Literature Study on the Utilization of Interactive Multimedia in Learning for Early Child Students

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Abstract
In recent years, there has been an increasing interest in exploring the potential of interactive multimedia as a learning tool for early child students, as it offers various engaging and interactive elements that can enhance their learning experiences and outcomes. This study aims to provide an explanation regarding the application of interactive multimedia in learning. This research was carried out using the Literature Review method. The data sources which later became the subject of this study consisted of 13 selected articles based on a review of keywords and the year of publication of relevant scientific articles and books. The data analysis technique in this research uses descriptive analysis techniques, so that the findings of the articles can be analyzed descriptively in their application to learning activities. The results of a review of several literatures show that applications and multimedia content can be used as learning resources during learning, and ensure that the learning process remains active, dynamic and efficient. It is known that through the application of interactive multimedia it is also possible to increase the interest and learning motivation of early childhood students. So, it is hoped that this interactive multimedia can certainly be adopted by teachers during learning activities.
Keywords: *Early students, Interactive multimedia, Learning outcomes*

INTRODUCTION

Education is a means for a nation to progress, for that every citizen should follow the level of education, be it formal, non-formal or informal education. And it is mandatory for every citizen of the country to attend formal education, both at the early childhood education (PAUD), basic education, secondary education and higher education (Salirawati, 2021). Early childhood education is a coaching effort aimed at children from birth up to the age of six which is carried out through the provision of educational stimuli to help physical and spiritual growth and development so that children are ready to enter further education. This age is often called the "golden age" (the golden age) which only comes once and cannot be repeated, which is very decisive for developing human qualities (Amalina, 2020),(Misrawati & Suryana, 2021).

During teaching and learning activities in the classroom the teacher must use learning media so that students are more enthusiastic about participating in learning, especially in learning at the early age level and basic education. As it is known that learning media is an intermediary for everything that can be used to convey messages and stimulate the learning process in the learner (Munawaroh et al., 2022). Learning media used in learning activities can affect the effectiveness of learning (Nurlaili, 2018). The application of innovative learning media can accelerate and improve learning efficiency so that learning objectives can be realized properly (Wahyuni et al., 2020). One form of learning media is interactive multimedia. This multimedia runs sequentially, for example TV and movies. Interactive multimedia is a multimedia that is equipped with a controller that can be operated by the user, so that the user can choose what he wants for the next process (Nugroho & Surjono, 2019). Multimedia means the combination of at least two input or output media. This media can be in the form of audio (voice, music), animation, video, text, graphics and images (Rohmah & Tegeh, 2022). The use of interactive multimedia learning media is an alternative that teachers can use when the learning process takes place in the classroom. Interactive multimedia can be understood as a combination of various text, graphic, photographic, animated, video and audio media elements presented with the same unit (Munawaroh et al., 2022),(Sumatiningsih et al., 2021). Interactive multimedia has several features that other media do not have, including: (a) interactive by providing easy feedback (b) freedom to determine learning topics and (c) systematic control in the learning process (Sumatiningsih et al., 2021). Some research also shows that interactive multimedia can make it easier for students to learn languages (Alobaid, 2020), form the character of student nationalism (Nugroho & Surjono, 2019), and improve overall learning outcomes (Rejekiningsih et al., 2022).

It was identified that through the application of interactive multimedia it can provide stimuli in the form of students being active in learning activities, motivating each other and helping students understand learning material (Wiana et al., 2018). Besides that, there are many findings that show that learning using interactive multimedia can increase student participation, critical thinking, learning outcomes, motivation, analytical thinking, exploring knowledge about learning concepts that are difficult to understand for students at the early and elementary education levels (Lubis et al., 2021),(Shamir et al., 2019). While there are many findings regarding the benefits of interactive multimedia, therefore, this article aims to identify how interactive multimedia is used in various cases at the early education levels through a literature review regarding its application to learning activities.

