

ENHANCING LEARNING ABILITY AMONG DEAF STUDENTS BY USING INTERACTIVE IMAGES

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Abstract

Every human being should be treated equally in education opportunities regardless of their backgrounds including disabled peoples. This study focuses on the enhancing learning ability among deaf students by using visual images as an alternative method of teaching and learning. Problem occurs when deaf students is taught by using the traditional method of learning activities which is ended up students lost their concentration in learning activities cause them to fail to obtain good grade. The objectives are to identify the current practice in teaching and learning among deaf students, and to analyse the impact of using visual images as an alternative method. Interviews and observations are used in data collection. The findings indicated that the deaf students are interested in learning activities by using pictures and gestures of body movement. It is concluded that interactive media is fundamental as an alternative method in enhancing learning ability for deaf students.

Keyword: Images, Interactive, Visual Communication, Deaf Students, Learning Ability

Introduction

In Malaysia there were 283,512 disabled and 37,729 are registered for the hearing problems (Department of Social Welfare, 2009). Hearing problems is a neurological disability that most frequently occur in a human population. The World Health Organization (WHO) estimates that nearly 250 million people of the world are experiencing hearing problems (World Health Organization, 1999 and Che Lah, 2008). According to Chua and Koh (1992) that the deaf children can be categorized as those children who have damaged hearing in most circumstances, e.g. it has a partial hearing, was unusual because it was not able to react to the level of surrounding sounds.

The disabled person can be categorized into six types or categories. According to the Department of Social Welfare (2009) as indicated in the Table 1 that the six categories of disabled persons are vision, hearing, physical, learning disabilities, cerebral palsy and others. Meanwhile Asmah Omar (1984) defined disabled person as a person who was born deaf with hearing defects that could not recognize the sound of the language which causes them cannot hear the conversation of others. They are also not being able to experience and appreciate the thought and culture through language. Furthermore Bee (1995) emphasized that the children with hearing problems are those who have difficulty hearing or hearing a clear deficiency. This type of hearing problem is caused by factors before birth or during birth or after birth.

List Of Disabled	Year
	2009
Vision	26,155
Hearing	37,729
Physical	94,331
Learning Disabilities	109,708
Cerebral Palsy	4,068
Others	11,521
Total	283,512

Table 1: Registration Disabled by Type of Disability (Source: Department of Social Welfare, 2009)

It is therefore, this study will focus on the issues related to enhance learning ability among deaf student by using photographic images. In particular, the study is emphasized on what types of photographic images will be used to enhance deaf students learning ability and why photographic images use in enhance deaf students learning ability nowadays. All interviews session and learning sessions will be recorded and documented by using audio tape, photographic images and video.

The interest in Special Education in Malaysia was started in the 1920s among the volunteers involved in the opening of schools blind and deaf. Report of the Cabinet Committee on the implementation of the education policy through 169 Certificate is a turning point that led to an emphasis and focus more clearly on the development of special education in Malaysia. This 169 Certificate emphasized on the realization that the government should be responsible for the education of disabled children is recommended should then take over full responsibility for the education of the organizations that operate at this time. Consequent to this development, the

involvement voluntary bodies in the development of child education particularly on the disabled and handicapped children should be encouraged and need to be supported (Ministry of Education, 2012).

It is relevant to note that the related literatures and reviews about the historical development of deaf education in Malaysia are limited to be reviewed. The study has mainly depended on several books are particularly written and focused about the history and the development of education in Malaysia as a major reference for this study. Sufean Hussin (1996) through his book *Education in Malaysia: History, System and Philosophy (Pendidikan di Malaysia: Sejarah, Sistem, dan Falsafah)* is emphasized on the main problem of education in special education for the blind, deaf and dumb that emphasizes on the language and communication problems. The problem with the deaf students is bit complicated. It is because they cannot hear whatever the teachers wanted in delivering information. It is therefore, they have to use hearing aid in communicating with them but this is only applicable for those who have not serious hearing problem. On the other hand for those who have serious hearing problem in the category of deaf or dumb, the alternative methods in communication with them are by using sign language, cued speech and spelling as the main communication medium. These communication methods are said to be more effective than other methods (Sufean Husin, 1996, p.358).

