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The Analysis of Students Needed in Digital Teaching Media

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Abstract

Digital teaching media has become an integral part of education in the industrial era 4.0, but most schools have not facilitated it properly. This study aims to analyze students' needs for digital learning media. This study is a cross-sectional survey research, where 661 junior high school students in East Java were involved in filling out a digital teaching media needs survey questionnaire. Based on the results of the analysis, digital learning media is needed by students, especially to make it easier for them to learn science material, make learning more fun, and increase motivation and science learning outcomes. Thus, the media needs to be implemented at the education level.

Keywords: Analysis, Students Needed, Digital Teaching Media

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INTRODUCTION

The development of multimedia has excellent potential to change the way a person learns, obtains information, adapts information, and so on (Kuchai et al., 2022); (Rahmatullah et al., 2022). Technology also provides opportunities for educators to develop learning techniques to produce maximum results (Afikah et al., 2022). The current condition is urgent to make innovations and adaptations for using available technology to support learning (Muñoz et al., 2022). Its practice requires educators and students to interact and transfer knowledge online (Lin et al., 2022). Technology in learning will benefit all parties and support student learning goals ((Sanova et al., 2022); (Susilawati et al., 2022). These platforms can support knowledge transfer supported by various discussion techniques and others (Deng et al., 2023). Teacher creativity is needed to create exciting learning media and facilities (Sailer et al., 2021). Therefore, technology plays a vital role in classroom learning activities by students and teachers (Abel et al., 2022); (Muthmainnah et al. Obaid, 2023).

In the Industry 4.0 area, information technology develops fast, and learning resources are easy to obtain (Molino et al., 2020); (Zizic et al., 2022). However, technological advances cannot replace the role of teachers as educators, and this can be realized if teachers do not stop learning and developing themselves (Afikah et al., 2022); (Kotiash et al., 2022). The role of the teacher as an educator is to instill the fundamental values of character development of students in life (Hidayat & Rozak, 2022), including the wise use of advances in information technology and as an inspiration for students. In the learning process, the teacher must build interactions that can meet the psychological needs of students (Rahmatullah et al.,

2022). A teacher must make students feel able and appreciate their learning outcomes (Kustyarini et al., 2020). Students are state assets that spearhead the next generation. Therefore, the government should help them achieve the ideals of the nation. One effort is to motivate students to be able to learn optimally. So to be intelligent and efficient for the nation and state (Abdulrahman et al., 2020).

The practical implementation of any information technology or information system depends on user acceptance (Duggineni, 2023). Users in the education field are educators and students (Cohen et al., 2022). Information technology has been implemented at various levels of education, from elementary to junior high to senior high school. Junior high school is the level of education after elementary school that requires learning media. Students at the primary school level usually begin to be taught to identify problems and solve simple problems. In contrast, the level of secondary school students begin to be required to be able to identify complicated problems (Zajuli et al., 2019). Learning at the junior high school level has begun to use learning media in every subject, one of which is science (Bulkani et al., 2022); (Silalahi et al., 2022).

Students must learn measurement, weighing, counting, and other activities that serve as fundamental science, starting at the primary school level because numerous problems and activities in life must be solved (Hamna & Ummah Bk, 2022). However, despite the teacher's best efforts, the student's learning experiences, particularly science-related ones, have not yielded the expected improvements in science knowledge competency. Students or classes taught using learning media, students will have the opportunity to master the theory of lessons taught by science teachers compared to students or classes taught without using learning media. Related to this, every teacher should be able to use learning media to meet the demands of the curriculum. As is the case in the field of science studies in junior high school, if the learning media is by the demands of the curriculum, as is the case in the field of science studies in junior high school, and if the school cannot provide the learning media, then the subject teacher can make it himself in a simple form according to the ability of students to receive theoretical lessons related to the learning media used (Nadrah, 2023; Rahim et al., 2022).

In an academic context, learning media and ICT platforms are considered fundamental for their potential in knowledge creation (Akour & Alenezi, 2022); (Alismaiel et al., 2022); (Silalahi et al., 2022). Collaboration is a distinctive and necessary approach for learning in any modality, particularly for learning processes in virtual environments (Drey, 2022). Situationally shared or distributed cognition, social constructivism, activity theory, and sociocultural approaches have demonstrated the benefits of a non-individualistic concept of learning linked to cognitive and socio-emotional levels. Teachers can facilitate the creation of learning communities aligned with the emerging educational paradigm of today's social and technological environment where participants can alternate between the roles of student, designer, and active contributor (Jafar et al., 2022); (Muñoz et al., 2022) (Palioura & Dimoulas, 2022).