METHODS

This research is a type of literature review research (Snyder, 2019), the use of this type of research, of course, aims to provide information that focuses on a particular topic. One of the techniques for proving or approaching a particular problem or it can be said

that literature review is a scientific process that produces output in the form of reports intended to carry out scientific research or focus a study (Kurniawan et al., 2019). Sources of data in this research were collected from various scientific journals in the form of documents related to the material or topics discussed (Cooper, 1998). So that the reference data sources used in this study are scientific journals and books, the data collection technique is document review through literature searches from various scientific work databases consisting of SINTA, Google Scholar and DOAJ (Cherni et al., 2020). Data analysis techniques in this study used analytical descriptive (Silalahi, 2015). Through regular grouping activities from the data that has been obtained according to criteria and variables relevant to the research topic, namely "interactive multimedia, multimedia, learning media, early childhood students", then understanding and explanations are given so that it can be understood properly by readers.

RESULTS AND DISCUSSIONS

The following are the findings of various articles from referenced database sources and refer to keywords or search variables for scientific papers that are the data source. The results of various articles as a form of review activity managed to find 13 relevant articles based on the keywords and variables of this study. A total of 13 selected articles come from various databases, be it SINTA, Google Scholar or DOAJ. Several selected articles have shown us that the use of interactive multimedia has had a very positive impact on student learning outcomes, both cognitively, attitude and the impact of improving student skills (Alobaid, 2020),(Wiana et al., 2018),(Gultom et al., 2021), This is of course very worth considering as one of the learning media that can be applied by teachers, especially for teachers at an early age level, considering that most of the characteristics of the students still like games while carrying out learning. Some of the selected articles as data sources are presented in the table 1.

Table 1. Study Results and Research Findings

No.	Authors	Title	Findings
1.	(Christina & Ganing, 2021)	Multimedia Interactive Learning on Indonesian Language Content	Based on the results of the study, showed the feasibility percentage level of interactive multimedia according to learning material experts was 95%, the percentage level of the feasibility of interactive learning media according to learning design experts was 90%, and according to individual trials, the percentage level of the feasibility of interactive learning multimedia was 96.52% with excellent qualifications. This development research indicated that the development of interactive multimedia learning assisted was suitable for use in the learning process on Indonesian language content in literary appreciation for grade III elementary school students.
2.	(S. A. Hasanah et al., 2021)	*Pengembangan Multimedia Interaktif Berbasis Kebudayaan Lokal pada Tema Indahnya Kebersamaan untuk Siswa Kelas IV* [Development of	The results of this research show that the practicality of the product reaches 94.5%, and the level of attractiveness reaches 95.9%. The results of the t-test calculation for the cognitive domain were 8.746 1.671, the affective domain was 6.028

		Interactive Multimedia Based on Local Culture on the Beautiful Theme of Togetherness for Grade IV Students]	1.671, and the psychomotor domain was 3.705 1.671. The three t-test analyzes show t-empirical t-table. It was concluded that interactive multimedia was valid, practical, interesting and effective
3.	(U. Hasanah et al., 2021)	Analysis Of The Need For Interactive Multimedia Development Based On Inquiry Training On Science Learning In The Pandemic Period	This research showed that there are limitations to the media that teachers provide to students in science learning during this pandemic. The results of the questionnaire analysis of student needs show that 1) the teaching media needed by students is interactive multimedia and 2) the material needed by students is the digestive and respiratory systems in humans, as well as the reproductive and circulatory systems in humans.
4.	(GebreYohannes et al., 2016)	Impact of multimedia in Teaching Mathematics	This research present an approach on how to teach mathematics courses by integrating meaningful multimedia technology to foster the learning process. Specifically, this paper focuses on how the integration of multimedia-based teaching approach into a Calculus and Numerical Methods module impact on student's performance and their attitudes toward educational technology, that can be used as a references for the teacher when they teach math in classroom.
5.	(Rais Ruli, 2019)	*Aplikasi Modul Pembelajaran Berbasis Interactive Multimedia Learning Pada Paud Garasi Jakarta Menggunakan Metode Mimba – Aiueo* [Learning Module Application Based on Interactive Multimedia Learning at Paud Garage Jakarta Using the Mimba – Aiueo Method]	The use of digital learning aids, one of which is using computer media, can be an option to help improve facilities and infrastructure that support the Bimba AIUEO learning process for early childhood education in PAUD Garasi. Interactive multimedia application contains AIUEO Bimba material with audio and visual displays that can be used as a solution to the problem of the lack of teaching aids for AIUEO Bimba learning in PAUD Garage.
6.	(Nur Jannah, 2020)	*Efektivitas Penggunaan Multimedia dalam Pembelajaran IPA di SD* [The Effectiveness of Using Multimedia in Learning Science in Elementary Schools]	The results of the analysis show that the use of multimedia is very effective in science learning theme 7 sub-theme 3 on heat material in class V SDN Lamper Tengah 02 Semarang, based on the average difference test showing sig = p-value 0.000. This value is less than 0.05 (0.000 <0.05), so the proposed hypothesis is accepted, namely the use of multimedia is effective in improving science learning for class

