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The Diffusion of Digital EdApp-Based Learning Motivation Innovation for Students' Social Science Learning Outcomes (Literature Studies)

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Abstract : This study aims to explore the influence of diffusion of innovations in digital-based learning motivation on learners' learning outcomes, particularly in the context of Social Studies learning using the EdApp platform. By adapting the diffusion of innovation theory developed by Everett Rogers, this research identifies effective ways to encourage technology adoption by educators and learners. The method used is Systematic Literature Review (SLR), which involves collecting and analyzing relevant articles published between 2010 and 2024. The results of the review show that the application of educational technology can improve learners' learning motivation and learning outcomes, by considering the factors that influence the adoption of technology in the learning process. This research is expected to provide insights for educators in designing a more effective and engaging digital learning system.

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Introduction

The more advanced the world civilization, the more education develops, which results in problems. Therefore, in order for humans to evolve with the times, educational civilization requires its own research. Lifelong education is therefore never-ending and ever-changing. Education is considered an applied science that meets the needs of learning as a technical discipline (Setyaningsih, 2021). It is possible that educational technology can help the educational process become more meaningful, efficient, and effective. In the growth and development of students, all the potential that students have, be it talent or creativity, is of course very important, it is necessary to understand the potential and creativity of students, because understanding the potential of students will make them capital. (Sutama, 2021).

Learning is the most important investment for every nation, especially for developing nations. Developing countries that are actively developing their countries. Learning development is inseparable from the responsibility of an educator, how educators transform the knowledge they have with existing teaching materials, and by paying attention to teaching methods that are easily accepted by students so that the goals are achieved in accordance with what is expected. After knowing the objectives to be achieved, the objectives to be achieved, then in the learning process the teacher must carry out an activity called evaluation. (Firdaus, 2024).

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Schools as formal educational institutions play a significant role in the teaching process. Education can change the outlook on life, culture and human behavior. Education also functions to lead humans to reveal the veil of life while placing themselves as actors in every change. (Putri, 2023). The success of students' learning can be determined by their motivation. Students who have high learning motivation tend to have high achievement as well, otherwise their learning motivation is low, their learning achievement will also be low. High and low motivation can determine the high and low effort or enthusiasm of a person for activities, and of course the high and low enthusiasm will determine the results obtained. (Rahman, 2022).

Motivation is the term most often used to explain the success or failure of almost any complex task. Almost all experts also agree that a theory of motivation deals with the factors that drive behavior and give direction to that behavior, it is also generally accepted that a person's motive to engage in a particular activity is based on the underlying needs. The development of information technology and computers today is one of the motivations for educators to be able to utilize them as learning media and innovative learning resources. Information technology is one part of technology that is growing rapidly and its application is very broad today. A real application of information technology in the field of education that gave birth to a new breakthrough in improving the efficiency and effectiveness of the learning process. The development of information technology these days allows teachers to carry out their activities with various conveniences. Computers can also be utilized for learning. (Firdaus, 2023).

Learners' learning outcomes vary in many areas, including academic achievement, attitude, motivation, and higher-order thinking skills. In addition, some studies suggest that learning processes and learning outcomes may differ across many factors, such as the subject of study, the duration of learning, or even the type of environmental conditions (Marton, Alba, & Kun, 2014; OECD, 2018). Finally, learner motivation is defined as the process by which learners' attention becomes focused on fulfilling their educational goals. (Chang, 2020).

In today's digital era, information and communication technology has influenced almost all aspects of life, including education. The digitization of education not only facilitates the delivery of teaching materials in a more efficient and engaging way, but also enables the implementation of more dynamic and technology-based learning innovations. One of the increasingly popular innovations in education is digital-based learning that utilizes various online learning platforms and applications, mobile devices, and other interactive media.

Along with the development of technology, the emergence of various digital learning platforms provides new challenges and opportunities in improving the quality of education, especially in increasing learner motivation. Motivation is an important factor in the learning process as it directly affects the level of engagement and achievement of learning outcomes. Digital learning allows learners to learn more independently, flexibly, and can be accessed anytime and anywhere. However, success in implementing this innovation is highly dependent on how learner motivation can be enhanced through the use of appropriate technology.

On the other hand, despite the considerable potential of using technology to improve learning outcomes, not all learners or even teachers are able to utilize technology optimally. This can be due to various factors, ranging from a lack of technology skills among teachers and learners, limited access to devices and internet networks, to resistance to change in traditional learning methods. Therefore, it is important to understand how the diffusion of educational technology innovations can take place effectively, as well as how digital-based learning

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motivation can be applied to support the achievement of optimal learning outcomes for learners.