Problem of Deaf Student in Education

The statistic by the Ministry of Education in 2013 as indicated in the Table 2 shows that the total of deaf students in Malaysia was about 3,166 at various levels of education (Department of Special Education, 2013).

No	Level	No of Students	
		SPK	PPKI
1	Kindergarten	64	9
2	Primary	1,117	483
3	Secondary	508	985
Total		1,689	1,477

Table 2: Disabled Students of Hearing in SPK and PPKI in Malaysia
(Source: Department of Special Education, 2013)

In Malaysia, the government has put an effort in increasing the level education of the deaf students. It is clearly emphasized by the Minister of Welfare, Women and Family Development of Sarawak, Fatimah Abdullah (2012) that it is hoped that the Vocational High School for deaf students to be built in Sarawak soon. It is because the present situation that there are only two of schools of this kinds in Malaysia. The education is always the way forward and always become a priority in the government agenda (Fatimah Abdullah, 2012).

The President of the Federation of the Deaf Malaysia (MFD), Mohamad Sazali Shaari once stated that many of deaf students failed in some subjects which bring them lost hope in the current education system. This due to low percentage of passing subjects which were taken by deaf students in the major examinations system such as the Primary School Achievement Test (UPSR), Lower Secondary Assessment (PMR) and Certificate of Education (SPM). Many of them fail every year especially the subject of Malay Language. Subject (Bahasa Melayu). This subject is a compulsory subject in any major examination which makes them to fail the whole examination. As a result, students are having difficulties in applying for further studies at higher level (Abu Hassan, 2012).

Moreover, Roslina Ahmad (cited in Kasdi 2012) once said that the communications issues that appeared by the deaf people can lead them to lose various opportunities in their daily lives. As human beings, the deaf also have their rights to live with the same situation that normal people received. In education, the government has provided various facilities such as special schools, integrated schools as well as trained teachers that provide them with proper education opportunity. They want to be treated as same as with normal citizens. However, it is relevant to note that some of the aspects of facilities are needed to be strengthened and upgraded especially involving the facilities in teaching and learning for deaf particularly in communications. One of the areas is the communication systems where it is involved two-way communication between normal people and deaf people which required to be improved so that both parties are able to communicate transparently and effectively. The second problem is the community relations and collective rights of the deaf community are far from normal practice in term of cooperation. It is because they can only communicate with people who know sign language. This situation is more complex whenever the numbers of interpreters are lacking and very limited in the community. These problems can contribute to the efficacy and negative impact particularly on the aspect of identity which causes the deaf began to build their own world which can cause them isolate or separate from normal society. Siew, Salimah and Rozaiti (2007) furthermore stated that the shortage of quality skilled workers to help the deaf community in Malaysia is still become a problem in this community. A serious effort has to be tackled and settled particularly in developing relevant and appropriate teaching and learning materials so that teachers and students can enjoy the process of educating deaf students to more creative and lively sessions.

The Role of Images in Communication and Education

Marschark and Hauser (2011) in their book entitled “How Deaf Children Learn: What Parents and Teachers Need to Know Perspective on Deafness” has emphasized that everyone has both visual spatial memories (in form of visual images) and verbal memories (in form of language). For this reason, they said that many teachers and those related personnel continue on emphasizing on using both of visual and spatial memories in teaching and learning for deaf learners. They claim that visual images have significant values in enhancing learning activities among this type of disabilities. On the contrary, they also argued that neither one of these is sufficient for optimal learning and academic achievement (p.87). It requires further studies in order for maximum impact for learning activities among deaf students.

Pertaining to the significant role of visual images, Mustaffa Halabi (2011) emphasized that the contents of visual images can be categorized into two types. First type is known as realistic function or sensation which serves as the truth or real objects and things which can be seen in the real world. The second one is known as interpretive or perception which serves the purpose for images to be

interpreted and analysed. It is therefore, it requires for someone to have proper knowledge in interpreting images which are revolves around us every second and minute. It has own syntax and grammar which need to be analysed and understood.

In his book 'Photography: Its Significance and Values in Education, has clearly discussed the importance of photography or visual images in daily life particularly in the role within the context of visual culture. He argues that some peoples in our society perceived photography as a hobby which has no intellectual values in human daily life. It is because photography is easy to capture by clicking the shutter and fully automated control. We do not have to use brain or any intellectual human properties in taking pictures. On the reality aspect however, Mustaffa Halabi argues that photography has its own significance and values in education sphere which has its own intellectual properties on par with other forms of communication like verbal and written communications. It is therefore, the content this book is to make the society understand and realize the importance and significance of photography in our daily life and in education sphere.

