Investigating Possibilities to Provide Collaborative Learning Spaces in Libraries for Children with Special Needs

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Abstract: While opportunities for technology-based collaborative learning have reached out to a large majority of the community, not everyone has been able to benefit from the growth of collaborative learning. Computer supported collaborative learning (CSCL), in particular, has great potential for children with special needs in terms of building social interaction and collaborative skills through the use of various information and communication technology (ICT) tools. This paper presents a preliminary investigation on how library spaces could be utilised to encourage collaborative learning skills for children with special needs. Gaps in literature with regards to the usage of library spaces for this purpose as well as the limitations of current tools in terms of language diversity are also explored. Future research directions are also presented to position plausible strategies to use libraries as spaces for collaborative learning for children with special needs, using appropriate tools to support their learning process and experience.

Keywords: children with special needs; library spaces; collaborative learning; ASD; CSCL

1. Introduction

Collaborative learning as an effective learning method is increasing in popularity as rapid advancements of technology have enabled communities all over the world today to collaborate as a group in various fields and areas of interest at literally a click of a button. Collaborative learning is very much grounded in the social theory of learning and has a large focus on the idea of meaning making within a group of learners (Stahl, 2005) as well as in the social constructivist theory which strongly emphasises on "human dialogue, negotiation and collaboration" (Bonk & Cunningham, n.d.). While these collaborative learning opportunities have reached out to a large number of people, there still exist groups of people who have yet to benefit from the full potential of technology for learning – children with special needs.

Individuals with special needs is defined as persons with a "diverse range of needs often caused by a medical, physical, mental or developmental condition or disability" and can "include cognitive difficulties, physical or sensory difficulties, emotional and behavioral difficulties, and difficulties with speech and language" (Special, n.d.). Previous research has also been indicated that the environment around children with special needs is not always conducive for their learning needs and can prove to be extremely challenging for them (Alper, Hourcade, & Gilutz, 2012). Interactive technologies can be seen to be able to 'play a positive role in helping children manage these challenges, from communicating with others, to learning in school, to experiencing and enjoying the world" (Alper, Hourcade, & Gilutz, 2012, p.1). While there are various conditions classified under the term 'special needs', this paper concentrates on children who have been diagnosed with Autism Spectrum Disorders (ASD).

2. Collaborative Learning Opportunities for Special Needs in Libraries

Libraries are a space for public use and play an important role to provide information as well as learning spaces for learners in terms of information searching and conducting their learning process. Through the paradigm changes of libraries from being reader-centered, book-centered, and learning-centered (Bennet, 2008), it is noted that these changes show that libraries are breaking down its walls and providing access to more people, and it is through these changes that the call to address the needs of users with special needs is heightened. In Malaysia, provisions for children with special needs are not extensively offered in public libraries. There is a pending necessity to conduct studies on local libraries in Malaysia, to understand how children with special needs can be included and encouraged to learn collaboratively using library spaces. Pustaka Negeri Sarawak (PNS), for instance, is the biggest public library in the state of Sarawak in East Malaysia, and it has facilities that can cater to individuals with physical disabilities and children. The facilities at PNS include a designated room for children equipped with computers for children to access educational games, children friendly furniture as well as enough space to encourage interactivity among children. There is also a room equipped with tools to aid users who have disabilities with sight, speech as well as physical immobility. However, the facilities available in the library are also limited, most can only cater to one individual at any one time. The space allocated to these individuals is also restricted to one room, and it targets a more mature group of users, not children. To date, there are no allocated spaces for children with learning disabilities at all within PNS, and unfortunately, there are no provisions for collaborative learning for special needs. In the northern part of Sarawak, Pustaka Miri is the biggest local library available, and it also provides a special needs room for its users. However, like PNS; these services are limited to users with physical special needs and not for children with learning disabilities (Official Website of Sarawak State Library, 2009). Libraries within the other divisions in Sarawak such also do not provide such services to users with special needs (LibraryNet- Where Minds Meet, nd.), highlighting the fact that this initiative has yet to be developed in Sarawak.

To date, there is clear that there is a gap in literature on the usage of libraries as learning spaces for users with learning disabilities and on the measurement of success or failure about how these spaces were actually used. Accordingly, there is lack of reporting on studies that looked into the usage of library spaces as an area to encourage collaborative skills for children with special needs such as ASD indicates that there is a need to further research the usage of library spaces for this purpose. One aspect that should be taken into consideration is the establishment of a learning space which incorporates the usage of various ICT tools that can assist with the learning development of children with special needs, which simultaneously encourages collaborative learning. Research on the usage of multitouch tabletop technology such as SmartBoard, DiamondTouch, Microsoft Surface and FTIR (Frustrated Total Internal Reflection) in encouraging social skill training and collaborative interaction amongst children (Chen, 2012) has shown that these tools are beneficial for children with ASD. Chen (2012) observed increased interaction, communication, participation and co-dependence amongst the users who found that it was more comfortable to work on the multitouch table together due to the setting of the tool. Multitouch tabletops were also reported to support intuitive and natural interactions, while allowing for rough motor skills and imprecise manipulation (Chen, 2012). There has also been research conducted on the use of physical-digital interaction tools to encourage cooperation and social interaction in children with special needs (Christensen, Monsen, Hansen, Anderson, & Safiri, n.d.). The research conducted by Christensen et al. showed how the painting application was capable of encouraging students with special needs to collaborate with one another in terms of task division and was a good tool to use when encouraging social interaction amongst group members. Although the prototype of the tool was tested on a group of students without special needs, the relevance of the test on children with special needs was gauged by teachers for special needs children who had also provided the researchers with the necessary information needed to design the prototype (Christensen et al., n.d.).

Several aspects need to be considered when designing a learning space which can accommodate the needs of children with special needs. The design of the existing Children Infotheque in PNS (Official Website of Sarawak State Library, 2009) could be used as a foundation for designing learning spaces for children with ASD, and could be further improved in terms of creating a layout which allows for a mix of larger spaces with smaller ones to facilitate children who need to withdraw to different spaces while in an activity. A low sensory-stimulus environment within the library space

in PNS to help children with ASD who suffer from problems with sensory integration or perhaps sensory defensiveness (Scott, 2009) should also be designed. The space should also reflect a pleasant, well-proportioned area with plain, bare walls decorated in muted soft colours for the purpose of introducing them with stimulus which consists of wall displays of work and information, which may result in suiting up the learners' needs (Scott, 2009). Apart from that, the incorporation of ICT tools in the learning space at the Children Infotheque at PNS also allows for children to collaborate with one another while working on activities, which is an aspect that can be mirrored in the design of the learning space for children with special needs within PNS.

3. Conclusion

The evolution of libraries are testament that societies today want learning spaces that have more of a human touch and transcends boundaries, be it both physical and virtual. Trends in information management today allude to the vast potential of using libraries as spaces for collaboration for children with special needs. It is indeed research area which has been overlooked, and more attention should be given towards creating a collaborative learning space that children with special needs can benefit from, both in terms of social interaction and enhanced learning experiences.

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