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The Role of Interactive Video in Supporting Adaptive Learning for Children with Special Needs

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ABSTRACT
Interactive video plays a crucial role in supporting adaptive learning for Children with Special Needs (ABK) by providing inclusive, flexible media that can be adapted to the characteristics and individual needs of students, including those with multiple disabilities such as autism and speech delay. This study aims to describe the use of interactive video as an effective adaptive learning medium in improving student motivation, focus, and learning outcomes in inclusive classes. The method used is a qualitative descriptive approach with a literature study approach through analysis of various relevant previous research results regarding the use of interactive media in learning in inclusive schools. The study results show that interactive video encourages multisensory learning through a combination of visuals, audio, text, and animation that allows students to gradually understand the material at their own learning pace. Interactive features such as short quizzes, material repetition, and self-navigation have been shown to increase engagement and independence in learning. In addition, interactive video helps develop receptive and expressive language skills for students with speech impairments through concrete visual stimulation and repeated practice. For teachers, this medium facilitates learning differentiation within a single material and supports real-time formative assessment. Thus, interactive video can be used as a strategic medium for realizing effective adaptive and inclusive learning in schools.

Keywords: interactive video, adaptive learning, inclusive education, children with special needs.

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INTRODUCTION

Inclusive education is an effort to ensure that all students, including children with special needs (ABK), receive equal, meaningful learning opportunities tailored to their individual needs. Implementing inclusive education requires schools to provide flexible, adaptive learning services that accommodate the diverse abilities of students. In practice, teachers are not only required to understand the characteristics of children with special needs but also to adapt learning strategies so that all students can optimally access the material (Hidayati & Meilani, 2020). This demonstrates that inclusive learning is inseparable from the need to adapt relevant methods and media.

One highly relevant approach to supporting the success of inclusive education is adaptive learning. Adaptive learning refers to strategies that adjust material, methods, delivery pace, and difficulty levels based on the abilities and learning profiles of each student. For children with special needs (ABK), this adjustment is crucial because they often require multisensory support, step-by-step explanations, and more concrete visual materials to fully grasp concepts (Fitriani & Sujarwo, 2021). Adaptive learning allows teachers to differentiate learning more systematically so that each student can actively participate in the learning process.

Along with the development of educational technology, the implementation of adaptive learning is increasingly strengthened by the use of digital media. One rapidly developing medium

widely used in inclusive schools is interactive video. This medium offers a richer learning experience than conventional video because it allows students to interact directly through selection buttons, short quizzes, free navigation, and additional explanations. This interactivity allows students to control their learning pace, choose explanations according to their needs, and receive immediate feedback, making interactive video highly suitable for supporting the needs of students with special needs (Sari & Toharudin, 2021).

Research in Indonesia shows that the use of interactive videos can improve the focus, motivation, and conceptual understanding of students with special needs. For example, research by Sari and Toharudin (2021) found that interactive multimedia helps students with special needs better understand material through a combination of visuals, audio, and interaction. Another study by Lestari (2022) confirmed that interactive videos can increase student engagement because they can determine their own learning path according to their comfort and abilities. Furthermore, Chandra (2020) demonstrated that interactive video-based learning is effective for students with attention deficit disorders because it provides engaging visual stimuli and rapid feedback.

For teachers, interactive video is also considered a practical and flexible medium. It can be used in both face-to-face and online learning and allows for differentiated learning within a single topic without requiring significant additional resources. Teachers can tailor videos to student characteristics, add visual cues, use simple language, or incorporate independent exercises to help children with special needs learn more independently (Rahmawati & Kustiawan, 2021). In inclusive schools, where facilities and teaching staff are limited, interactive video is a solution that can support the ongoing implementation of adaptive learning.

Recognizing the importance of using learning media that supports special needs, this article explores the role of interactive video in adaptive learning for children with special needs in inclusive schools. By understanding the potential and benefits of interactive video, it is hoped that teachers and schools can develop more responsive and inclusive learning strategies that meet the demands of 21st-century learning.