Norziha, et al. (2009) stated that visual communication is defined as using visual symbol such as pictures and graphic to express idea and convey meaning. It has its own strength and values in our daily life. Take for example the role television that it provides us with various kinds of images or motion images which serves to us various functions and purposes in entertaining, educating, amusing and informing with various types of programs. Meanwhile Jackson and Jackson emphasized that photography can be a valuable aid to the lives of people with learning disabilities. It can be used to resolve problems and improve understanding (Jackson and Jackson, 1999). The recent study by Allen, Mayhew and Hill (2012) suggest that visual literacy refers to the ability to comprehend, evaluate, and compose visual messages. Visual literate persons are able to read visual messages, compose visual language statements and translate from visual to verbal. Student will learn attitudes, behaviours, and question to ask which them to think abstractly and analytically. The viewer therefore, will need to engage in a variety of viewing experiences, both in comprehending and composing. The media for visual communication is include photography, pictures, model, graphic, painting, logo and to mention a few.

It is relevant to note that the education for deaf students particularly in the process of learning requires an alternative way beside that current method of learning. This serves the purpose to enhance their learning ability which can be developed by using photographic images. Thus, this study has forward an effort to look an insight or in depth on the potential in analyzing the role of photographic images as a medium of learning ability among deaf students. This method is trying to replace the current methods of learning but to put forward as an alternative method of learning which can enhance more impact toward high order thinking skills (HOTS) that relates to the cognitive as well as affective developments. Besides that, the learning activity will be more lively and easily to be understood for deaf students as well as a way to encourage students in self-study and self-reliance to improve their learning. This is emphasized by Aidah, Mustaffa Halabi and Adzrool Idzwan that we can realize the photographic images can be used as one of method in deaf student learning and way to encourage the deaf students in self-study and self-reliance to improve their learning (2013, pg. 490).

Educational Theory in Visual Image Education

In the theory of education, three major components are significantly required in the process of educating human being (Mustaffa Halabi 2011). Those components are the theory of knowledge which involves or focuses the areas of study. This addresses what we think about visual image

knowledge, as well as how we acquire it through the education process; the theory learning which is related with the process of receiving information and facts of knowledge among students; and finally is the theory of teaching where the teachers deliver information and facts to students.

All the components are related with positive and active types of action which relates to the theory of constructivism where ongoing, active building-up of knowledge and cognitive processes from very simple starting points are applied (Lee and Gupta, 1998 cited in Mustaffa Halabi, 2011, p.34). According to Cunningham and Duffy (1996), learning is an active process of constructing rather than acquiring knowledge; and instruction is a process of supporting that construction rather than communicating knowledge (cited in Mustaffa Halabi, 2011, p.34). Hence, the constructivism development of the learners is through the process of adaptation coupled with the process of experiments, which involves trial and error (Mustaffa Halabi, 2011, p.35). The term of constructivism is signified or implied or associate with active and positive manner. It is implied as the same as in a construction of house or a building. A Contractor has to begin to lay a concrete foundation where it becomes as platform or a structure or a framework of a house. Later he has to start to build pillars, walls, roof, ceiling and so on until the work is completed. The same application is implied to the process of learning. The process begins with the basic elements of cognitive domains where the learning process must start with acquire of knowledge, later follow by comprehension, application, analysis, synthesis and evaluation. The learner has an ability to explore and experience and later be able to evaluate the quality of knowledge that they gain. The process of learning is also involved with affective domain that relates with the moral and values of life as well as the psychomotor domain that relates with physical skills and the skill abilities (Anderson 2000).

It is therefore, this study focuses in analyzing an appropriate image model in enhancing learning process by using photographic images among deaf students. Besides that this study also identifies the suitable types of photographic images that relevant and appropriate to be used to enhance learning ability among deaf students.