Digital learning integrated with motivational principles can have a significant impact on learners' learning outcomes. Innovations in digital learning, such as the use of gamification, project-based learning, or adaptive learning systems that adjust to learners' learning pace and style, can increase learners' intrinsic and extrinsic motivation. Thus, research on the diffusion of motivational innovations in digital learning is highly relevant to identify factors that influence technology adoption in schools and its impact on learners' learning outcomes.

The purpose of this research is to explore how the diffusion of innovations in digital-based learning motivation can affect learners' learning outcomes. This research also seeks to provide an understanding of effective ways to encourage technology adoption by educators and learners, as well as factors to consider in designing digital learning systems that can motivate learners to achieve better learning outcomes, especially in researchers designing EdApp platforms to be part of social studies learning.

The diffusion of innovations theory, first developed by Everett Rogers (2014), explains how new concepts and technologies spread among people and groups. This research adapts this theory to understand how motivation for digital-based learning can affect learners' learning outcomes and how educators and learners can maximize the technology adoption process. The introduction and adoption of new technology by individuals or groups is called diffusion of innovation. Five categories of adopters are involved in this process: innovators, early adopters, early majority, late majority, and laggards. Educators and learners will serve as the first adopters and end users of this innovation in digital education.

Research Methods

This scientific article was prepared using the Systematic Literature Review (SLR) method. The SLR method is used to identify, review, evaluate, and interpret all available research with the topic area of the phenomenon of interest, with specific relevant research questions. In using the SLR method, researchers systematically review and identify journals. To complete this research, researchers collected journal articles from Google Schoolar, SINTA, DOI. The keywords are Diffusion of Innovation, Learning Motivation, Learning Outcomes, Digital-based Learning. The articles collected were only articles published in the time span of 2010 to 2024. Researchers selected 8 articles that were closely related to the keywords used.

Results And Discussion

Results

The literature review that researchers found related to the diffusion of digital-based learning motivation innovations to improve student learning outcomes, can be seen as follows:

Table 1. Simantik literature review

Author and Year	Research Title	Summary
Lestari, P., Fuad, A. J., & Fajar, A. S. M. (2024).	Utilization of ICT by Islamic Religious Education (PAI) Teachers in Student Learning at SMK PGRI 2 Kediri.	Collaborative efforts between innovation diffusion and institutionalization implementation of PAI teachers in utilizing ICT in learner learning can be done in several ways. First, PAI teachers can access wider educational resources using ICT,

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		Second, teachers can increase interaction with students, and Third, provide flexibility in learning. In addition, teachers also need to have a collaborative friendly attitude, be creative, take risks, and conduct comprehensive learning so that the learning process can run effectively. Thus, PAI teachers can be more effective in using ICT to improve the quality of learning and improve student learning outcomes.
Wijaya, D. S., & Romadhan, I. (2024).	Analysis of the Diffusion of Innovation in the Use of Canva Media as Learning Media at SDN PUTAT JAYA II/378	The integration of information and communication technology in education has become an urgent need along with the advancement of the digital era. The use of digital learning media, such as the Canva application, has become very important to support a more interactive, creative, and effective teaching and learning process. At SDN Putat Jaya II/378 Surabaya, the use of Canva has proven to provide many benefits, both for students and teachers.
Kisno, K., & Fatmawati, N. (2023).	Diffusion of 3-D Quiver Application Innovation Based on Augmented Reality Technology at Early Childhood Education Institutions. Kiddo	The diffusion of Q-3D App Coloring innovations that have AR content as an effort to develop students' creativity in this PAUD institution unit provides important information and improves skills in coloring activities and has added value through Augmented Reality (AR) technology integrated in the application.
Hamdi, S. M. (2024).	The Use of Podcasts as Learning Media in Higher Education.	This research explores the benefits and development of podcasts as a supporting element of digital learning in education. Podcasts have the potential to be an innovative learning resource for educators and facilitate the learning process of students, both in the classroom and outside the classroom. In particular, supporting the distance learning process organized by higher education institutions.
Lutfi, A. F. (2024).	Implementation of EDAPP as an LMS to Improve Learning Outcomes in Indonesian Language Subjects at SMK	This study aims to improve student learning outcomes through the use of EdApp as an LMS. The results showed differences in student learning outcomes between conventional methods and those using EdApp learning media, this can be seen from the results of hypothesis testing that the