This condition creates a significant demand for teachers and lecturers to develop the ability to master technology and learning media. Learning media is one factor influencing the learning process (Afikah et al., 2022). The role of learning media in learning and teaching is vital for educators nowadays. Learning media can

deliver messages to recipients and help explain something simpler (Mulyati et al., 2022); (Rahim et al., 2022). The learning process will run effectively and efficiently if supporting media is available (Istyadji et al., 2022). One of the factors causing the low quality of learning is the maximum use of learning resources, both by teachers and students. Good learning media must be suitable for students' cognitive development stages. Many learning media are applied in the learning process, one of which is games. The game is fun, inviting players to try to be a winner by completing the game and going up to a higher level (Supandi & Senam, 2019).

Games are an omnipresent part of everyday life. The use of game concepts has increased astonishingly and inspired trends, such as gamification and serious games. Along with the growing popularity of games, various established research fields have utilized games, including human-computer interaction, information systems, and psychology. Concepts from games are particularly relevant for the digital learning domain, which has been recognized by many high-impact publications and has grown in importance over the past decade. In digital learning environments, learners must self-organize and monitor their learning process. The idea in this context is that the game element in digital learning supports learners to engage in their learning activities more regularly to achieve higher learning outcomes with the various digital innovations available today (Paľová & Vejačka, 2022); (Schöbel et al., 2021).

Digital innovation in modern education is ahead in the advanced era (Akour & Alenezi, 2022). In the modern era, schools will become laboratories for civilization and change supported by various learning aids in a practical bureaucratic atmosphere (Zubaidi & Ridlo, 2023). Materials are no longer in traditional forms with paper and blackboard; there will still be times when there will be an era of technological innovation, all midwives in science and change. In other words, in the school of the future, with technological developments, students can study anywhere, and teachers can become facilitators and moderators of learning without being tied to physical space (Zubaidi & Ridlo, 2023) (Sudarmo et al., 2021).

The advantages of using digital and electronic learning media are as follows: (1) Easily accessible; The use of digital media greatly facilitates teachers and students in accessing all information related to learning. Therefore, students' knowledge will significantly develop with the existence of this digital media. In addition, the information provided by digital media can be accessed anytime and anywhere as long as there is an internet network. (2) Improve students' cognitive abilities and creativity; Digital and electronic media can help improve students' understanding and absorption of the subject matter being studied. Learning media in digital form improves students' cognitive abilities and creativity in the distance learning process. Therefore, using digital media is a solution for students to understand the subject matter and increase their creativity. (3) The learning process becomes exciting and effective during the pandemic. For students, the learning process becomes transparent and exciting, more interactive, time and energy efficient, allows the learning process to be carried out anywhere and changes the teacher's role in a more positive and productive direction ((Alismaiel et al., 2022); (Antara & Dewantara, 2022) ;(Dinda et al., 2022).

Facts that occur in schools in Indonesia generally about using digital-based learning media in which students can choose their educational programs, pedagogy, learning experiences, and equipment in line with their specific needs and tendencies toward a learning curve. An independent learning environment is needed to create a conducive learning environment. The internet is a form of effort to improve digital technology, thus creating a big challenge, namely the application of digital technology to answer the challenges of learning today. One is using technology for subjects related to technology, namely natural science. This is because the learning of Natural Sciences emphasizes the mastery of knowledge and the discovery process so that Natural Sciences can help students understand the surrounding nature. In addition, Natural Knowledge also has several aspects, namely products, processes, scientific attitudes, and applications. The application aspect is the application of abstract concepts in concrete forms in the form of technology (Ulyawati & Sugito, 2022).