Methodology

RESEARCH QUESTION	STUDY	OBJECTIVE	RESEARCH METHOD
RQ 1: What kinds of methods of teaching and learning among deaf students?	PART 1	Identify the current practice in teaching and learning among deaf students. Determine the characteristic, element, principle and guideline in teaching aids tool used in teaching and learning.	Interview; Semi structured interviews -Face to face interview with the school teachers. Observation -Non-participant observation in classroom towards the deaf students, teacher. Content Analysis - Collect, analyse and review the current teaching material use for the deaf learning in school.

<p>RQ 2: What types of visual images used to enhance learning ability among deaf students?</p> <p>RQ 3: Why visual images are used to enhance learning ability among deaf students?</p>	<p>PART 2</p>	<p>Determine the characteristic, element, principle and guideline in literature and government.</p> <p>Analyses an appropriate method in enhancing learning process among deaf students.</p> <p>Determine the teacher and deaf students perceive the visual images.</p>	<p>Contextual Analysis -Collect, analyse and review the literature, current teaching and government guideline.</p> <p>Interview; Semi structured interviews -Face to face interview with the school teachers.</p> <p>Observation -Non-participant observation in classroom towards the deaf students, teacher.</p>
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Table 3: Timetable of Research Design Overall Phase. (Source: Aidah Alias 2014)

Since this study is focused on the enhancing of learning activity among deaf students by using photographic images, it is therefore, the qualitative research approach by employing an interview, and observation. It relates with the descriptive research approach. Descriptive research (Sulaiman Shamsuri, 2009); Allison, 1996 and Maxwell, 1992) refer to obtain sufficient and accurate descriptions of activities, objects, processes and those ruling at the time researchers used to identify a research problem, formulate a hypothesis, determine, select tools, collect and analyse data, describe, analyse and interpret the findings, make conclusions and offer recommendations and write reports.

For this study, the deaf students and teachers at Primary School of Special Education for Deaf, Section 18, Shah Alam, Selangor are selected to be as respondents. Interview with the semi-structured interview and observation are conducted to achieve the objective and answering the research question. Interview with semi-structured is selected for the reason of accuracy in obtaining relevant information, investigate motive and with scope that the respondent will express themselves at a length (Collins, 2010 & Mason, 2002). 11 teachers from Primary School of Special Education for Deaf, Section 18, Shah Alam, Selangor were interviewed. The method of observation also will be used to observe the actual situation of deaf student’s behaviour and act in school (Collins, 2010 & Mason, 2002). The observation session will includes standard 1 to standard 5 students only.

Result of Data Collection

Current Method Used In Deaf Student Teaching And Learning											
Respondent											
Keyword	1	2	3	4	5	6	7	8	9	10	11
Induction/Total communication	✓	✓	✓	✓	✓	✓	✓			✓	✓
Giving Example	✓	✓	✓		✓		✓		✓	✓	✓
Showing Situation	✓				✓						✓
Explain		✓	✓		✓				✓		✓
Acting	✓	✓	✓			✓	✓				✓
Sign Language				✓		✓					✓
Teaching Aids (ABM)		✓		✓	✓		✓	✓		✓	✓
<p>Summary: The current method used in teaching and learning for deaf students at present is the induction method. It is involving any ideas, technique, activities, example and resources to attract students. Need in preparing the lesson creatively is required due to attract the deaf students focus in learning.</p>											

Table 4: Current Method Used In Deaf Student Teaching And Learning (Source: Aidah Alias 2014)

This study was conducted at the Primary School of Special Education for Deaf, Section 18, Shah Alam, Selangor in 2014. I had visited for the fieldworks for more than 4 times. In the pedagogic of teaching, the teachers used 'induction' method in teaching and learning for deaf students. This session has been planned to attract students before learning session begins. It emphasizes on the brainstorming of ideas, techniques, processes, physical activities, demonstrations, examples and resources to attract students.

From what I found in this study, beside the induction approach, most of the teachers that were interviewed and observed, the used of teaching aids have become popular in teaching and learning processes. Among popular teaching aid are flash cards, alphabet book, puzzled board Velcro and many more. Added with some of the teaching aids such as video, images, picture books, clip art and presentation it will gives example, showed situation and explained the whole process to the deaf student supported with sign language, acting makes deaf student understand better in their learning process. They stated that this approach has been popular among teachers because it can enhance the learning activities in active and lively conditions. As emphasized by Omardin (1999) and Jamila (2006) that the process of learning by using teaching aids can improve learning ability and it helps to stimulate the deaf students. Hence the students are more focused on the learning activities.

