

Identifying special needs of autistic children: proposed implications for libraries

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ABSTRACT

One of a public library's main objective is to meet the needs of the community through effective delivery of services. However, the community of individuals with special needs are often overlooked and underserved. Parents of autistic children disapprove of the idea in exposing their children to public places such as the library for fear of disrupting other patrons. But just like normal people, autistic individuals will age in this world thus realizing there are not many public places available for them to venture and be a part of the community. Public libraries have now taken initial steps in making libraries a user-friendly place for autistic children. This paper identifies the needs of autistic children in normal classroom situations and proposed that these findings be e used by libraries when planning services for special groups.

Keyword: Libraries; Special needs requirements; Autism

INTRODUCTION

There is an increase in the population of special needs children, specifically autism as recorded by the Centre for Disease and Control Prevention (CDC, 2012). In 2012, there is a prevalence of one in every 110 children in the USA and 1 in every 150 children in Malaysia (NASOM, 2012) which puts the figure approximately around 47,000 children in Malaysia diagnosed with Autism Spectrum Disorders (ASD). According to Carrona, Milunsky and Tager-Flusberg (2008), the severity of these disorders are broad, which includes impairments in social interactions, difficulties in communication, cognitive delays and behavioural problems that include restricted interests and repetitive behaviours. All these pose challenges for educators to deliver an effective learning process and hinder children with autism to excel academically.

Schools also play an important role in emphasizing the relationship between school libraries' services and autistic children. Weeson and Keefe (1995) stated that the inclusion of special needs children in a general education setting makes it inevitable for library media specialists to adopt and integrate the information skills curriculum with classroom curriculum. Integration that acts as a curricular concept provides the platform for all instructions to be embedded into meaningful context and no special considerations will be isolated. This means children with autism and their special requirements will receive the same service and access to knowledge accorded to normal children. Inclusion

emphasizes on the maintenance of children with special needs in general education environment. This means children with autism should be included with their peers and not be segregated into an isolated group of users. Thus, this paper aims to identify the requirements of children with autism that should be integrated in local school libraries.

RELATED LITERATURE

It is important to first consider the behavioural characteristics of autistic children and to understand the types of services required by them from their libraries. When behaviours associated with autism such as social cognition and repetitive behaviours are not managed and addressed efficiently, they will lead to anxiety, anger, irritation and also frustration, which eventually results in an outburst of challenging and disruptive behaviours. Such disruptive behaviours would be difficult for other library users. An approach is implemented by a project called "Libraries and Autism: We're Connected" where a collaboration is established between the Scotch Plains Public Library and the Fanwood Memorial Library in the United States. The project provides resources such as customer service training and materials in websites for the library staffs to equip them with the knowledge on how to serve individuals with autism and their families more effectively. It focuses on what one needs to know about autism, the appropriate techniques in offering inclusive services to the increased yet underserved population (Dachel, 2011).

Another aspect that needs to be taken into consideration is the kind of environment that should be created to make libraries a suitable place of knowledge hub for autistic children. While typical and traditional libraries are often represented with words and books, a library in Leeds, United Kingdom employed a totally opposite approach. They use small and large pictures, brightly-coloured and animated to appeal to their target users, autistic children (Wainwright, 2009).

The picture exchange communication system, normally called PECS (Barnes, Dunning and Rehfeldt, 2011) is a systematic treatment developed for children with autism who suffer from communication disorders. It involves educating the autistic individuals to communicate with their parents or teachers by exchanging pictures or icons that will be attached with velcros and special satchels. This is also one of many approaches used in the library in Leeds.

Working towards creating a suitable library environment for autistic children is not easy as it involves the process of adapting programs and techniques non similar to normal children, building relationships between the library specialists and many other processes but such steps are necessary to offer the best possible service for this group and also to encourage the inclusion of autistic children in local libraries (Staff, 2011).

METHODOLOGY

As there is still a lack of libraries in Malaysia that offers services to children with special needs, interviews and observations are conducted to study and determine the requirements needed by autistic children in creating an educational environment for them. At the preliminary stage, telephone interviews were conducted with thirteen librarians from state public libraries including the National Library of Malaysia to obtain an overview

of the facilities provided for children with special needs. Most of the state public libraries have a children's section which is located on the ground floor for easy access. There are two libraries, including the National Library of Malaysia and the Selangor State Library, that provides educational games and an interactive environment for children. However, there is no provision of service specifically for children with special needs. At the school level, there is no specific session allocated for these children to go to the school library. Thus we have no opportunity to observe their behaviour in the school library. One of the teachers told us that their behaviour would disturb the other children and besides that they do not like books. Therefore, this study identifies the needs of autistic children in normal classroom situations and proposed that these findings could be made used by libraries when planning for services for special groups.