Meanwhile, the results of relevant research on digital-based junior high school science learning media include (1) (Ernest & Putra M, 2023) concluded that the digital literacy skills of experimental class students were higher than those of the control class. As for the results of the independent t-test analysis, it shows that there is a difference in the digital literacy of junior high school students who use electronic modules based on Google Sites learning science. The use of technology in learning needs to be applied. Teachers must be able to integrate technology with learning instruments to bring out other students' abilities. One of them is using electronic modules to develop students' digital literacy skills. This digital literacy will support students in seeking broader insights through the internet, which can be in line with improving student learning outcomes. In addition, learning instruments based on digital literacy also need to be developed. (2) (Hasanah & Sudira, 2021) explained that the science learning outcomes of Class VII A MTs YPUI Al-Ikhwan Topoyo students using visual-based interactive media can be said to be effective with several supporting factors in designing and designing visual media that is more prototaif and fun for students, where students who were bored with the lecture method delivered by the teacher when explaining the material, students can divert their attention from various directions so that what the teacher says is not absorbed correctly. Therefore, to overcome this, researchers are trying to design teaching materials in the form of prototype images so that students can play an active role in solving some of the problems they find during the provision of teaching materials, and (3) research conducted by (Mete & Daud, 2023) based on data analysis, research results, and discussion can be concluded that the use of used goods as learning media can improve students' science process skills.

The Urgency of Using Digital Learning Media is a learning media that works with digital data or can produce a digital image that can be processed, accessed, and distributed using digital devices. Examples of digital learning media are YouTube, e-learning, digital cartoons, and podcasts used to increase the effectiveness of the learning process. Appropriate learning media is beneficial for increasing motivation in learning, allowing direct interaction, and allowing students to learn independently. Digital learning media aims to facilitate learning and teaching activities. Therefore, using digital learning media is expected to improve the quality of the learning process and outcomes. The reasons for the importance of using

learning media are as follows: 1) Improve teachers' abilities because teachers proactively learn various digital media by using various information in the media or learning resources. 2) Improve the quality of learning: Through learning media, teachers can improve the quality of their learning by developing media that is by the learning conditions that will be implemented to activate students in the learning process; 3) Meeting student needs, which can be interpreted that learning media is needed to stimulate students' thoughts and emotions. Thus increasing student attention. Simplify complex material and increase the imagination of students' critical thinking power; 4) Meet the demands of the new paradigm, meaning that teachers are required to provide opportunities for students to experience and interpret their learning activities actively; 5) Meet long-term needs; it can be interpreted that the use of digital learning media provides learning experiences for teachers and students in exploring how to use the technology needed (Moonti & Gani, 2023).

This research aims to answer the question of how much digital learning media is needed as a tool to help the process of teaching subject matter to students. The goal is that through a systematic study and experts' findings, researchers can gain a fundamental understanding of the presence of digital media in education today and in the future. The future. By reviewing the literature cited by publications, we will find analysis and confirm the importance of digital learning media in implementing teaching and learning activities in the classroom.

METHODS

The research used a cross-sectional survey with a population of junior high school students in East Java; a random sample obtained 661 students. The data collection technique used a questionnaire with 21 questions about using gadgets as a medium for junior high school science learning. The questionnaire instrument was validated by experts and declared valid. The data analysis technique uses quantitative descriptive analysis of criteria indicators. Descriptive analysis techniques are the first type of data analysis, the method with the least amount of effort. As such, it can be used for large volumes of data. Here, data is used to perform data sets. This method summarizes the data for a simple presentation (Taherdoost, 2022). This study uses a statistical frequency test to calculate how much students need digital learning media. Microsoft Excel (2007) software was used to record data on the computer, and IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: The IBM Corp. program package was used for statistical analysis (Özcan et al., 2019).

RESULTS & DISCUSSION

Result

In the industrial era 4.0, using Android in science learning still raises pros and cons in some schools. The results of the response analysis regarding using Android as a learning media in schools can be seen in Table 1 and Figure 1.

Table 1. Criteria ”Do you agree that there is an Android-based learning media in the learning process to help in mastering the material in science subjects?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		24	3.6	3.6	3.6
	No	50	7.6	7.6	11.2
	Yes	587	88.8	88.8	100.0
	Total	661	100.0	100.0	

