teachers were positive about the value of iPads for children with special needs, particularly for children with autism, attention deficits and limitations of fine motor control. Special education teachers reported most frequently using iPads to promote student language and literacy skills, although mathematics learning activities were also commonly reported. Enhanced student motivation was the most frequently reported benefit of using tablet computers in school followed by instructional planning advantages. Tablet computers appear to have the potential to be an essential aspect of individual program plans.

## Introduction

While iPads were not initiated as educational devices or, indeed, promoted as particularly child-friendly, the device has quickly moved into schools (McCrea, 2010). iPads are promoted as particularly useful for children with special needs (Dixon, 2011). Ellis (2011) reported a case study in which iPads were used in school by children with intellectual disabilities and in a hospital setting by children receiving medical treatment. Based on interviews with key school and hospital personnel, benefits of iPads reportedly included self-directed learning, personalized learning, extension of learning, accessibility, increased engagement and enhanced social interaction. The ability to utilize the video function on the iPad and use the device as a video modeling tool has been shown to successfully enhance the teaching of academic skills to children with autism (Kagohara et.al., 2012). iPad applications that replace assistive technology can offer increased independence to students with poor fine motor skills, vision impairment, an intellectual or developmental disability (Shah, 2011) or communication difficulties (Gosnell, 2011). The Department of Education and Early Childhood Development in Australia (2010) published a guide to iPad applications appropriate for use with students with special needs.

Although iPads are increasingly common in schools and particularly popular in teaching children with special needs, the learning benefits of iPads can only be established via systematic investigation. Detailed description of a phenomenon is prerequisite to controlled and rigorous examination of the consequences of that phenomenon. This study describes the perceptions of teachers who have experience using iPads to meet the educational needs of children with learning challenges.

## Research Methods

A survey developed specifically for this study queried teachers who have used iPads with children with special needs. Early in the school year, surveys and invitations to participate were distributed to 15 teachers and teacher assistants who taught in an Education Support Centre (serving 21 students) which is linked to the mainstream primary school. Students enrolled in the Education Support Centre include children with intellectual disabilities, autism, visual impairment and cerebral palsy. There are six iPads within the Education Support Centre which have been allocated at two iPads per class group. Teachers have been in-service in use of iPads for students with special needs. Prior to in-service training teachers were at a variety of different stages of using iPads in the classroom. Some teachers were at the exploration stage, where they were just familiarizing themselves with the iPad together with using a variety of applications. Others were integrating the use of iPad in the classroom in a variety of ways as part of the daily programming. All teachers were beyond the occasional use of iPads to engage students. In-service

training included interactive workshops to demonstrate features of iPads (Figure 1) and to reflect on the benefits of iPad use in the classroom (Figure 2). Workshops focused on understand how iPads could be used in the classroom, security restrictions, student learning types and appraisal of a variety of iPad applications to stimulate effective learning. Most importantly workshops identified strategies for selecting and matching apps to students' individual educational goals (Newton & Dell, 2011) and asked teachers to reflect on “whether these technologies allow educators and students to do things in educational settings that they could not otherwise do, from a teaching and learning perspective” (Orrin & Nicole, 2011 p.42).

Twelve of the 15 teachers returned completed surveys. Ten respondents indicated that they used iPads with their students daily, one indicated nearly every day and one indicated weekly.



**Figure 1:** Interactive workshop for teachers in the use of iPads for students with special needs.



**Figure 2:** In-service of teachers - reflecting on the benefits of iPad use.

## Research Findings

Responses to open-ended survey items were organized in terms of similarities and tallied. In many cases, teachers indicated more than one response to an item and thus tallies frequently exceed twelve (i.e., the number of respondents). With respect to the open-ended survey item For what curriculum areas do your students use iPads, 12 responses indicated literacy, 11 mathematics and four social skills and communication. Table 1 provides a summary of teacher report of the types of students who responded most favourably to iPads. In response to the survey item What sorts of students appear to respond least favourably to the iPads, ten teachers indicated that they had not encountered a single student who did not respond well to using an iPad in school, although one respondent indicated that a student with Down Syndrome did not appear to enjoy using an iPad and another respondent noted lack of enthusiastic iPad use from students with limited cognitive development, implying intellectual disabilities.

