

A MULTIMEDIA-SUPPORTED ENVIRONMENT TO ASSESS WHETHER PEOPLE WITH TRIAD LANGUAGE DEFICITS MODIFY THEIR BEHAVIOR

YEXING WANG

Research Scholar of Lincoln University College Malaysia.

Dr. MIDHUNCHAKKARAVARTHY

Associate Professor, Dean, Faculty of Computer Science and Multimedia, Lincoln University College.

Dr. SANDEEP SHRESTHA

Professor of Lincoln University College Malaysia.

Abstract

This paper has no intention of "carrying out an experiment to prove or disprove the necessary and sufficient condition for the effect of the multimedia programme on potential changes on spoken vocabulary acquisition in students with autism; therefore it is neither a programme evaluation nor an implementation study. However, although the purpose of this study is to investigate the potential progress in spoken vocabulary acquisition or learning in subjects with autism, it is not a phonetic study or a speech assessment in the sense that professional speech therapists (SP) or experts have been doing, namely assessment on lexicon, semantics, syntactic, and pragmatics, and measurement on utterances, as has been done in previous studies. Following SP's techniques and processes, as well as making use of SP's evaluation tools, is thus not recommended in this situation. The validity of the self-developed multimedia learning programme was, however, increased via the inclusion of a variety of language evaluation instruments and a language scheme utilised in a well-established local special school different than the target school. In addition, a previously developed multimedia programme" was utilised during the pilot stage.

Keywords: IT, Cantonese spoken vocabulary, multimedia learning program

1. Introduction

At reality, this "paper is a mirror of the researcher's personal experience with kids with autism who were suffering in a special school a number of years ago, according to the present study's findings. In addition, this is in response to recent developments in Hong Kong's educational reforms, such as a territory-based practise of information and communication technologies (ICT) (EMB, 1999; Law, Yuen, Ki, Li, Lee, and Chow, 2000; Poon-McBrayer & Lian, 2003), an emphasis on inclusive or integrated education (EMB, 2003, online; Lian, 2004), and the upcoming New Senior Secondary Academic Structure (NSSA) (Lam, 2008; Law, 2006). According to the present study's researcher, children with autism and poor speaking abilities can prepare for these structural and curricular" changes, which will generate uncertainty but also optimism in their future educational experiences.

The Salamanca "Statement (1994, available online), which was issued following the World Conference on Special Needs Education, which was held in Spain fourteen years ago, reflects the optimism generated by local policy as well. It demonstrates the need of developing a customized educational programme that is based on the student-centered concept. Instead, kids with autism who have linguistic and social impairments in their communities require a learning programme like this to enable" them to become more active in the community of mainstream educational institutions.

According to successful "attempts in Western countries (e.g., Brown, Cammuso, Sachs, Winklosky, Mullane, Bernier, Svenson, Arin, Sheidley, and Folstein, 2003; Moore & Calvert, 2000; Murray & Lesser, 2003), information and communication technologies (ICTs), of which multimedia is one, can be an effective means of helping students improve their social skills as well as their ability to express themselves. Information and communication technologies (ICTs) An evaluation report indicates that there are in fact specific schools utilising ICT to assist increase the communication abilities of children with autism, including linguistic competence (EMB, 2001, online) (EMB, 2001, online). As a result, it is helpful to investigate potential future advancements in the use of ICT to assist children with autism in the acquisition of language and conceptualize the practices". Due to the fact that Chinese (mostly Cantonese) is the prevalent language in Hong Kong society, it is suggested that this research study be carried out for the benefit of the children involved.

2. Literature Review

Prior to the 1970s, "cognitive psychology began to gain prominence as one of the major paradigms for investigating various aspects of autism. According to Hermelin and O'Connor (in 1970), a number of research were carried out that were backed by a variety of techniques including social and clinical psychiatry, physiology, neuroscience, aetiology, and experimental psychology.

As a result, despite the fact that Hermelin and O'Connor (1970) expressed their dissatisfaction with the limitations of psychological theories explaining the aberrant behaviour of people with autism, they introduced three perspectives, among which Rimland (in 1964), Scheerer, Rothmann, and Goldstein (1945) explained autism as a failure to co-ordinate input and memory. Ecologists such as Ferster (1961) and Lovaas (1966) hypothesised that learning deficiencies or faculty learning' were to blame for the aberrant behaviour [and sought] to remedy the situation answers that need to be corrected and reconditioned the third method consists of three points of view. A defence mechanism against over-arousal from excessive stimulation (Hutt, Hutt, Lee, and Ounsted, 1964), [or a symptom of] multiple perceptual deficits (Wing), [or a symptom of] preoccupation with proximal receptor stimulation (Goldfrab, 1956, 1961; Schopler, 1965, 1966) were" all proposed as explanations for autistic behaviours.