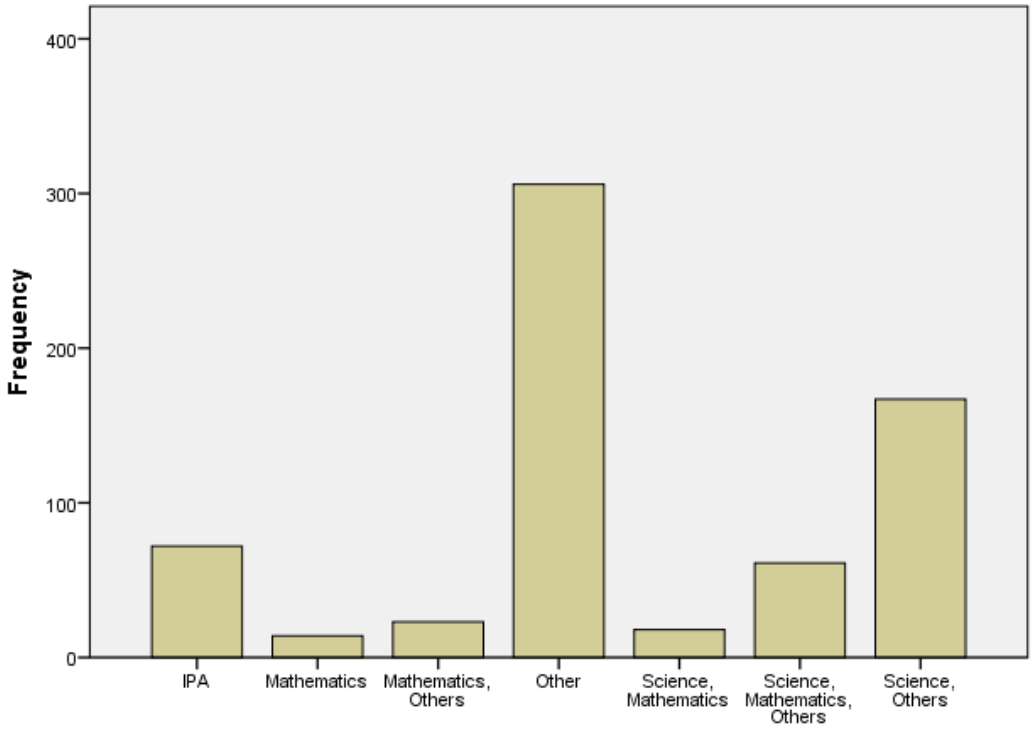

Figure 1. Criteria "If your teacher ever uses Android-based learning media in what subjects"? (You can choose more than one answer)

Table 1 states that 88.8% of respondents (students from classes VII, VIII, and IX) answered yes to the criterion "If Android-based learning media is used in the learning process to help master the material in science subjects." This answer is because students have received material from various subjects using Android-based learning media. This is shown in Figure 1. which explains that students chose other options. The respondents in this study were students belonging to Generation Z. Generation Z is a transitional generation after the millennial generation and before the alpha generation. This generation is the generation born between 1996 and 2011. Generation Z is also known as Gen Z, Internet Generation, Net Generation, or Generation I. A generation that was born amid a rapidly developing technological era. A generation that is very thick with the internet. No wonder this generation can quickly get and absorb everything from the internet. They prefer to do almost everything online. Interest in reading in bookstores has shifted to e-books, shopping

for tickets, studying, and everything else being done online because they don't want to bother or spend time going to bookstores, markets, etc. It is the internet that plays a vital role in the survival of this generation. This generation is also very active on social media such as Facebook, Twitter, Instagram, TikTok, etc (Wahyuni et al., 2023). For the Z generation, learning is more effective when using interactive learning, demonstration, and social networking, so increasing learning through technology adoption must remain the goal of educators (Sholihin et al., 2020). This is to the results of the student questionnaire where answering the "yes" option means that students agree that using android-based learning media in the learning process will make learning more enjoyable, as shown in Figure 2.