| Teacher Response   | Number of Responses |
|--|---------------------|
| All students   | 6                   |
| Students with autism   | 3                   |
| Students with limited fine motor skills                          | 2                   |
| Students with attention problems                                 | 2                   |
| “Boys more than girls”   | 1                   |
| “Students who require enjoyable activities to work toward”       | 1                   |
| “Students who need multisensory input, auditory and visual cues” | 1                   |

**Table 1:** Teacher Response: What sorts of students appear to respond most favourably to the iPads?

Open-ended survey items queried perceived benefits and challenges of using iPads with primary school children with special learning needs. Table 2 provides a summary of teacher response to the survey item querying perceived benefits. The most common response from teachers focused on student motivation. With respect to teacher perception of problems using iPads with children with learning difficulties, eight respondents noted the cost and the limited number of iPads available in the classroom, three respondents noted student misuse of the tablet (e.g., for noneducational purposes), two respondents mentioned that teaching staff do not understand effective use of the device and two respondents stated that the iPads could be damaged by the children.

| Teacher Response   | Number of Responses |
|--|---------------------|
| Student motivation and engagement in learning                      | 10                  |
| Alternative way for students to demonstrate ability                | 3                   |
| Facilitates communication skills                                   | 4                   |
| Interactive Resource (e.g., direct and immediate student feedback) | 3                   |

**Table 2:** Teacher Response: What do you see as the benefits of iPads for children in school?

## Discussion and Implications for Practice

In general, teachers were extremely positive about the utility of iPads for primary school children with special needs. Student engagement was the most common theme in survey responses (Figure 3). Ten of the twelve teachers who responded to the survey claimed that they had not encountered a single student who did not enjoy using an iPad in school. Half of the teachers did not immediately identify a particular type of students who responded more favourably than other students to the iPad. The novelty effect has been used to explain increased student motivation associated with emerging technologies (Taormino, 2011). While new toys are often preferred over old toys, the characteristics of digital technologies, generally, and the iPad, specifically, may provide such extreme variation (e.g., new apps and complex apps) that students could benefit from the novelty effect for extended periods of time. As Papagiannis (2010) suggested, the novelty effect “does not necessarily wear off as the technology develops and becomes more established. The effect is not created by the technology itself but by the content created for it. As the technology develops further, content creators will (should) continue pushing the boundaries and create novel, compelling content that creates wonderment and curiosity.”

Collectively, teacher survey responses reflected the observation that iPads reinforce core curriculum (i.e., literacy and mathematics) but do not introduce new learning content. This may be an artefact of the specific ways in which the teachers employed the tablets with students with special needs or, alternatively, it may be that, at least in some cases, highly engaging technology cannot replace direct human interaction in the processes of learning. As theorists have long argued, human learning is essentially a social process (Vygotsky, 1978). One teacher wrote: “iPads are a fantastic tool but like any technology they can be over-used and expected to teach.” As instructional applications of technology continue to evolve, mastering new content without a teacher may be increasingly realistic for children with special needs.



**Figure 3:** Student engagement and motivation is high when using the iPad.

Teachers indicated that the iPad was particularly useful to enhance children’s communication and social skills. In this regard, the iPad may not necessarily be a solitary or asocial experience. In some cases, the iPad was used as a reward for prosocial student behaviour. In other cases, language applications were viewed by teachers as facilitating communication skills. The teachers surveyed provided no support for the contention that personal tablets may lead to social isolation. On the contract, one teacher wrote “I feel as a communication device for non-verbal children they [iPads] are brilliant and can open up doors of communication for these children, making their life so much better.” For children with autism apps available for use with iPads have been described as “superior to traditional communication devices in the areas of durability, cost, and appearance” (Price, 2011). Not surprisingly, identified iPad limitations were remarkably similar to the reservations expressed by teachers to the educational introduction of any emerging technologies, -- that is, cost and lack of teacher skill (Wang & Reeves, 2003). As one teacher wrote: “Government needs to review application downloading to allow broader licences otherwise becomes too expensive and limiting.” No teachers, however, mentioned insufficient research establishing the effectiveness of iPads as an instructional tool for children. For teachers, daily interactions with students using iPads may have established the value of personal tablets for supporting the learning and development of children with special needs. Nonetheless, as Taormino (2012) observed, “The adoption of iPads in schools is something of a curiosity. How a tablet device contributes to learning over other delivery devices (PC, laptop, etc.) is still an open question.”