Three approaches were used in this study. The first involved interviews with parents or guardians of autistic children. This activity is done to seek a clearer understanding and perception of the lives of autistic children and how they perform academically. From this activity, requirements will be generated that serve as guideline in creating a learning environment for them. Five parents were interviewed from 29 September 2011 until 24 October 2011.

Data gathered was transcribed into speech scripts and interpretational analyses were performed. In interpretational analysis, patterns or themes were identified in the form of threads, constructs or commonalities within the collected interview data to explain a given occurrence or phenomena. Due to its non-numeric nature, the task produced results in textual or narrative form. The card sorting method was employed in the interpretational analysis to help in the process of looking for patterns or themes. Table 1 summarizes the demographic data of participants involved in the interview process.

Table 1: Demographic Data of Respondents

Name	Occupation	Name of Child	Age of Child
Mrs Aziah	Professor	Amar	12
Mrs Batrisya	Lecturer	Badrul	9
Mrs Cindy	Housewife	Carlos	9
Mrs Diana	Occupational therapist	Danny	7
Mrs Effy	Administrative officer	Erman	13

The second approach involves observations of both verbal communication and non-verbal communication of the children in their schools. Rosenstein (2002) states that good observations are not specifically focused on the subject's verbal communication but also on movements and body language, which indicates the subject's state of mind during an interaction and how they respond towards an occurrence in a given environment. Thus, this activity is conducted to observe the behavioural traits, communication and literacy skills of autistic children amongst their peers and teachers. Three sessions were recorded in three weeks where the aim was to observe the behavioural traits of five autistic children in learning and communicating with their peers and teachers. Five of the students were children of parents interviewed in the previous phase. Each observation session was conducted in two hours through video cameras and the videos were then transcribed in a narrative text.

The third approach involves observing the childrens' use of technology to find out its impact on their learning performance. In this context, the children are given the

opportunity to explore the usability of a technological device (a computer or a tablet or a smart phone) and their behavioural receptions are recorded as feedback. This is to investigate the effectiveness of technological devices towards their learning performance when included in the library services. Dolah, Wan Yahya and Toh (2011) found that the use of multimedia elements through technological devices helped people with ASD to learn easily because of the appeal in the diversity of learning preferences.

This particular observation process was also conducted in three consecutive weeks with five students. Each student was placed in an isolated room and was instructed to use three applications available in either a tablet or a smartphone. Their reactions and how they engage with the device were recorded and later transcribed into a textual report. The card sorting method was again applied to analyse the data followed by data coding. In qualitative studies, coding is defined as the process of translating raw data into meaningful categories or themes from the interview notes or documents from field observations. This is to ensure the information gathered will act in relation to the research questions in the study. Descriptions of behaviour, statements of ideas, feelings and thoughts are identified and coded into themes.

RESULTS

(a) Parents' Perspectives about their Autistic Children's Education

The aim of the interviews was to obtain in-depth, information about autistic children. Results showed that the mothers have greater concerns about their children's academic future. The main issue is the dissatisfaction that most parents have towards schools. It ranges from disapproving the teaching method practiced by a particular teacher that a parent sees as being unfit for a child with ASD to the lack of appropriate teaching aids or areas to cater for the needs of autistic children.

There are very few special education schools that specialize in providing education to autistic children. The effective teaching strategies for autistic children are different and it is a strategy most teachers are untrained for. This is apparent with one parent, Mrs Aziah. After her son was diagnosed with autism, she tried searching for schools that specialize in teaching autistic children. Mrs Aziah enrolled her son in MAGIC (Malaysian Association of Guardian for the Intellectually Challenged) Centre in Damansara but did not stay there because she noticed the centre did not have a proper approach in providing special education for her child.

"Once I asked his teacher do they have some sort of formal evaluation to assess the children there but apparently they don't. They don't collect any sort of data. Plus with some management problems, I decided to take my son out of the school after just half a year of schooling." (Mrs Aziah)

Another parent, Mrs Batrisya expressed her concern for the teachers to find more creative ways in trying to overcome challenges faced with teaching autistic children. It includes improving the teacher-student communication, use of learning aids through videos or books and facilities to create a suitable learning and playing environment such as larger classrooms.