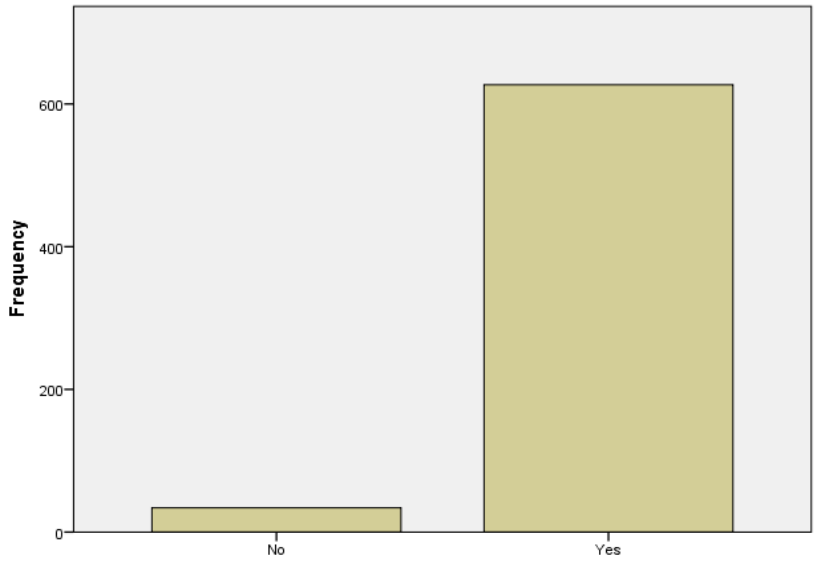

Figure 2. The use of Android-based learning media in the learning process will make learning more fun (not boring)

Table 2. Criteria ”If so, how often do your teachers use Android-based learning media in the learning process?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	563	85.2	85.2	85.2
	Often	98	14.8	14.8	100.0
	Total	661	100.0	100.0	

Most respondents thought that using Android-based learning media was more fun. This opinion is based on the previous criteria, related to whether or not teachers have used android-based learning media in learning activities, as evidenced by 563 respondents answering ”sometimes” their teachers apply android-based learning media and only 98 respondents answering ”often” their teachers apply android-based learning media in the teaching and learning process in the classroom as evidenced in table 2. Learning media tend to be used in various learning strategies and models in the classroom. The learning media used must assist students in achieving the learning objectives that the teacher has developed, for example, increasing science literacy, critical thinking, and creative and innovative thinking.

The learning media must be interactive so that students are more active in learning. This Android-based learning media has succeeded in improving student understanding, student motivation, and student cognitive learning outcomes of the material, as well as student skills in mastering technology. That way, android-based learning media is more optimized (Darwin et al., 2022).

Table 3. Criteria:" In this era, is the use of smartphones a necessity that makes it easier for you to fulfill your needs, especially in learning?"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	2.6	2.6	2.6
	Yes	644	97.4	97.4	100.0
	Total	661	100.0	100.0	

Table 3. The above proves that 644 respondents chose the "Yes" option for the criteria for using a Smartphone as a necessity, making it easier for you to fulfill your needs, especially in learning. Meanwhile, 17 other respondents chose the "no" option. This means that students, as respondents in this study, agree that in classroom learning activities, they need smartphones to make it easier to understand the subject matter delivered by the teacher. The growing importance of digital learning media in science education has brought consideration to various mobile devices. These devices offer quick access to simulations, databases, and other tools essential in the science classroom. All uses of smartphones suggest that they can directly facilitate learning in science education by facilitating improved learning achievement or indirectly by improving motivation or attitudes. Although many studies have been conducted on different types of smartphone use, it was found that the use of smartphones to support learners in improving learning outcomes and understanding the content of the subject matter through applications regarding educational content, videos, and video conferencing (Ubben et al., 2023)

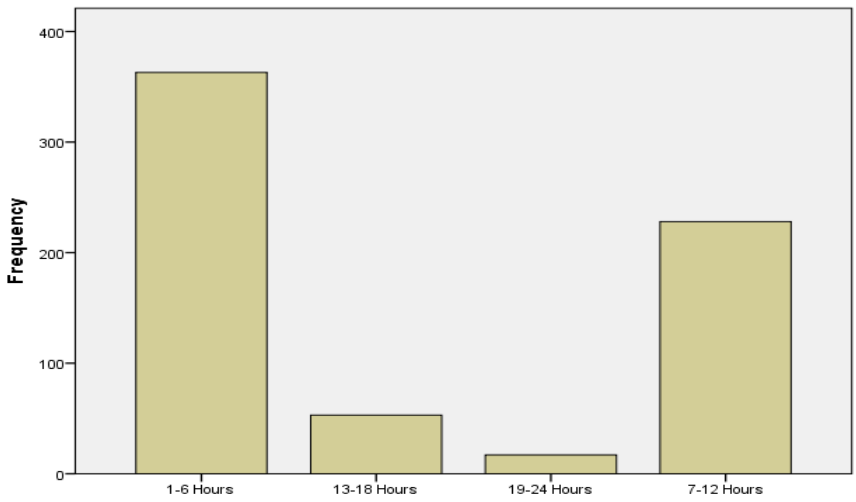

Figure 3. Criteria "How long have you been using your Android Smartphone? (Answer in Hours/Days)"

