Digital Learning based on Hypermedia for Special Teacher Assistance in Junior High School

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Abstract

In inclusive education, in addition to teachers, there are also subject-specific assistant teachers. Inclusive education is education that brings together children with special needs with normal children in general to carry out learning activities. In other words, inclusive education stipulates that schools must provide accommodation to all children regardless of their physical, intellectual, social-emotional, linguistic or other conditions. This study aims to analyse the needs of special teacher assistance as a strategy to improve their pedagogic competence in the digital era. This research uses a qualitative approach through a case study of special teacher assistance at School of Human Junior High School. In-depth interviews, observation and documentation were conducted in stages. This research collaborated with 15 special teacher assistance. The results of this study show that at the time of the replacement of special assistant teachers who have an educational background that is not from the special education study programme. In this case, of course, special assistant teachers cannot directly understand the situation in the classroom and also the situation of students with special needs. Therefore, a training guide for special teacher assistance is needed. The use of digital learning is needed to facilitate special teacher assistance in conducting training and independent learning. Thus, the development of hypermedia as a digital learning model is an alternative for special teacher assistance in improving their pedagogic competence.

Keywords: Digital Learning; Hypermedia; Special Teacher Assistance; Junior High School; Inclusive Education.

Introduction

Technology continues to develop rapidly, encouraging various academics engaged in education to continue to innovate in learning activities, including special assistance teachers. Innovation in learning cannot be separated from the role of integrated technology. According to Heinich et al. in (Prawiradilaga, 2012) explains that technology leads to the process of applying scientific and structured knowledge. Thus, technology becomes both a process and a way of thinking and is not only limited to products such as computers and satellites. One of the rapidly growing technologies in education is digital learning.

Some previous studies have developed digital learning in inclusive education(Bong & Chen, 2024). Digital learning in the context of inclusive education leads to the use of digital technology in the learning process. Thus, learners can access the learning. In Indonesia, the inclusive education policy is based on the prevailing laws and regulations in Indonesia. The 1945 Constitution Article 28H paragraph (2) explains that everyone is entitled to facilities and special treatment to obtain equal opportunities and benefits in order to achieve equality and justice. Therefore, the government has developed a policy related to inclusive education for students with special needs as stipulated in Law No 20 of 2003 on the National Education System. In addition, policies related to inclusive education are also contained in Law No 8 of 2016 on persons with disabilities Article 10 states that learners with special needs are entitled to quality education services in all types, pathways and levels of education. Therefore, quality education services lead to the creation of a flexible and adaptive learning environment.

On the other hand, the Coordinator of the Inclusive Education Working Group of the

Directorate of Community Education and Special Education of the Ministry of Education and Culture explained that there are 40,164 schools that have students with special needs. Unfortunately, of these students, there are only 5,956 schools or 14.83 per cent of the total schools that have special mentor teachers for children with special needs (Kompas, 2024).

The problem with inclusive education is not only the number of special mentor teachers but also the competence of special mentor teachers. Some academics consider that positive teacher attitudes, accepting and supporting the learning of children with special needs can support the success of inclusive programmes. However, Kim (2011) explained that secondary education teachers with higher degrees (i.e. master's degrees and higher) showed more negative attitudes towards inclusion than teachers with lower levels of educational attainment. Differences in teacher perceptions are also based on experiences related to special education. Aurina and Zulkarnaen (2022) shows that special assistant teachers are required to have special skills. Special assistant teachers are teachers who have knowledge and expertise in the field of children with special needs who assist or work together with regular school teachers in creating inclusive learning. Thus, the role of special assistant teachers is needed and effective in helping students with special needs to learn and understand lessons in inclusive schools.

Study of Jami et al. (2024) The main challenge faced by special assistant teachers is managing their emotional state and remembering the characters of children with special needs. Thus, a guide is needed that can train the teaching skills of special assistance teachers. In addition, El-Rashidy (2023) menunjukkan bahwa kondisi guru pendamping Special assistance teachers currently have weaknesses in teaching preparation. Therefore, training is needed to improve the understanding of special assistance teachers (Putri et al., 2020). Inclusive education is not only available at the kindergarten to primary school level but also at junior secondary schools. School of human is one of the private junior high schools in Bekasi that organises inclusive education and applies multiple intelligence-based learning to its students. The school has the tagline 'Discover Multiple Intelligences' or some call it a school that humanises people (school of human).

Previous research conducted by academics pointed out that teacher competence is very influential and can be improved through various training methods. However, these studies did not explicitly focus on special assistance teachers. In addition, the results of previous research studies also identified barriers that occur in learning and learner participation to equalise differences in learning in schools that organise inclusive education. Meanwhile, special assistant teachers must be able to understand the individual needs of learners with disabilities and implement adaptive learning strategies. In addition, special assistant teachers are also faced with the use of technology. So, the ability to use digital technology in learning is needed by special assistant teachers. Therefore, this study aims to analyse the needs of special teacher assistance as a strategy to improve their pedagogic competence in the digital era.