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	Muhammadiyah 1 Kuningan.	control class average was 66.11 and the experimental class average was 83.33 so that the difference between the two classes was 17.22. The value of t_hitung> t_tabel is 4.366> 2.120, so it can be stated that there is a significant difference in increasing the value of learning outcomes in the experimental class, thus it can be concluded that H_a is accepted and H_0 is rejected.
Lutfin, N., Arsyad, S. N., Nurwidyayanti, N., Swandi, A., & Rahmadhanningsih, S. (2024).	Application of Artificial Intelligence (AI) Based on Edapp and Learning Website to Improve Digital Literacy and Learning Media at UPT SMPN 2 Maros.	This community service program has successfully assisted and optimized the application of Artificial Intelligence (AI) and digital learning media at UPT SMPN 2 Maros. This program not only provides increased technological literacy for teachers, but also introduces innovative approaches in the teaching-learning process. Through a series of training, mentoring, and classroom implementation, some of the main achievements of this program are as follows: 1. Improved Teacher Competencies: Teachers at UPT SMPN 2 Maros showed significant improvement in their understanding and skills regarding the application of AI and digital technology in learning. They are now able to leverage AI to personalize learning, create more interactive materials, and efficiently monitor student progress. 2. Improved Learning Quality through Developed Learning Media: The use of AI-based digital learning media has had a positive impact in increasing student motivation and participation in the classroom. Learning materials tailored to students' needs and learning styles increase their engagement in the learning process. 3. Accessibility and Flexibility of Learning: With digital learning media, students have more flexible access to subject matter. They can learn anytime and anywhere, which helps to increase the effectiveness of learning, especially

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		for students who have limited time or access to school 4. Improved Efficiency of Learning Management: The use of AI in classroom evaluation and management has reduced teachers' administrative burden, allowing them to focus on direct interaction with students and the development of more creative learning materials. In addition to the production of digital learning media both learning websites and PPT materials, overall, this program has succeeded in improving the quality of education at UPT SMPN 2 Maros and providing a foundation for technology-based learning transformation.
Zakirman, Z., Sukmayadi, D., Aprianti, R., Widiasih, W., & Nadiyyah, K. (2023).*:*	MOOCs digital assessment class design to improve teacher professionalism in the digital era.	The purpose of this research is to produce online courses (MOOCs) on the topic of managing online learning outcomes assessment. This type of research is Research and Development (R & D), with the chosen development model is Plomp. The research stages according to the Plomp model include 3 steps, including: Preliminary Research, Prototyping Phase (Self evaluation, one to one, expert review, small group dan field test), Assessment Phase. Topics developed in online course with a focus on managing learning outcomes assessment including: Quizizz, Google Form, Wordwall, EdApp, Quizlet, QuizMaker, Nearpod and Kahoot. Due to research limitations, the pilot test was only conducted on a small scale.
Hayadi, B. H., Yusuf, F. A., Juhriah, J., & Yuningsih, Y. (2024).	IT-based Learning Innovation.	Innovation in education refers to new strategies, ideas or tools that are implemented to achieve educational goals or solve challenges in the education system. These innovations have several characteristics, such as relative advantage, compatibility, complexity, trialability and observability. One form of innovation that is currently developing is IT-based learning innovation. This innovation uses information and communication technology

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	(ICT) to improve the teaching and learning process. The benefits of IT-based learning innovations include increasing student motivation and engagement, improving learning outcomes, developing 21st century skills, and improving learning efficiency. However, there are some challenges that need to be addressed in the implementation of IT-based learning innovations, such as access to technology, digital skills, content quality, and cost. Several studies have shown that IT-based learning innovations can yield positive results. For example, the use of augmented reality can improve students' motivation and imagination, puzzle maker can improve understanding of learning concepts, and the use of WhatsApp platform in online distance learning can improve students' understanding of concepts.

Discussion

The rapid spread of digital technology has had a significant impact on many aspects of human life, including education. Digital-based learning is a necessity that not only eases access to education, but also gives learners the opportunity to learn in a more adaptive and interactive way. However, the adoption and success of technology in education is a matter of.

The innovation diffusion process between teachers and learners shows that teachers and early learners tend to be more open to new technologies, while most learners are more cautious when using digital technologies. This means that educators can lead the adoption of digital technology and integrate it gradually. This means that digital-based learning will be more successful if teachers can take the lead and integrate it gradually. Especially thanks to its personalization, interactivity and gamification features, digital-based learning is proven to increase learners' motivation. Digital learning makes learners more interested and eager to join the lessons.

The adoption of these technologies provides a more engaging and relevant experience, which contributes to an improvement in their learning outcomes. An increase in motivation was noted to be significant in learners who had easy access to digital tools and interactive learning resources. In contrast, learners who were limited to devices and had poor internet connections showed lower motivation, which negatively impacted their learning outcomes.
Educators who are trained in the use of technology and have a good understanding of its benefits tend to be more successful in adopting and integrating technology in learning. The availability of technology devices and adequate internet connection are key factors in driving the adoption of digital learning. Schools with good infrastructure are better able to provide maximum learning experience for learners.

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Conclusions

Based on the exposure of literature, researchers can conclude that the use of technological media is very influential in motivating students and being able to improve student learning outcomes, especially in social studies learning. Moreover, the use of EdApp media has not been widely used in improving student learning outcomes at the education level.

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