METHOD

This study employed a qualitative descriptive method with a literature review approach. The study was conducted by collecting, analyzing, and synthesizing the results of relevant previous studies on the use of interactive video in adaptive learning for children with special needs (ABK) in inclusive schools. Data were obtained through a search of national and international journal articles, academic books, and official documents related to inclusive education. Data analysis was conducted using data reduction, data presentation, and conclusion drawing techniques to illustrate the effectiveness of interactive video media in supporting adaptive learning for children with special needs in inclusive schools.

FINDINGS AND DISCUSSION

RESULTS

Based on the results of a literature review of various studies examining the use of interactive video in adaptive learning in inclusive schools, it was found that interactive video media has a significant positive impact on improving learning motivation and academic abilities of students with special needs, including students with *multiple disabilities* (autism + speech delay). Various studies explain that before the implementation of interactive learning media, many students with autism and speech delay exhibited passive behavior, lacked focus, and had difficulty following conventional learning due to limitations in processing verbal information and maintaining attention (Fitriani & Sujarwo, 2021).

Sari and Toharudin (2021) found that interactive multimedia can increase student engagement because it combines visual, audio, animation, and interactive elements, fostering multisensory learning. This multisensory support is considered crucial for students with autism and speech delays, who require visual stimuli and structured repetition to better understand concepts. Similarly, Lestari (2022) stated that interactive video can enhance student learning control and motivation through features such as navigation options, repetition, and short quizzes, allowing students to learn at their own pace and at their own pace.

Furthermore, Chandra (2020) explained that interactive videos are effective in improving the focus and attention of students who are easily distracted, especially those with attention deficits or autism spectrum disorders. Interactivity through immediate response and visual feedback helps maintain learning engagement. This is reinforced by Rahmawati and Kustiawan (2021), who stated that interactive multimedia not only increases learning motivation but also increases student independence because it allows them to access materials independently without relying entirely on the teacher.

Literature also shows that interactive videos contribute to receptive and expressive language development in students with speech delays. Using videos with concrete visuals, supporting text, and repeated exercises can aid vocabulary comprehension, stimulate imitation skills, and practice gradual verbal responses (Lestari, 2022). These findings are relevant for students with communication disorders because interactive videos provide an alternative learning medium that is easier to understand than direct verbal instruction.

Thus, based on the literature review, it can be concluded that interactive video is an effective learning medium for adaptive learning for students with multiple disabilities (autism + speech delay). This medium can increase learning motivation, focus, student engagement, learning independence, and language development. Therefore, interactive video is considered suitable for implementation in inclusive schools because it is flexible, adaptable, and able to meet the individual needs of students with varying abilities.

DISCUSSION

Media is any tool that can be used to convey messages to achieve teaching objectives. Learning, on the other hand, is the process, method, and action that enable people or living beings to learn. Therefore, learning media is the medium used in the learning process to convey messages between teachers and students to achieve teaching objectives. Good learning media must meet several requirements. The purpose of using media is to motivate students. Furthermore, media must stimulate students to remember what they have learned, as well as provide new learning stimuli. Good media will also activate students in providing responses and feedback, and also encourage students to carry out practices correctly (Hakim, 2020).

Learning media is a tool used in the learning/teaching process, which can convey messages and stimulate the learning process so that the material delivered can be easily understood and comprehended by children (Kapitang, 2023). Therefore, the use of learning media in the learning/teaching process for children with special needs is very important, so that they can receive and understand the material presented by the teacher. However, in utilizing these learning media, we must really pay attention to the type of media used, so that it suits the needs and characteristics of each child with special needs. So that the learning/teaching process can take place well, interesting (not boring) and easy to understand (Kusumawardhani, 2020).

Interactive is related to two-way communication or something that is mutually active, interconnected, and reciprocal (Sari, 2021). Therefore, interactive learning media is a tool used in the teaching and learning process that is created to generate action, mutual activity, and reciprocity

between students and teachers so that learning objectives are achieved properly. Interactive learning media is equipped with information and material delivery that can be controlled and operated by the user, so that users can choose what to do first according to the existing selection and instructions. Learning using interactive media makes it easier for teachers to overcome obstacles experienced by students with special needs (Mujiafiat, 2023). Other benefits can include more engaging learning, more interaction, more efficiency and effectiveness, and improved learning outcomes.