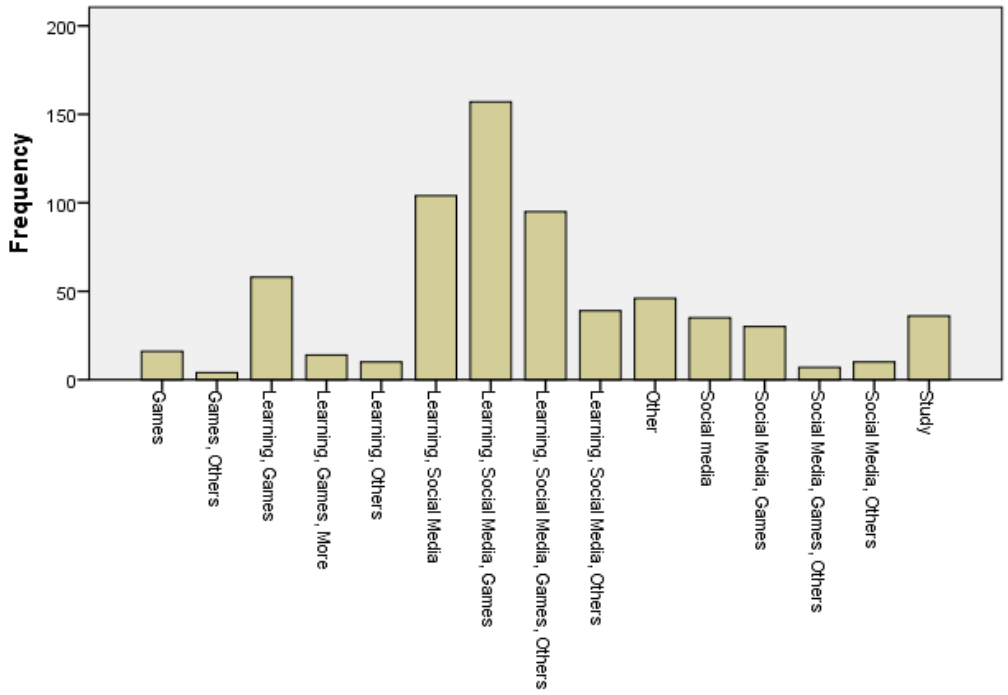

Figure 4. Criteria "For what purposes do you often use Android Smartphones? (Can choose more than one answer)"

After observations in Figure 3. and Figure 4. it is stated that respondents (students) spend more time playing Android smartphone gadgets. Most of them play Android smartphone gadgets for 1-6 hours and 7-12 hours, as seen in picture 3. It can be concluded that they play Android smartphone gadgets for <12 hours. Most of what they do while playing Android smartphone gadgets is studying, social media, and games, as seen in Figure 4. The proliferation of mobile technology provides many opportunities to support learning and performance inside and outside the classroom. With mobile technology, the learning environment can go with the student to the field site, the laboratory, and beyond. There is an opportunity to leverage mobile technology to better support students in the classroom and as they navigate the context of their learning (Tuminah & Julis, 2022). Android-based learning media that has been developed are in the form of video, PowerPoint, and applications.

This Android-based learning media has proven successful in increasing student understanding, motivation, cognitive learning outcomes towards a material, and student skills in mastering technology. In the use of Android-based learning media, there are also advantages and disadvantages. There are various uses of smartphones by study teachers, such as smartphones as a tool for finding learning media, smartphones as a tool for accessing online learning media, and smartphones as a tool for developing learning media. Given students' high use of smartphones, teachers should facilitate students' use. Its effectiveness and role (smartphones) have more excellent capabilities than laptops (Rusmaniah et al., 2023). Today's technology, especially mobile phones, is an alternative to people's needs in finding

all sources of information or the latest news, completing homework assignments from teachers, and relieving stress by watching social media videos or playing application games.

Discussion

With today's digital media and technologies, people can create, work, share, socialize, research, play, collaborate, communicate, and learn (Meyers et al., 2013). Based on the views of the UNESCO International Commission about studying communications problems, one of the roles of communication and information technology in the matter of education, i.e., transferring necessary information for growth, making and growing the personality and learning the skills, transferring necessary various and extended messages to help the learners in recognition, understanding and appreciating each other and unity in social obligations. Education is a significant means through which one can obtain psycho-movement, unity sense, argument, and self–confidence; in this case, information technology has a significant role. Technology has also been implemented in the field of education. Since education has been using technology to expand and develop various processes of the education system for more than a century, it is not surprising that the arrival of technology has increased the interest in acquiring knowledge by various methods of presenting knowledge. Nowadays, technology-based education can be obtained in various schools. Many schools have implemented schools with digital-based learning activities (Nur et al., 2023); (Wulansari et al., 2023); (Hamidi et al., 2011).

