Jurnal Profesi Keguruan
Vol. 10 Issue 1 (2025) 25-48
DOI: https://doi.org/10.15294/jpk.v10i1.25434
Available online since June 30, 2025

Jurnal Profesi Keguruan
https://journal.unnes.ac.id/journals/jpk

Digital Transformation in the Classroom: The Impact of Smartphone Use on Economics Learning Among 11th-Grade Students

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Abstract

This study aims to examine 1) the positive impact of smartphone usage on the economics learning process among 11th-grade students at SMAN 2 Gerung for the 2023/2024 academic year and 2) the negative impact of smartphone usage on the economics learning process among 11th-grade students at SMAN 2 Gerung for the 2023/2024 academic year. The researcher employs a qualitative approach and descriptive research type to provide a clear picture of the situation under investigation, thereby obtaining the facts. Primary and secondary data sources complement this approach. Data collection techniques include observation, semi-structured interviews, and documentation. The research findings indicate that using smartphones in learning positively impacts students. First, stu-

dents have broader access to various sources of information, including scientific articles, educational videos, and digital learning platforms. Second, technology makes it easier for students to complete school assignments, as they can quickly find the references they need. Third, technology has also been proven to increase students' engagement and motivation in learning, offering more interactive and engaging learning methods. Fourth, learning becomes more flexible, allowing students to study anytime and anywhere based on their needs and convenience. However, there are also negative impacts that must be considered. Technology can disrupt students' concentration due to distractions from social media and other digital entertainment. In addition, students often struggle to distinguish between accurate and inaccurate information. They also tend to rely heavily on the internet, which can hinder the development of critical thinking and independent learning skills. Another issue is the habit of not taking complete notes, as students assume that all information is available online. Lastly, there are potential physical health concerns, such as eye strain and poor posture, caused by prolonged use of electronic devices.

Keywords
smartphone; economics learning process

I. Introduction

The digital era has brought significant changes in various aspects of life, including education. One of the most noticeable transformations is the widespread use of information and communication technology (ICT) in schools. Among various technological devices, smartphones have become the most widely used tool by students in the teaching and learning process. The use of smartphones among students has increased, especially during the COVID-19

pandemic, when many educational activities shifted to digital platforms (Fayyaz & Akram, 2023). Smartphones are advanced communication tools with internet access, making them available anytime and anywhere. Smartphones have become integral to daily life, particularly academic and non-academic activities. The use of smartphones among high school students, especially in economics lessons, has become a significant concern in the current educational landscape. Smartphone use among senior high school students, particularly in economics subjects, has become a significant concern in education, reflecting a shift in learning patterns in the digital era. Smartphones offer easy access to various sources of information, such as economic articles, educational videos, and learning applications that help students understand economic concepts more contextually and interactively. However, uncontrolled use can lead to challenges such as distraction, overreliance on the internet, and a lack of critical thinking skills. Therefore, the education sector needs to wisely guide the use of smartphones to genuinely support the learning process and enhance students' digital literacy and understanding of economics.

Economics is one of the core subjects taught at the high school level. It is a discipline that studies human behavior in fulfilling their unlimited needs with limited resources. Economics education aims to equip students with conceptual understanding and analytical skills to comprehend economic phenomena in society. In the learning process, students are expected to memorize and apply economic concepts in real life.

Learning is an engineered effort to help students grow and develop according to their intended goals and objectives. Therefore,

all interactions, methods, and learning conditions must be systematically planned to achieve the desired educational outcomes. Learning is a two-way communication process in which the teacher carries out teaching as an educator, while learning is undertaken by students as the primary subjects of the learning process. Learning activities involve several key components, including students, teachers, learning objectives, subject matter, teaching methods, learning media, and evaluating students' learning progress through standardized testing (Sagala, 2006). Furthermore, according to Sanjaya (2008), learning is a process conducted by teachers to assist students in learning by creating a conducive learning environment, facilitating active interaction among students, and employing strategies that align with both students' characteristics and the subject matter. Similarly, Hamalik (2008) emphasizes that learning includes all activities that affect students and facilitate the learning process, such as using media and evaluation to assess learning success. These three perspectives highlight that learning is a complex and structured process involving various supporting elements to achieve educational objectives optimally.