The use of frontal lobe "tests to children with autism have been cited as one of the most significant reasons for their cognitive impairments (Bird, Castelli, Malik, Frith & Husain, 2004; Hughes, Russell, & Robbins, 1994; Leslie & Roth, 1993; Ozonoff, Pennington, & Rogers, 1991; Prior & Hoffman, 1990; Shallice, 1988). Several studies have demonstrated that the frontal lobes "executive function," which is responsible for suppressing a previously established reaction pattern and carrying out a planned action, is compromised (Leslie & Roth, 1993, p. 94). This is an example of a false belief failure. Recent research on the impact of impaired frontal lobe functioning on the cognitive performance of children with autism disorder has called into question the critical role of the medial frontal cortex in the formation of cognitive abilities, which has been supported by a number of studies conducted between 1998 and 2003. (Bird et al., 2004).

More research studies into "issues related to autism from a developmental psychology perspective are being encouraged by Moore and Frye (1991), as well as Scott, Clark, and Brady (2000). These studies include false-belief reasoning, self-knowledge, recognition of subjectivity and objectivity and presence play. These studies also include enhancement of instructional effectiveness and false-belief reasoning. For example, Hadwin, Baron-Cohen, Howlin, and Hill (1997) investigated how using play as an educational technique assisted students in learning to "detect apparent facial and body language" (Scott, Clark, & Brady, 2000, p. 112). It has been claimed that there has been some progress in comprehending emotion and belief statements. Nonetheless, "these conclusions have been increasingly called into question. This theory incorporates a subtle disincentive to find and validate effective strategies for teaching students with autism how to better perceive the intentions of others (Scott, Clark, and Brady, 2000, p. 112) despite an increase in studies with the orientation of theory of mind (Scott, Clark, and Brady, 2000, p. 112). The validity of theory of mind has also been called into question by alternative approaches such as behaviourist approaches that offer solutions to the difficulties described by TOM proponents, such as the results of a study by Lovaas (1987), and questions about the existence" of mindreading abilities, such as the experiment conducted by Charman and Lynggard (1998).

This behavioural and cognitive pattern, "which is sometimes referred to as "stereotypies, mannerisms, perseverations, obsessions, and compulsions" (Frith, 1989, p. 113), is found not only in people with autism disorder but also in a large number of mentally retarded people, according to the author.

Frith (1989) hypothesises that this sort of perseveration is caused by a malfunctioning section of a certain capacity in the human brain, which implies that the organism is unable to adapt flexibly and swiftly (p. 113). In other words, it is assumed that a high-level central monitor is unable to send signals to its peripheral devices (both input and output), i.e. that there is a disengagement between the central and peripheral devices because the central control processes are too weak to control them and to turn them off appropriately (p. 117). According to Frith (1989), this may explain the source and operation of this both restricted

and overly inflexible structure, which is clinically described as intricate routines of behaviour in infantile autism, as well as the way in which it manifests itself.

Despite the fact that the theory of weak central coherence provides evidence-based sources and causes for the repetitiveness observed in those with autistic symptoms, Frith (1989, p. 108) recommends that more extensive and thorough empirical investigations of attentional problems in childhood autism be" conducted.

3. Research Gap

An example of a restriction "was the requirement for additional class observations on all subjects' learning behaviour in the setting of the classroom. In addition to the developmental history of all subjects, the computer-based multimedia programme, and the research methodology, three other areas were investigated.

Class observations were carried out before and after the intervention, and the results were evaluated and analysed based on the findings. These observations and data revealed several major behavioural traits as well as learning styles in each individual, which were corroborated by other sources. When contrasted to the respondents' results in a one-to-one setting, these characteristics were particularly apparent. The majority of the subjects did, in fact, indicate their wish to be interviewed (Lau, Yuen, & Lian, 2006c, 2007c, 2007d). This raises the question of how the researcher of the current study can validate that this discovery is a unique feature in the context of the study as a whole. This is due to the fact that there was only one session of pre- and post-intervention monitoring in total.

In addition to the efforts made by teaching professionals in investigating the application of multimedia techniques to special schools, which were briefly addressed in the preceding section, action researchers also examine important problems in special education that are pertinent to their field.