Therefore, the induction methods with teaching aids are used by teachers for teaching and learning in deaf students are the current method of practice and learning for deaf students today. The use of teaching aids is also very helpful in solving many problems in teaching and learning methods due to the constantly changing over time (Omardin, 1999 & Jamila, 2006). Hence, the use of teaching aid is related or in line with the *Akta Pendidikan 1996* (Education Act 1996) where special education needs to be enhanced and heightened from their curriculums and syllabuses.

It is relevant to note state that the literature search and review from secondary materials such books, on-line publications, and other references have resulted some established characteristics, principles, elements and guidelines that suggested by several scholars for learning and teaching deaf students. Interviews to the Teachers were also served the purpose to analyse the current practices and methods of teaching in enhancing learning process among deaf students. An observation method was also used to focus on the teaching and learning activities in and out of the classrooms. It includes by identifying the characteristics, principles and elements which being applied as tools in teaching aids by teachers. The Table 5 below shows the data analysis for most common keywords from contextual analysis; books, interviews; teachers and researcher observation; non participant.

Guideline For Appropriate Model For Deaf Students				
Source (Keywords)	Contextual Analysis; Books	Teachers Interview	Researcher Observation	Most Common Keywords
Characteristic/ Principle/ Elements	1. Expression 2. Color 3. Movement 4. Sign 5. Gesture 6. Lighting 7. Example	1.Example 2.Moving 3.Real images 4.Color 5.Clear 6.Easy 7.Process	1. Images - Still - Moving 2. Color 3. Example 4. Situation 5. Expression 6. Clear	1. Color 2. Movement 3. Example 4. Process 5. Clear 6. Easy 7. Sign 8. Expression

			7. Easy 8. Process 9. Sign	9. Images
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Table 5: Guideline for an Appropriate Model for Deaf Students (Source: Aidah Alias 2014)

Conclusion

TEACHING AND LEARNING FOR DEAF STUDENTS			
	Current Method	Guideline for Teaching Aid	Models Suggested
1.	Induction/Total communication includes: i. Giving Example ii. Showing Situation iii. Explain iv. Acting v. Sign Language vi. Teaching Aids (ABM)	Color	1. Interactive images /video 2. Still visual images 3. Sign Language/ Text 4. Translator
2.		Movement	
3.		Example	
4.		Process	
5.		Clear	
6.		Easy	
7.		Sign	
8.		Expression	
9.		Images	

Table 6: Framework of Findings (Source: Aidah Alias 2014)

Based on the Table 6, the process of teaching and learning are needed to be performed in varieties and multiplicities. There are two important points as the outcomes of this study. The first point is focused on the ‘guidelines for producing teaching aids’. In order to produce good teaching aids, there are several fundamental elements that need to be included in teaching and learning process for deaf students. The uses of colours, movements, examples, processes, clear, easy, sign language, expression and images are suggested to be used as teaching aids in making teaching and learning in more effective, informative, interesting and lively. The current practice is lacking of these above mentioned elements. It is mainly due to the lack of expertise in making and producing appropriate materials and models as teaching aids.

The second point is focused on the ‘models’ that is suitable for teaching and learning. This study found that the deaf students are keen and interested in using visual images of moving images or interactive visual images as well as still visual images as additional methods of teaching and learning. They required and needed an extra or an extension of methods in delivering information

and knowledge. This can be found in the Table 6 that yielded where four (4) models are suggested: 1). Interactive images / video; 2). Still visual images; 3). Sign Language / Text; and 4). Translator. Even though the first two (2) of using Sign Language & Texts and Translators have been employed and practiced for quite sometimes by most of the teachers and students in the process of teaching and learning, but these students want Interactive Visual Images and Still Visual Images to be added in the teaching and learning processes.

Finally it is relevant to note that Deaf community is a minority group in Malaysia. Their existence is argued cannot be ignored and excluded from the mainstream. This group like other normal peoples requires to be treated as the same as normal citizens that they are entitled to get action, services, supplies and to mention a few. It is therefore, the respective bodies of education institutions, ministry and other related bodies as well as relevant personnel including teachers, students, administrators and other related personnel should broaden these methods as an alternative or additional method in educating deaf children so that they become more competent like normal human being.

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