One example of technology being used in learning activities where most teachers have created digital-based learning media. The use of digital media is essential for increasing student interest and motivation, expanding their knowledge, and enhancing the quality of the learning process and learning outcomes (Muthmainnah et al., 2023). Integrating media and technology in learning requires teachers' proficiency in utilizing technology and expanding their knowledge of digital learning. The digital age requires educators' efforts to incorporate and develop technology into learning, particularly in Science Education (SE). The development of digital-based learning materials is a process aimed at creating materials or teaching resources that actively involve students in the teaching and learning process. Innovation in the use of digital learning media includes developing interactive learning content, using mobile applications or specialized software, and exploring relevant social media or other online platforms (Fadhli et al., 2023); (Nasution et al., 2023). Innovative teachers can create more engaging and motivating learning materials using digital media. They can produce instructional videos, multimedia presentations, interactive simulations, or digital learning games that align with the latest innovations in digital learning media. Teachers' creativity plays a vital role in effectively implementing digital learning media. With the virtually unlimited nature of digital learning resources, students can access a vast array of learning materials from anywhere, at any time, and with anyone. It opens the opportunity yet a challenge for teachers to continue innovating and being creative in their teaching (Kharismatunisa, 2023).

In making digital learning media, it is necessary to consider various things related to the purpose of media, target users, user interfaces, and learning materials. In this case, the purpose is to facilitate the teacher in delivering the material, creating a fun and interactive learning atmosphere to be fun and interactive and practical learning. The targets are students and teachers, so the interface must support the interests to attract interest and provide motivation to utilize this media. Utilize this media. Material delivery can be done in a classroom with a computer that students, accompanied by the teacher, can access. Thus, it is expected to be practical and helpful in learning, especially for schools with many students in one class and a limited number of teachers. The effectiveness of learning programs is characterized by the following characteristics: (a) Successfully delivering students to achieve the specified instructional goals, (b) Providing an attractive learning experience, actively involving students to support the achievement of instructional objectives, and (c) Having facilities that support the teaching and learning process. Information technology's development impacts the increasingly effective learning process (Hidayati & Wuryandari, 2012); (Ariesta & Suwarno, 2019).

The learning process will become effective when each individual involved in it participates actively in their respective duties. If students have direct experience with something to see, hold, feel, and perform physical activity, they will have specific experiences that build their knowledge. Teachers also need to allow students to exploit themselves in learning to have a good learning experience. Teachers can provide a medium of learning that stimulates students' curiosity so students have an intense curiosity for the material presented to them and become active in learning. The central concept of learning is to give motivation, guidance, and good examples (Sartono et al., 2022). The learning does not just take notice of curriculum and the final result but also should pay attention to the teaching and learning process, which is a significant influence on producing the maximum student achievement (Inganah et al., 2023); (Muthmainnah et al., 2023). The essential components that will be there in learning are (1) Curriculum, the material to be taught; (2) Process, how the material is taught; and (3) Product, the result of the learning process (Hidayati & Wuryandari. Therefore, learning media is included in the process component, which is how the material is taught. All three components are critical in classroom learning activities. Learning media has been integrated with computer technology (Roemintoyo et al., 2022).

The development of computer technology today is very supportive of the development of multimedia for learning media needs. Many application software can create learning media, such as Microsoft PowerPoint, Authorware, Lectora, Macromedia Flash / Adobe Flash, Virtual, and Adobe Captivate. In addition, the development of Internet services also provides many types of learning media ready to be downloaded and used, such as tutorial videos from YouTube and someone's blog. However, the learning media that is often ready to be downloaded and used does not match the purpose and material of learning that the teacher has determined. Therefore, the teacher must continue to provide media that aligns with the objectives and planned learning material. An essential step in learning media is undoubtedly to begin with the proper media selection process based on the theory of learning media selection, for example, Anderson's theory of choosing learning media (Marpanaji et al., 2018). The suitable media can accelerate student

understanding of the material or stimulate thinking to improve learning outcomes. Learning media occupies a strategic position in the learning process because it mediates knowledge information from teachers to students (Liu, 2022); (Wang, 2022). There are many benefits provided by learning media to students. Learning media currently trending and much favored by students is digital learning media such as learning videos and others (Hadiwinata & Wibawa, 2021).