In a recent internet search conducted by the researcher for this study in the database EBSCO, she discovered a number of action" research studies on a variety of topics pertaining to kids with special needs.

Marchand-Martella, Martella, "Orlob, and Ebey (2000) investigated the effectiveness of a reading programme to assist students in a rural high school in the United States, and Duckett and Pratt (2001) recommended ways to account for the research needs of visually impaired people in Scotland. Marchand-Martella, Martella, Orlob, and Ebey (2000) investigated the effectiveness of a reading programme to assist students in a rural high school in the United States. Beamish and Bryer (1999) published the outcomes of a four-year experiment in Australia that evaluated the effectiveness of several interventions.

Participatory action research was used to improve the programme quality of a major government-run early special education service in Queensland, using a collaborative

technique. Although smaller in scope than this large-scale study, the research project about a British special school conducted by Rose, Fletch, and Goodwin (1999) was smaller in scope, with the goal of "examination ways in which pupils [with severe learning difficulties] were involved in decision-making processes related to their own learning and assessments".

Kenwothy and Whittaker (2000) advocated for the necessity of legislation to safeguard kids with special educational needs in an inclusive environment in the United Kingdom, with a similar focus on guaranteeing children's rights" in a school system in the United States.

4. Research Objective & Methodology

The purpose of this study was to "investigate the possibility of changes in the acquisition of Cantonese spoken vocabulary in the five participants with autism who were exposed to a multimedia-facilitated setting.

In order to determine whether there are any changes in the individuals who have language impairments of the triad when placed in a multimedia-supported setting.

To provide an explanation of the information processing (IP) perspective used in Kozma's (1987, 1991a) argument regarding the impact of information and technology (including multimedia) on learning outcomes in normally developing children from the standpoint of information processing (IP).

The current study takes a descriptive approach to a design-based research study in nature, which is the primary focus of the research.

Aim: The objective of this study is to investigate the preliminary effect of an isolated learning setting combined with a self-developed multimedia software on the acquisition of Cantonese spoken vocabulary in five participants with autism spectrum disorder. Methodologically, this is a single-subject multiple-baseline across subjects design using a single baseline for each participant. The data on all individuals' linguistic performances were gathered from a variety of sources of evidence and then evaluated and interpreted quantitatively, as described above. In addition to numerical analysis, visual inspection is" another method of displaying data that may be used in conjunction with numerical analysis.

As a matter of fact, in a "recently published anthology on teachers' use of information technology in special education in Hong Kong (Sin, Chan, and Hui 2003), the authors describe a series of studies that investigated what and how Hong Kong teachers in special schools have integrated multimedia into their professional practises. Assistive technologies, computer-aided learning software, and challenges faced are all covered in depth in the research. It also includes special schools that cater to students with a variety of special educational needs (SEN), such as those who are deaf or hard of hearing,

physically disabled, mentally retarded, suffering from a language developmental disorder, experiencing learning difficulties, or experiencing emotional or behavioural adaptive difficulties. However, there has been no research on the development of "speech in kids with autism spectrum disorder who are taught in a computer-assisted setting.

5. Data Analysis & Findings

Among the language deficits in "subjects with autism summarized in Scott, Clark, and Brady (2000), this study's findings were evident of the existence of echolalia and the need for concrete language.

Additional publications were produced by some of these organisations, including the Training package for autistic children developed by the Heep Hong Society and the Handbook of implementing visual strategies and a teaching guidebook for children with autistic spectrum disorder developed by the Spastics Association of Hong Kong. The majority of these articles are in-depth accounts of their previous experiences, which are substantiated by the findings of their investigations. It is possible that teaching experiences and findings from their research projects will be included in the publications of these organisations as a result of this. This is the third area in which contributions are sought.

Additional public seminars or conferences were held in which seminal figures including Laura Schreibman, Marjorie Charlop-Christy, Virginia Wong, and Eustacia Cutler (Autism Hong Kong, July 2001), Gary Mesibov and Serena Wieder (Heep Hong Society, December 2004), and others shared their ideas, experiences, or perspectives on a variety of topics. In addition, the Heep Hong Society began developing an extensive regional foundation education programme in the spring of 2006. This programme was designed to assist families with autistic children, as well as their instructors, in the New Territories' East and North areas, respectively. It was one of the aims of this programme to assist parents in the development of their children's language learning abilities. Autism Hong Kong (<http://www.autism.hk>) was created in 2007 to foster a deeper link with the expertise on autism in China, and the Hong Kong Autism Awareness Alliance was established in early April 2008 to foster a stronger relationship with the knowledge on autism in China. In 2007, the United Nations pushed for World Autism Awareness Day, and this" is one of the activities taken in response to that advocacy.

