Previous Studies Related to the Use of Sciences Technology in the Learning of Special Education Needs Pupils with Visual Impairment

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Abstract

In Malaysia, Special Education has started since the early 1920s when a group of volunteers opened schools for students with visual and hearing disabilities. In 1978 a cabinet committee reviewed the Implementation of Education Policy through Certificate 169 which stated that there was an awareness of the government's responsibility towards the education of disabled children. The government is advised to take responsibility for providing education services to this group. While volunteers are also encouraged to be involved in advancing the education of disabled children. On June 30, 1981, the Education Planning Committee meeting decided to establish a committee to study the needs of their respective tasks towards these children. In 1996 the Special Education Act was gazetted. This Act emphasizes the role and law that drives special education programs in Malaysia. Through the free education act, inclusive class programs, the preparation of lesson plans and support from various parties are emphasized in the special education system in Malaysia.

Keywords: special education, visual impairment, technology, education, learning

Introduction

Special education is meant as services and educational facilities provided for individuals with special needs, or disabilities, which consist of those with visual or short-sighted disabilities, hearing disabilities, learning disabilities, emotional and behavioral disorders, communication disorders (speech and language) physical disabilities and intelligent people (Mohd Hanafi et al., 2009). According to Halahan and Kauffman (1986), Special Education refers to teaching methods built to meet the needs of students with special needs with appropriate teaching materials, extraordinary teaching strategies and equipped with certain facilities (Education Act, 1996).

In 1994, the Special Education Unit was established to plan and implement special education policies. The Special Education Policy was declared in 1997 emphasizing the principle of inclusive education. This policy gives priority to all children who are able to follow learning in a suitable environment. A learning environment can be created in an inclusive school (Zakaria et al., 2009). Inclusive schools aim to provide appropriate teaching to all children according to their respective abilities. The function of the Special Education Unit (UPK) is to implement the Inclusive Education Policy, engage in long-term planning, plan and implement special education programs, plan and provide support services for students with special needs, plan and provide teacher professionalism training, implement psychometric testing, evaluate the effectiveness of education programs, collect information on students with special needs, make UPK a reference resource center, collaborate with external agencies, increase public awareness about Special Education and increase the involvement of parents in helping students with special needs (Wiana, 2018).

Literature Review

Based on the Education Regulations (Special Education Program, 2015), Special Education means education for students with special needs in a special school or in a school that implements the Integrated Special Education Program (PPKI) or the Inclusive Education Program (PPI) at the pre-school, school junior high school and high school graduate. According to the Education Act (1996), the Special Education Program is a program provided in schools for students with special needs who have visual impairments or hearing impairments. This program is a joint program with regular schools. Special Education Schools (SPK)

administered by the Special Education Department (JPK) and Integrated Special Education Programs administered by the State Education Department. The Integrated Special Education Program (PPKI) accounts for the largest number of student enrollments in the Special Education system (Siti Fatimah & Mustafa Che, 2018).

The Special Integration Education Program (PPKI) which is located in government and government-aided schools places students with learning problems. This program exists in daily primary schools, daily secondary schools, technical and vocational secondary schools. Primary school students attend school for six years and secondary school for 6 years. This period can be extended according to the needs of the student. This student attends school together with students in the mainstream. Under the PPKI there is also an Inclusive Education Program (PPI) which places students with special needs to study together with mainstream students in regular classes. PPI refers to educational services provided to MBK in the same class and using the same flow as primary students (Mitchell, 2014; Siti Norfatin, 2019). Meanwhile, Special Education Schools place students with visual and hearing disabilities in special schools only.

Special Education Teacher

Special Education teacher positions are appointed by the Malaysian Ministry of Education to meet the needs of teachers in the Special Education Program. Special education teachers are teachers who are responsible for teaching children with special needs who have various disabilities. Children with special needs need special help from trained individuals to help them reach their potential and strive to progress further. The career of a special education teacher is not something that anyone can pursue. A special education teacher needs to have the criteria of being patient, dedicated and providing the guidance needed by special students. They work in the environment of children who have mild to moderate mental disabilities, learning problems, cognitive problems, emotional and behavioral problems, physical and health problems, hearing problems and vision problems. The task of special education teachers is to teach students basic literacy skills. In addition, the task of a special education teacher is not only as an educator for students with disabilities but also as a companion so that they can adapt to the real learning environment at school (Nor Azuwa et al., 2020).

Teaching Aids (BBM)

BBM is an inseparable component in any class. The use of BBM helps teachers improve the performance of the teaching and facilitation process (PdPc). In fact, it can also help students improve reading comprehension skills, draw or strengthen skills or concepts, differentiate instructions and eliminate students' anxiety or boredom with a new and more interesting way of presentation (Siti Hajar & Suguneswari, 2016). The role of teaching aids to fulfill the PdPC process in order to improve the process of receiving information and provide a variety of teaching methods in addition to increasing student motivation and creating an informed, critical and creative society (Nik Norhazimah et al., 2012).