			V SDN Lamper Tengah 02 Semarang.
7.	(Saputri et al., 2018)	Need Assessment of Interactive Multimedia Based on Game in Elementary School: A Challenge into Learning in 21st Century	The result of this study showed that: (1) Primary school teacher had used learning media, such as book, picture, real object, and environment; (2) Teac hers and students needed interactive multimedia based on game to support learning activity at primary school. Thus, the teachers were suggested to develop interactive multimedia based on game by involving experts to produce attractive multimedia and improve learning quality.
8.	(Choiriyah et al., 2022)	The Effectiveness of Multimedia Learning for Distance Education Toward Early Childhood Critical Thinking During the COVID-19 Pandemic	The results confirmed that multimedia-based learning for distance learning could develop critical thinking skills in early childhood children during the COVID-19 pandemic. The results of this study offer exploration of learning strategies to improve children's critical thinking.
9.	(Rachmadtullah et al., 2018)	Development of computer-based interactive multimedia: study on learning in elementary education	Computer-based learning media is the use of a computer to help present learning materials to students, monitor the progress of learning or choose additional learning materials in accordance with student learning needs individually or is a form of application and use of computers that are applied in student learning directly to convey the content of the lesson, providing student learning exercises. The results of this study found that interactive multimedia applications based on computer valid and suitable for use in teaching and learning activities in primary schools.
10.	(Munawaroh et al., 2022)	*Pembelajaran Bahasa Daerah melalui Multimedia Interaktif pada Anak Usia Dini* [Regional Language Learning through Interactive Multimedia in Early Childhood]	Interesting regional language learning media will make it easier for students to remember the material presented by the teacher and re-grow a sense of love for the local language. The results of the study found that learning local languages in early childhood is still lacking, because educators still use boring learning methods and learning media that are less attractive, and the use of interactive multimedia is very influential in learning local languages for children. The implication of this research is that this educational game product can be a solution to problems in online learning, because this media is flexible and can make

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			learning more varied.
11.	(Sudaryono et al., 2018)	*MEDIA ANIMASI INTERAKTIF UNTUK ANAK USIA DINI PADA RA YASIR TANGERANG* [INTERACTIVE ANIMATION MEDIA FOR EARLY CHILDREN IN RA YASIR TANGERANG]	Early childhood education is a form of education that directs the growth and development of children. In early childhood, children have a very high curiosity. Learning media is a supporting medium in the teaching and learning process. Along with the development of technology, multimedia can be used as a learning medium. Multimedia-based learning can improve the quality of student learning and in learning it will attract more students' interest in providing an easy understanding of the material because of its interactive presentation. The results of this application-based interactive animation media have been implemented in the teaching and learning process at RA YASIR Tangerang. With interactive animated media as a learning medium, students can recognize animals and can increase student interest in learning
12.	(Sumatiningsih et al., 2021)	*PENGARUH PENGGUNAAN MULTIMEDIA INTERAKTIF TERHADAP MOTIVASI BELAJAR DAN HASIL BELAJAR SISWA TEMA: PENGENALAN PANCASILA DI TK LAB SCHOOL IKIPPPGRI JEMBER* [THE EFFECT OF USING INTERACTIVE MULTIMEDIA ON LEARNING MOTIVATION AND STUDENTS' LEARNING OUTCOMES THEME: INTRODUCTION OF PANCASILA IN TK LAB SCHOOL IKIPPPGRI JEMBER]	The results showed that: 1) sig. from the variable use of interactive multimedia on student learning motivation 0.000, the conclusion is sig. > 0.05, meaning that there is an effect of the use of interactive multimedia on student learning motivation, 2) sig. of the variable effect of the use of interactive multimedia on student learning outcomes is 0.000, the conclusion is sig. > 0.05, this means that there is an effect of the use of interactive multimedia on student learning outcomes, 3) the output results of the regression analysis obtained Fcount 31,654 with sig. 0.000, because > 0.05, this means that there is an effect of the use of interactive multimedia on learning motivation and student learning outcomes together.
13.	(Gultom et al., 2021)	Development of Interactive Learning Multimedia Reading Early Children's Beginning	The results of the effectiveness of interactive learning multimedia that were developed showed the average result of reading the beginning of the child on the results of initial observations was 45%, which means the child began to develop and the result of the final observation was 83%, which means that the child