"Badrul does not want to read the Quran. He finds it boring because of the repetitive technique. That is why it is a little bit of a challenge for these teachers. They always have to come up with new ideas how to encourage and keep him interested long enough to know how to read the basic phrases of the Quran." (Mrs Batrisya)

Another concern of most parents in Malaysia is the lack of awareness and how challenging it is for them to find support groups that could share and educate other parents raising autistic children. One parent expressed her concern on the low level of awareness in Malaysia.

"In Malaysia, only when the child is 5 years old can he or she be diagnosed with Autism. We are still far behind in terms of being publicly aware about Autism compared to other western countries. I believe that if a child were to be diagnosed during the early years, he or she can be given early intervention before it is too late." (Mrs Batrisya)

(b) Observing Children with Autism in Class

The observation was focused on autistic children's learning behaviour in a classroom and how the teachers conduct lessons for them. From this phase it can be deduced that autistic children's behaviour and how they respond towards the learning environment around them impacts the learning performance in class. It was observed that the children showed lack of interest with the lessons conducted in the classroom, they lose focus easily due to their short attention span, they seek appreciation and praises to keep them motivated in completing a given task and teachers have to use firm commands to get their co-operation.

The following sections highlight the behavioural traits observed amongst autistic children.

Lack of Interest

The first result showed that the subjects display lack of interest with the lessons conducted by the teachers. From the observation made, although the teacher included a laptop as part of the teaching aid to capture the subjects' interest, the methods used were not interactive and do not require active participation from subjects.

During this learning session, five out of seven students in the classroom appeared to be reacting passively towards the use of the laptop by the teacher. When the teacher started the lesson by showing a video on the laptop, they showed no signs of interest and stayed at their desks while the remaining two classmates gathered around the laptop. Interactions were also minimal amongst their peers and the teacher. In one instance, the teacher directed a question to a student but received no response. The teacher had to use firm persuasions to get several of his students to participate actively in class. This is further emphasized by the teacher, who commented:

"Amar is an intelligent boy. But sometimes his short attention span causes him to easily get bored with a task assigned at hand. I need to always remind him strictly that there is a consequence for not completing my task." (Teacher)

Motivation

It was observed that the children have to be coerced into completing the tasks because they showed no interest with the activity given. Even after being reprimanded, they would follow the teachers' instructions in a hurried manner just so that they can finish their task as soon as possible and resuming with other activities they find interesting. Therefore they need to be consistently motivated through rewards and appreciation by the teachers to ensure that they would answer all the question on the examination paper properly.

This is evident with Badrul in one of his learning sessions. He is instructed to complete a task but throughout the process, the teachers had to constantly make him stay focused on the task at hand. Sometimes Badrul would leave his task unattended and play with other things but upon strict warnings from the female teacher who said that Badrul will not be allowed to go home on time, he would quickly resume his task. Another method used by the teachers to encourage Badrul to stay focused and complete his task is by giving praises and appreciative remarks to which Badrul was seen to make an effort to concentrate.

"Finish your exam paper and you can go home at 1 pm." (Teacher)

"Excellent! That is a very good picture." (Teacher)

Firm commands when Giving Instruction

Due to the children's short attention span, they lose focus easily and it is difficult to sustain their attention long enough to complete the task. Constant strict reminders by the teachers helped in getting the children's attention back to their task. It is also part of managing behaviour challenges displayed by children with ASD to ensure a classroom is managed efficiently. This is why special educators and teachers adopt this firm approach when delivering lessons to maintain a controlled environment.

For Amar, observations were carried out during his Art examination. Each student was given a drawing to colour and Amar showed the least interest or excitement with the task. He would scribble on the desk instead of colouring on the paper and repeatedly his teacher would reprimand him for it. Amar lacks the enthusiasm to colour like his other classmates and would only resume colouring when reminded firmly by his teacher. At times, the teacher would guide and direct him on which part to colour and he would follow the directions given. The teacher remarked that Amar needs persuasion when he is given a task because even though he is capable of completing it, he needs constant strict reminders by his teacher:

"With Amar, you always need to keep an eye on him. He easily loses his focus and would start to daydream. Sometimes you need to use a strict tone of voice to shake him out from his daydreaming." (Teacher)

(c) Observation of Children's Behaviour with Technology

From the observation, it can be summarized that using an electronic gadget would be a suitable intervention in assisting the children to sustain their learning behaviour. What

appeals to these children is the interactive learning environment offered by the gadgets. However, to ensure that a gadget is efficient in assisting the teachers for the children's learning process, several suggested features need to be considered and serve as a guideline when adapting such applications. There should be support for free personalization features and there must be motivational elements to keep the children focused in completing the tasks. The lesson plan content must be suitable for the children.