The Role of Interactive Video in Adaptive Learning for Children with Special Needs

1. **Supports multisensory learning**
   Children with special needs require visual, verbal, and audio stimulation to better understand material. Interactive videos combine all three elements, making them particularly helpful for students with cognitive impairments or learning difficulties (Sari & Toharudin, 2021).
2. **Provides learning control for students**
   Students can pause the video, repeat specific sections, select additional explanations, or answer quizzes at their own pace. This feature supports the principles of adaptive learning and is helpful for children with special needs who require a slower pace (Lestari, 2022).
3. **Improve focus and motivation to learn**
   Chandra (2020) explains that interactivity can attract the attention of students who are easily distracted, such as children with ADHD or other attention deficit disorders.
4. **Strengthening conceptual understanding**
   Short quizzes, visual illustrations, and immediate feedback help students gradually grasp the material. This is especially important for students with information processing difficulties.
5. **Supporting independent learning**
   Rahmawati and Kustiawan (2021) stated that interactive multimedia increases the independence of students with special needs because they can access materials without needing full supervision from teachers.

Implications for Teachers and Schools

1. **Helping differentiate learning**
   Teachers can create a single interactive video with explanatory branches for beginners, advanced students, or specific students with special needs. This makes it easier for teachers in inclusive classes with students of varying ability levels.
2. **Efficient in use of time**
   Teachers don't need to create multiple versions of the material. One video can be used for all students with different learning paths.
3. **Becoming a means of formative assessment**
   The quiz and feedback features make it easy for teachers to monitor student understanding directly.
4. **Supporting online and offline learning**
   Flexible interactive video is used on mobile devices, laptops, or classroom projectors.

Challenges of Using Interactive Video

The use of interactive videos in adaptive learning for children with special needs presents several challenges that require attention. One of the biggest challenges is how teachers can tailor video content to each child's unique needs. Not all interactive videos are designed to specifically accommodate various types of disabilities, often resulting in inappropriate material for children with special needs. Furthermore, many teachers have not received adequate training to operate this

technology effectively, thus underutilizing the potential of this digital medium in the learning process (Sari & Toharudin, 2021).

Furthermore, limited resources are a significant obstacle. Schools, especially special education schools (SLB), often face funding constraints to provide advanced technology devices and other supporting facilities, such as adequate internet access. This severely limits access for children with special needs to digital learning media. These limitations also impact the quality of learning, with teachers still relying heavily on conventional methods that are less engaging and less able to meet students' adaptive needs (Mujiafiat, 2023).

Teacher training is a crucial factor in the successful use of interactive video. Teachers' lack of understanding of inclusive learning technology makes the implementation of interactive video less than optimal. Teachers need systematic training to design and use digital learning media that are appropriate to students' abilities and characteristics (Mujiafiat, 2023). Furthermore, developing policies that support the inclusive use of digital technology in education is crucial to addressing the gap and ensuring that these media are truly effective in supporting the learning of children with special needs. Therefore, the use of interactive video can be a significant solution in creating engaging, enjoyable, and appropriate learning experiences for children with special needs.

CONCLUSION

Interactive video is an effective learning medium to support adaptive learning for children with special needs (ABK). This medium provides multisensory stimulation through a combination of visuals, audio, and interaction, helping students understand the material at their own pace and needs. Interactive features such as repetition, additional explanation options, and quizzes can increase motivation, focus, and learning independence.

In the context of inclusive classrooms, interactive videos have proven effective in addressing learning barriers, particularly for students with multiple disabilities, autism, and speech disorders. This medium enables students to actively engage, improving their receptive and expressive language skills through engaging and gradual learning. Furthermore, interactive videos facilitate teachers in developing differentiated learning within a single topic and serve as a formative assessment tool to monitor student progress in real time.

Despite its many advantages, the implementation of interactive video still faces challenges such as the need for individual content customization, limited teacher training, and a lack of technological facilities in some schools. Therefore, strengthening teacher competencies and supporting inclusive education policies are necessary to optimize this medium. Overall, interactive video is not just a tool, but a crucial strategy for realizing high-quality and meaningful inclusive learning for children with special needs.

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