developed very well.

Some of the considerations that can be the teacher's foundation when implementing interactive multimedia assisted learning are because interactive multimedia has a dynamic appearance so that it can be a special attraction for students when compared to reading texts presented in pdf format. student imagination and student motivation with animated visualization of the subject matter (Shamir et al., 2019). Learning with multimedia is a dual code or dual channel learning, because multimedia learning uses two main materials, namely words and pictures. The use of the word material is presented in verbal form such as textual or spoken text. Using images, material is presented in pictorial form, such as statistical graphs, illustrations, photos, maps, animations and videos (Choiriyah et al., 2022). The objectives of using interactive multimedia teaching materials can be broadly understood as an attempt to present the material to be studied in a format that is more effective and efficient to use and understand (Hasanudin et al., 2022). The presence of multimedia in the learning process will be able to change abstract material into concrete, and can give students active participation in learning, get real experience, observe events in the media in the form of symbols (Yelland, 2006). Animation-based interactive multimedia can clarify the presentation of material, expedite the learning process, direct attention, generate motivation, enable independent learning, so as to improve student learning outcomes (Nurlaili, 2018). Interactive learning media allows students to interact with the media as a learning resource. Students are free to repeat the information presented if there are concepts that have not been understood (Rachmadtullah et al., 2018). The use of interactive media can make it easier for students to understand concepts and get visualization related to the concepts being studied. Multimedia is an important thing, because one of them is used as a learning tool in the world of education. In addition, in the 21st century, multimedia will soon become a basic skill that is as important as reading skills. Indeed, multimedia changes the nature of reading itself (Garcia et al., 2019),(Tyan et al., 2020). In general, the benefits that can be obtained from using multimedia in learning at school are that the learning process is more interesting, more interactive, the amount of teaching time can be reduced, the quality of student learning can be improved and the teaching and learning process can be carried out anywhere and anytime, and students' learning attitudes can be improved.

It is hoped that later after successfully identifying the various benefits of implementing interactive multimedia in learning activities, teachers will be able to facilitate students in learning at the early childhood level. The results of this study are certainly different from several previous studies, in this study the literature review discussed in the research results looks very varied regarding the impact of multimedia learning on learning outcomes, at almost all levels of education. Therefore, the use of interactive multimedia needs to pay attention to several things so that the improvement of learning outcomes can be more optimal, namely by considering the characteristics of students. So that overall, the use of interactive multimedia will provide optimal results.

CONCLUSION

Based on the results of the research analysis and discussion of the research that has been done, it can be concluded that Multimedia is the initial solution when the application of online and offline learning is applied, so apart from being a solution this is also a new learning model and system that is more creative and fun because it provides new colors and provide a view that is in harmony with the development of science. It is proven that the use of interactive multimedia is able to make students more motivated and highly participatory in learning which is expected to be able to give

students a better understanding of the material they are studying. Through the results of this literature review, it is also suggested to teachers to be able to apply and utilize interactive multimedia in learning at the early age levels, so as to create a dynamic and active learning atmosphere.

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