Several academic research projects "have been conducted at tertiary institutions during the last ten years. As an example, among the six academic research reports completed at the University of Hong Kong between 1996 and 2000, there were two works by educators (Rao, 1996 and 1997), two works by medicine professionals with a variety of orientations, including paediatrics, physiology, and psychiatry (Chan et al., 2000; Wong & Pang, 1997; Wong & Sun, 2000), and one work by researchers with a strong social work orientation (Chan, Chua (Shek & Tseng, 1999). The research projects of seven other postgraduate students on autism were also conducted across a variety of disciplines,

including architecture (Lee, 2000), dentistry (Chew, 2001), education (Fung, 2000; Ho, 2003), medical sciences (Hui, 2003), psychology (Lam, 1999, 2003), and zoology (Lam, 1999, 2003). (Ng, 2002). The scope of these research includes screening, information and communication technologies, dentistry, architecture, cognition, psychometrics, neurophysiology, Chinese medicine, frontostriatal diseases, and genetics, among other things. A collaboration between the Chinese University of Hong Kong, the Princess Margaret Hospital, and the Department of Health resulted in the publication of Poon et al. (2001) who attempted to test for genetic origins of autism. Poon et al. (2000) also published a paper in which they attempted to test for genetic origins of autism in a collaboration between the Chinese University of Hong Kong, the Princess Margaret Hospital, and the Department of Health.

Teaching Children with Autism: "Home - School Partnership was a project run by the Hong Kong Institute of Education that ran from September 2001 to February 2003. The Hong Kong Institute of Education has been actively involved in the study of teaching and research in autism. In addition, the researchers proposed three key cognitive theories of autism, including execution dysfunction" theory, theory of mind, and weak central coherence theory. This is crucial for a number of reasons.

Second, it offered a "straightforward set of statistics on the most often used teaching techniques in special schools that serve kids who have been identified as autistic. Their findings revealed that structural education [Treatment and Education of Autistic and Communicatively Impaired Children (TEAACH)] as well as the Picture Exchange Communication System (PECS) were frequently employed in their research. Pupils from all backgrounds found visual tactics and social tales to be effective ways at these schools, regardless of the character of their students. Her theoretical basis of pedagogy, on the other hand, was the theory of mind or mind mapping (Buzan & Buzan, 2000), which she chose for either a school mixed with middle grade and high-function or a school dedicated just to high-functioning" students, respectively. This provides an opportunity for future investigation.

6. Conclusion

In this early "and exploratory investigation, it was discovered that the use of multimedia-facilitated context had a significant impact on the Cantonese spoken vocabularies of five participants who are autistic. It was discovered that, in this environment, as opposed to a classroom setting, certain distinguishing characteristics were seen, such as the active use of the computer-assisted facility, the participants' stronger expressive desire, and the successful application of materialistic reinforcement. Furthermore, in at least two of the five patients, an echolalia-like function is found in both their receptive and verbal expressive tasks, suggesting that echolalia may have a beneficial role.

While there were some additional findings that were consistent with the literature examined, such as the wide range of language skills among the participants and the

variation in performance levels throughout both the baseline and intervention periods, a number of concerns remain to be investigated. Included among these are the relationship between comprehension and expression in Cantonese acquisition, the effect of music on language acquisition, gender differences in acquisition and development, the actual effect of Chinese characters' unique features, memory capacity and its relationship with echolalia functioning in language" development, and including social-natured vocabularies as part of the curriculum design.

In reality, "there is a basic topic that connects all of these difficulties, and that is the question of learning awareness in people who have autism spectrum disorder. When it comes to helping strategies for Chinese language acquisition in students with autism, the insights gained from a phenomenological approach to learning may expand the range of options available in terms of the students' experience of learning, the significance of individual differences, and the association with the design of the context in which the learning is taking place. As a result of the integration of all components, including the multimedia programme, the language approach, and parental engagement, it is predicted that kids with autism will continue to make progress in their language skills. This is referred to as the "space of learning" in phenomenological language (Marton, Runesson, & Tsui, 2004). This, in turn, assists the researcher and future researchers in this field in reflecting on the creation of a possible theory or model for Cantonese acquisition in local children with autism who are exposed to multimedia" in a multimedia-facilitated environment.

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