With digital technology-based learning media in education, today's educational landscape has improved or improved. Digital learning is a learning strategy that employs technology to fulfill the entire curriculum and allows students to learn quickly and rapidly (Mhlanga et al., 2022; Munoz et al., 2022). The digital classroom entirely focuses on teaching via the use of technology. Students use technological or internet-connected gadgets like laptops, tablets, Chromebooks, etc. Instead of taking notes on what the teacher has taught, most of the curriculum is delivered to students online through an engaging and interactive platform. Despite its many facets, education is fundamentally a kind of communication. The internet has resulted in the rise of new communication channels, which have extended the options for transmitting and accessing educational information. These media and virtual venues serve as learning facilitators. Educational applications and websites are used in digital classrooms to assist students in improving their learning experience. Feedback loops and technology are two critical components of a digital classroom. Feedback loops are essential for students to obtain real-time feedback from their teachers. Teachers can use feedback loops to provide feedback depending on many factors such as student, lesson, group, etc. PPTs, video presentations, e-learning methods, online training, and other digital approaches are increasingly used in teaching-learning (Haleem et al., 2022). In other words, the widespread use of technology and the adoption of multimedia applications in the teaching and learning process in education result from its many benefits. Some of the benefits of multimedia application tools for teaching and learning are summarized as follows: (1) The ability to transform abstract concepts into concrete content, (2) The ability to present large amounts of information in a limited time with less effort, (3) The ability to stimulate students' interest in learning and (4) Provide teachers with the ability to know where students are in learning (4) Provide teachers with the ability to know where students are in learning (Abdulrahman et al., 2020) ((Kotiash et al., 2022); (Fitria, 2023); (Roemintoyo et al., 2022); (Septiana, 2022).

Understanding the learning styles helped teachers choose appropriate teaching approaches to enhance teaching effectiveness, improve learning processes and achievement, and design proper curriculum and syllabi. There are some features concerning learning style (e.g., learning concentration time, observation, discussion, tasks, online communication, browsing resources, homework completion, academic performance, etc.). The best way to provide learning to learners was to determine learning styles through indicators, for example, personality, perception, ability, and intelligence (Nguyen et al., 2022); (Pocaan, 2022); (Pardamean et al., 2022). Among the cardinal internal factors that affect students' learning performance include age, gender, heredity, cognitive intelligence, and individual learning facilities (Fauziyah et al., 2022). The external factors that affect the student's learning performance are the mode and method of instruction

given by the teacher, the qualification of the teacher, peer influence on the students, and the teacher-student ratio in a learning session (Gumasing & Castro, 2023). The Behaviorist Approach, introduced by eminent American psychologist J.B. Watson in 1913, is one of the theories. This theory's principal focus is the concept of conditioning through imitation. We have found this approach to be particularly useful in class in numerous instances. During classroom interactions, we routinely recall that people tend to associate typical sounds and words through experience and objects. The next theory associated with classroom teaching-learning is the Two Factor Theory, also known as the Motivation-Hygiene Theory or Dual Factor Theory. To a great extent, this theory is instrumental in managing classroom behavior. If the learners find interest in learning something, it becomes easy for the teachers to teach them. Bruner's Theory of Development is another theory that can be well implemented in a teaching-learning scenario. This theory was proposed by the eminent cognitive psychologist Jerome Burner in 1957, who proposed that the primary objective of education should be to promote intellectual development in learners. The theory also proposed that when cognitive development is encouraged in the learner, it manifests in the form of his or her ability to think intellectually (Munna & Kalam, 2021). ((Idris, Govindasamy, Nachiappan, & Bacotang, 2023)

CONCLUSION

Digital-based learning media can be implemented and used in teaching and learning activities with excellent categories seen from the assessment of survey results in the field and digital media practitioners in the learning process. The media is needed by students, especially to make it easier for them to learn science material, make learning more fun, and increase motivation and learning outcomes of science. Suggestions that can be conveyed in video media development are to utilize digital media to support the learning process. More innovative and creative in developing learning media to make students more accessible and exciting. The results of this study are used as a reference for conducting similar research for better development research.

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