Method

This research method uses Research and Development adapted from Sugiyono (2015). Research and Development is used to produce certain products, and test the feasibility and effectiveness of these products so that they become products that can be utilised. Of the existing development models, researchers used the MPI model developed by Atwi Suparman (2012). The specific objectives of this development refer to the Instructional Development Model (MPI), which can be described as follows: 1) Identifying instructional needs and writing general instructional objectives; 2) Conducting instructional analysis; 3) Identifying learners' initial behaviours and characteristics; 4) Writing specific instructional objectives; 5) Developing learning outcome assessment tools; 6) Developing instructional strategies; 7) Develop instructional materials; and 8) Design and conduct formative evaluation. However, in this study, researchers only carried out the process of identifying instructional needs and writing general instructional objectives up to compiling learning outcomes assessment tools. In developing the hypermedia integrated learning module, the researcher conducted data

collection techniques that were adjusted to the MPI development procedure, namely in-depth interviews with 15 special assistance teachers at SMP School of Human. This interview was conducted as a step for researchers to identify instructional needs and write general instructional objectives for the learning module. In addition, observation was conducted to identify the behaviour and characteristics of special assistance teachers when conducting learning activities. This observation was carried out three times using indicators of the dimensions of the inclusive education index. Data analysis techniques used data reduction, data presentation and conclusion drawing.

Result and Discussion

In today's technological era, modules are no longer just learning manuals but also personal learning assistants(Harden et al., 2011). Harden et al. (2011) view that teachers are encouraged to consider a through-module approach as a learning resource. Ibrahim et al. (2016) introducing a graphic design learning module for children with special needs. Learning modules for children with special needs must fulfil the needs of students in terms of technology and learning styles in order to reduce learning difficulties, especially in terms of communication (Ibrahim et al., 2016). Gjessing et al. (2014) added that the use of modules can improve quality and enable critical thinking and lifelong learning for users. With regard to this, the module has a special companion teacher role to support the learning process. According to Hadiansah et al. in (Murti et al., 2023) explained that a module is a document that is compiled starting from the objectives, steps and learning media as well as the required assessments.

Based on the results of identifying instructional needs to special assistance teachers, there are obstacles in the learning process, namely the learning modules used.

'We do not have learning modules related to special assistance teachers. So, we only learn from the supervising teacher's instructions.' (Interview Result RA, 2024)

'In the learning process, I usually browse the internet related to the duties of the accompanying teacher. Because there is no training to become a special assistant teacher. I only get direction from the mentor teacher and the principal.' (MD Interview Result, 2024).

The results of RA and MD interviews show that the need for a learning module containing the duties of special assistance teachers is important for them. Then, researchers identified the need for learning modules for special assistance teachers.

'Technology-based learning modules can provide convenience if available. Because we can access it anywhere. Moreover, the tutorial videos are also provided' (SA interview result, 2024).

Technology-based learning that can be developed is digital learning. Digital learning includes hardware aspects (infrastructure) in the form of a set of computers that are interconnected with each other and have the ability to transmit data, both in the form of text, messages, graphics, video and audio. With this ability, digital learning can be interpreted as a computer network that is interconnected with other computer networks throughout the world. In other words, digital learning can be an alternative form of information technology applied to inclusive education for special assistance teachers. Thus, digital learning can be a transformation of the learning process in inclusive education. Digital learning has the potential as a communication tool, accessing information and educational and learning tools. Then the researchers analysed the understanding of special assistance teachers regarding the use of hypermedia.

Based on the interview results, out of 15 special assistant teachers, only two people know and have used hypermedia. Thus, hypermedia is a new media for special assistance teachers. Hypermedia is a tool that provides navigation on its media for users. Therefore, hypermedia becomes the hardware and software system used to create and display hyperdocument. The results of this research answer the study conducted by Sanchez et al. (2019) that schools providing inclusive education need to restructure to identify barriers to learning.

Special assistance teachers need a learning module as their guide to deal with children with special needs when they start to become unconducive in learning. Thus, hypermedia-based digital learning can be a

way out for special assistance teachers. Susari (2020) explained that the training model can improve teacher competence. However, training alone is not enough because special assistant teachers need guidance that can provide direction for them in the learning process in the classroom with children with disabilities. Therefore, this study shows that the importance of special assistant teachers' understanding of inclusive education through hypermedia-based digital learning(Malian & McRae, 2010)

Conclusion

This research concludes that the world of education is moving forward dynamically and inclusive education is no exception. The use of media in the learning process not only aims at student output but also the competence of special assistance teachers. The integration of technology in learning is also needed by special assistance teachers so that they can improve the quality of the learning process. So, to be able to realise this, special assistant teachers need hypermedia-based digital learning. The use of digital learning is needed to facilitate special teacher assistance in conducting training and independent learning. Thus, the development of hypermedia as a digital learning model is an alternative for special teacher assistance in improving their pedagogic competence.

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