Personalization

When the children were instructed to try out the first application, all of them displayed the behavior of waiting to be guided on how to execute the task. Upon setting up the features and demonstrating the steps for completing the task, it was observed that the children would return to the main menu, select their own preference of features and then start playing with the application. For example, when the colour Pink was chosen as a background for Carlos, he reacted negatively and insists the background colour to be Blue. The same pattern of behaviour is seen with Erman when a female character was chosen before starting an educational courseware called *SuperWhy*. He refused to play it and showed instant dislike towards the game. Even after much coaxing, he would close his eyes and refused to look at the iPad monitor.

"Enough. I don't want." (Erman)

Another example can be seen when Danny would repetitively return to the main menu to change the level of difficulty of the application. When told to complete the "Beginner's Level", he insists on playing the next level because it was not challenging enough to maintain his interest. This shows that children wants the freedom of being able to personalize the features of a given courseware to their liking and interest.

"Why didn't you want to play with SuperWhy?" (Researcher)

"It was too easy." (Danny)

Motivation

Motivation is also an important factor for autistic children. For some of the tasks from the applications that the children did not want to complete, the researcher had to persuade and motivate the children to keep them interested in completing it. Children with ASD lose focus easily due to their short attention span and they seek appreciation and praises from the teachers as part of motivation to complete any task. According to Koegel, Schreffirnan, Good, Cerniglia, Murphy et al. (1989), children with ASD are noted for their lack of motivation to learn new tasks and in general, participate in any social activities or learning environments. The lack of motivation is due to either their temper tantrums, short attention span, fidgeting, and attempting to leave the learning situation. Thus it is important to constantly encourage and motivate them through rewards and appreciation to ensure the children are pro-active in a class learning session.

From the observation, it can be seen that offering some sort of a reward is effective in getting cooperation from the children. One example is observed from Badrul when he finally followed the instruction of the application after being promised that he will be rewarded with a swimming session with his friends.

"If you complete this question, you can play with the game." (Teacher)

"Badrul, no swimming on Friday." (Teacher)

"No?" (Badrul)

"If you don't follow the instruction then you cannot follow your friends swimming. Do you want to go swimming?" (Teacher)

"Yes." (Badrul)

"Okay, follow the teacher's instruction." (Teacher)

Another example is seen when Erman refused to complete the task given by one of his teachers. He finally agreed to follow the directions after being promised a reward for completing the task.

"You need to complete this question first." (Teacher)

"No. I want to play Angry Bird." (Erman)

Lesson Plan

It is important that in creating an educational courseware for autistic children, the content of the lesson plan must be suitable to their age and cognitive understanding to ensure that the lesson goals are achieved. The children need to understand the selected content to ensure the learning process is effective. It is also important to emphasize that creating the most optimal educational courseware for these children will enhance their learning process and teachers are able to deliver an effective teaching process in the academic environment.

DISCUSSION AND CONCLUSION

Requirements obtained from previous sections are now translated into features that can be adopted by local libraries to establish an environment suitable for autistic children.

Sensory Room

Multisensory rooms were first derived from adults with mental disabilities living in residential environments but have since been adopted by special schools that cater for children with various disabilities and impairments. A study conducted by Bozic (1997) identified the ways of constructing and translating sensory elements into new educational context. Since then the adaptation of multi-sensory rooms have made an impact in the area of special education. Bozic (1997) proposed an interpretive repertoire that schools or educational environment can adapt in creating the sensory rooms as illustrated in Figure 1. While public schools do not have the allocation to create sensory rooms, these can be implemented in public libraries thus making them accessible and children-friendly for children with special needs.

The room is a comfortable place

Gentle
Quiet

Positive emotional reactions

Fun
Enjoy

Softness warm		Happy Pleasure
	<p>The child makes decision</p> <p>Choice Free choice Led by the child Following the child communication</p>	
<p>The child relaxes</p> <p>Relaxing Soothed Calm down Wind-down Take it easy passive</p>		<p>Adult and child physically close</p> <p>Bodily contact Physical contact Massage Supportive proximate</p>

Figure 1: Child-led Repertoire in Creating Sensory

Picture Exchange Communication System

The picture exchange communication system (PECS) is a successful communication system for children suffering from language delays, particularly in autistic children. For a child who is lost in the process of processing normal languages and social cues, pictures represents a new form of speech and understanding for them. For example, to discipline a child on proper table manners, cue cards with pictures of cutleries are used to teach them. Similarly, bathroom pictures are used for "May I go to the bathroom?" As words and sentences complicate the process of understanding for autistic children, libraries for autism should support PECS and other pictorial representative features (Wainwright, 2009). These kinds of teaching aids emphasize on exercises with semantic knowledge that are represented by pictures or visual aids to heighten the understanding of the children. This approach allows for the students to make a connection between the printed text and its meaning.