It can be found in the form of pictures, videos, charts, picture cards, and objects such as three-dimensional models or educational toys. The term teaching aids is used to identify those materials in addition to basic teaching (for example, teaching through lectures). Teachers use teaching aids in PdPC to give students an understanding of the topics being taught (Norfadhilah, 2014). Teaching aids are suitable for use at all ages. The use of teaching aids makes the learning experience more real. There are three categories consisting of electronic, non-electronic, and experiential and actual material fuel (Kamarul Azmi et al., 2011). Non-electronic fuel is material that still uses a white board or black board. This material is used to record the content of the lesson during the PdPc session in class.

a. Textbook

Textbooks are BBM specially designed by the author and widely used as a teaching resource in schools.

b. Files and reading materials

This material consists of printed materials that are not books such as magazines, calendars, postcards, newspapers, posters, charts, pictorial maps, pamphlets or bulletins and so on. These materials are filed and stored in a closet and used variously in the classroom or resource center.

c. Pictures, scan cards and graft cards

This BBM is used to attract students' attention in the classroom. A flash card consists of a string of words. These cards are suitable for introducing new words to primary school students.

d. Exhibition board

Exhibition boards are also part of BBM like bulletin boards. It can introduce new ideas and information to its readers. In addition to providing understanding and increasing the value of vocabulary, stimulating discussion and increasing students' creativity.

e. Chart

Charts are teaching aids that convey information systematically containing letters, numbers, tables, sketches, brief notes, diagrams, symbols and drawings. Examples of charts such as flip, flip, turn, flow, graph, pie and single charts.

f. Computer

These teaching aids can be used in the form of programs that combine text, music, sound, graphics, picture animation. Using a computer makes the learning process easier and more effective. Teaching is done in the form of quizzes, questions and answers, lectures and online dialogues.

g. Radio

Radio is a teaching material used for language studies. Many educational radio broadcasts use radio as the main delivery material

Discussion

Multimedia is a fraction of the words multi and media. Multi means many and media is place. Multimedia is a communication tool used to convey information. Media is defined as an intermediary source of information that helps people to accept, interpret or more specifically an event in the environment. Multimedia, on the other hand, is a combination of presentations that are organized and based on a computer system platform that controls media data. According to Vaughan (2006) multimedia is a combination of elements of text, graphics, animation, audio and video that can be seen and heard in our daily lives. The combination of all these elements is stored and processed and presented in a linear and interactive form. Multimedia also refers to the use of computer technology to create and store multimedia

content (Farzana Shamin, 2020; Sigh, 2007). This multimedia application is very important to be used in the education system from the primary school level to the higher education level.A more effective learning environment can be created with the use of sophisticated multimedia technology innovations resulting from a combination of audio, video, text, graphics and animation capable of producing interesting colors and designs (Che Suriani et al., 2020; Fadzilah & Sherena, 2002). As a result of changes in teaching pedagogy, the PdPc process becomes more interactive and effective. A study of Malaysian students' perception of multimedia learning was conducted by Neo, Neo, and Yap (2008) and found that students consider multimedia learning to be fun and motivating. Through the implementation of multimedia learning, emotional stress while processing information can be significantly reduced (Noraini, 2010). According to Zalina and Norshidah (2020), the use of this multimedia BBB has the potential to produce an interesting learning experience for students so that they can stimulate their concentration in the classroom, especially for students with poor learning and lack of focus. It is clear that PdPc resources with the help of multimedia materials are able to stimulate students' senses and improve memory to master the content of the lesson.Referring to the Education (Special Education) Regulations 2013, a pupil with special needs is defined as a child certified by a medical practitioner, optician, audiologist or psychologist as the case may be whether in government service or not as a pupil who have a visual disability, hearing disability, speech disability, physical disability and learning disability or a combination of any disability and disability. The Special Education Program Operation Guidebook (2015) has specified 6 categories of students with special needs, namely (1) hearing impaired; (2) visually impaired; (3) speech disability; (4) physically disabled; (5) learning problems; (6) various (multiple disabilities).While autism is one of the categories of students with learning disabilities. Razhiyah (2009) interprets the term autism from the word autos which means self and ism which means a flow. Autism causes the individual or child to concentrate in his own world. According to Maimun et el. (2017), autism spectrum symptoms are disabilities experienced by children such as problems with thinking, feeling, language acquisition and the ability to relate to each other. According to him, the physical appearance of these children usually looks normal but has behavioral disorders. Autism is a neurodevelopmental disorder categorized as behavioral disability and excessive behavior such as limited, repetitive and the same behavior (American Psychiatric Association, 2013). Neurological disorders involve the development of social communication, social interaction and repetitive and limited behaviour. Autistic children are isolated from the world of the social environment due to language ability problems (Kuttler et al, 2015)

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