## References

- Department of Education and Early Childhood Development. (2010). *iPads in special education: Suggested applications and activities*. Melbourne, Victoria, Australia; Communications Division for Student Wellbeing.
- Dixon, D. (2011, October 11). School matters: The Future of apps in the classroom. *The ASHA Leader*. Retrieved 2012, from <http://www.asha.org/Publications/leader/2011/111011/School-Matters--The-Future-of-Apps-in-the-Classroom.htm>
- Ellis, S. (2011). Teaching the future: How iPads are being used to engage learners with special needs [online]. *Screen Education*, 63, 60-64. Retrieved from <http://search.informit.com.au/documentSummary;dn=445341941466124;res=IELHSS>
- Gosnell, J. (2011). Apps: An emerging tool for SLPs. *ASHA Leader*, 16(12), 10-13. Retrieved from <http://search.proquest.com/docview/900449669?accountid=10382>
- Kagohara D.M., Sigafos J., Achmadi D., O'Reilly M., & Lancioni G. (2012). Teaching children with autism spectrum disorders to check the spelling of words, *Research in Autism Spectrum Disorders*, 6(1), pp. 304-310. doi:10.1016/j.rasd.2011.05.012
- McCrea, B. (2010, January). Measuring the iPad's potential for education. *T.H.E. Journal*. Retrieved from <http://thejournal.com/articles/2010/01/27/measuring-the-ipads-potential-for-education.aspx>
- Newton, D.A., & Dell, A. G. (2011). Mobile devices and students with disabilities: What do best practices tell us? *Journal of Special Education Technology*, 26(3), 47-49. Retrieved from <http://search.proquest.com/docview/910326626?accountid=10382>
- Orrin, T. M., & Nicole, R. O. (2011). Teaching and learning with iPads, ready or not? *TechTrends*, 55(6), 42-48. doi: <http://dx.doi.org/10.1007/s11528-011-0540-6>
- Price, A. (2011). Making a difference with smart tablets: Are iPads really beneficial for students with autism? *Teacher Librarian*, 39(1), 31-34. Retrieved from <http://search.proquest.com/docview/902627650?accountid=10382>
- Shah, N. (2011). Special ed. pupils find learning tool in iPad applications. *Education Week*, 30(22), 1-1, 16, 17. Retrieved from <http://search.proquest.com/docview/856809642?accountid=10382>
- Papagiannis, H. (2010, November). Notes in the cloud. Retrieved from <http://notes-in-the-cloud.blogspot.com.au/2010/11/ar-novelty-effect.html>
- Taormino, M. (2011, May). iPad: Valuable tool or technolust? Follow the carpenter's rule! *Las Vegas Technology in Education Examiner*. Retrieved from <http://www.examiner.com/technology-education-in-las-vegas/ipad-valuable-tool-or-technolust-follow-the-carpenter-s-rule#ixzz1qrcLLOzH>
- Taormino, M. (2012, March). Ipad 3: Evolutionary or revolutionary? *Las Vegas Technology in Education Examiner*. Retrieved from <http://www.examiner.com/technology-education-in-las-vegas/ipad-3-evolutionary-but-not-revolutionary?CID=obin site>
- Vygotsky, L. S. (1978). *Mind and society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.
- Wang, F., & Reeves, T. C. (2003). Why do teachers need to use technology in their classrooms? Issues, problems and solutions. *Computers in the Schools*, 20(4), 49-65. doi: 10.1300/J025v20n04\_05