Room of Practical Activities

Children with ASD are typically unresponsive to conventional approaches of teaching methods and reading skills. They are more responsive towards practical approaches in teaching where hands-on activities will occupy them and the chances of the children losing interest are low. This is further supported by one parent when she notices how practical training greatly impacted her son's learning performance.

"The learning process in the kindergarden are all practical-oriented, the teachers would teach the Islamic education using practical exercises such as how to perform ablution, reciting prayers that are good for daily practice and they also use the Qiraati (dictation) method in Quran reading." (Parent D)

Computer Technology

Computer-based intervention (CBI) programs are successful teaching aids for students with autism. The features provided by these programs such as multisensory interactions, controlled and structured environments, use of multilevel interactive functions will assist the students when working with computers. By incorporating these technologies in the libraries, autistic children are more encouraged and interested in making libraries a familiar place to gain knowledge.

This benefit of computer technology in academic environment for children with autism is further supported by Goldsmith and LeBlanc (2004) that indicated the use of computers as interventions results in an increased attention span, decreased of inappropriate and disruptive behaviour and in some cases even increase the learning rate as opposed to traditional and conventional methodology of teaching.

This study identifies the requirements needed in creating an optimal environment in schools catering for children with special needs and this include libraries. Libraries could assimilate the various elements suggested and incorporate them when providing services. Results showed that while there is still no such services available in local libraries for autistic individuals, its implementation is possible once user requirements and their special needs are successfully translated into the physical and educational context. Results suggest that local libraries should develop multisensory rooms, adopt a picture exchange communication system, offer practical activities and incorporate computer technology within the precinct of the library.

REFERENCES

- Barnes, C. S., Dunning, J. L. and Rehfeldt, R. A. 2011. An evaluation of strategies for training staff to implement the picture exchange communication system. *Research in Autism Spectrum Disorders*, Vol.5, no.4: 1574-1583
- Bozic, N. 1997. Constructing the room: multi-sensory rooms in educational contexts. *European Journal of Special Needs Education*, Vol.12, no.1: 54-70.
- Caronna, E. B., Milunsky, J. M. and Tager-Flusberg, H. 2008. Autism spectrum disorders: clinical and research frontiers. *Archives of Disease in Childhood*, Vol.93, no.6: 518-523.
- Dachel, A. 2011. *Libraries and autism : Connected*. Available at: <http://www.ageofautism.com/2011/07/libraries-and-autism-connected.html>.
- Goldsmith, T. R. and LeBlanc, L. A. 2004. Use of technology in interventions for children in autism. *Journal of Early and Intensive Behaviour Intervention*, Vol.1, no.2: 13.
- Dolah, J., Wan Yahaya, W. A. J. and Toh, S. C. 2011. A preliminary investigation : Potential of interactive multimedia learning awareness (IMLA) in enhancing awareness of autistic characteristics among parents and society in Malaysia. *Electronic Journal of Computer Science and Information Technology*, Vol.3, no.1.
- Koegel, R. L., Schreffirnan, L. A. Good, et al. 1989. *How to teach pivotal behaviours to children with autism : A training manual*.: University of California Press: 3-38.
- NASOM. 2012. *About autism*. Available at: http://www.nasom.com.my/index.php?option=com_content&view=article&id=52&Itemid=53&lang=en.
- Rosenstein, B. 2002. Video use in social science and program evaluation. *International Journal of Qualitative Methods*, Vol.1, no.3.

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- Staff, S. L. J. 2011. *ALA Annual 2011 : Serving teens with disabilities*. Available at: http://www.schoollibraryjournal.com/slj/home/891142312/ala_annual_2011_serving_teens.html.csp.
- Wainwright, M. 2009. *Autism : Libraries log on to a winning formula*. Available at: <http://www.guardian.co.uk/society/2009/jul/15/autism-libraries-boardmaker-software>.
- Wesson, C. and Keefe, M. J. 1995. *Serving special needs students in the school library media center.*: Greenwood Publishing Group.

ABSTRACT

The purpose of this study is to explore the special needs of autistic children in the school library media center. The study was conducted in a school library media center in a small town in the state of Ohio. The study was conducted over a period of six months. The study was conducted in a school library media center in a small town in the state of Ohio. The study was conducted over a period of six months. The study was conducted in a school library media center in a small town in the state of Ohio. The study was conducted over a period of six months.

Keywords:

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