However, the phenomenon occurring in schools during this era of globalization shows that many teachers still lack innovation in the learning process and tend to teach monotonously, resulting in students having low motivation to learn (Sanjaya, 2008). This condition calls for a shift toward more creative and adaptive teaching approaches that align with the demands of the times. One innovation that can be implemented is using smartphones as learning media. Smartphones are considered interactive, enjoyable, and flexible learning tools that can enhance students' motivation and engagement in the learning process (Andika Prajana & Astuti, 2020).

Furthermore, smartphones provide access to a vast and constantly updated range of information sources, allowing students to independently explore topics they are interested in (Yunus, 2019). According to Sugiyanto (2016), integrating technology such as smartphones in education must be applied wisely to support meaningful learning rather than merely serving as entertainment. The use of smartphones proves to be beneficial in the teaching and learning process at this school, as indicated by interviews with students who feel more engaged in learning due to the use of smartphones (Evan, SMAN 2 Gerung). The ease of operating smartphones makes students feel not burdened but instead helped by the presence of smartphones. However, behind the many positive benefits of smartphone use in learning, there are negative impacts, such as students misusing access to illegal websites, playing social media, and gaming during the learning process. These negative impacts affect the learning process in the classroom. Therefore, teachers must control the use of smartphones in economics lessons, which will be an intriguing topic to research.

In light of this, several relevant issues need to be investigated. First, how does the use of smartphones affect students' concentration during economics lessons? Second, how does the smartphone act as an effective tool to enhance students' understanding of economics material?

In the education context, using smartphones can enhance student engagement in the learning process, provide access to a broader range of educational resources, and facilitate collaborative learning (Nasri & Indinabila, 2024.) On the other hand, negative impacts refer to harmful consequences. However, the negative impacts of smartphone use cannot be ignored. Excessive use can lead

to physical and mental health problems, such as sleep disturbances, anxiety, and reduced concentration (Rahmad, 2022). Studies show that teenagers who spend excessive time in front of smartphone screens experience decreased sleep quality and emotional disturbances, affecting their academic performance. Additionally, uncontrolled smartphone use can lead to poor social behavior, where students interact more with their devices than their peers (Tamala et al., 2024).

Smartphones provide advanced features such as email, internet access, and the ability to read e-books or have keyboards (either built-in or connected externally) (Fikriaji, 2022). In this modern era, smartphones have become one of the most commonly owned communication devices. The emergence of smartphones has changed how we communicate and significantly impacted technological advancements and human lifestyles. Initially, smartphones were used for basic communication, such as sending messages or receiving calls.

But as technology has advanced, smartphones' functions have also changed to become more varied and complex. Before the emergence of smartphones, people relied on slower methods of communication, such as letters, to send information from one place to another. The arrival of smartphones has significantly accelerated and simplified the communication process. Nowadays, people can communicate instantly across distances without waiting long to receive or send information. Nevertheless, behind these conveniences, excessive smartphone use can lead to dependency, particularly among teenagers and students. This dependency is characterized by a constant urge to check notifications, anxiety when not

holding a smartphone, and a decreased ability to concentrate on social or academic activities. Some users even find it challenging to engage in face-to-face interactions because they feel more comfortable communicating through screens. This condition not only hampers social and emotional development but can also negatively affect physical health, such as sleep disturbances, eye strain, and poor posture due to prolonged smartphone use. Therefore, parents and teachers need to monitor smartphone usage for the well-being of student development (Rahmad, 2022). Overall, smartphones have significantly impacted how we communicate and access information. While there are some negative impacts, the wise use of smartphones can offer many benefits for individuals in daily life.

Learning is a dynamic process involving interaction between teachers and students to acquire new or existing knowledge, skills, and attitudes. This process involves several interrelated stages, starting with the delivery of information, processing of information by students, organizing knowledge, and evaluating students' understanding and abilities.

Learning is the interaction of students with educators and learning resources in a learning environment (Djamaluddin A. & Wardana, 2019). Learning is an effort by educators to facilitate the process of acquiring knowledge, skills, and attitudes in students. It is a series of activities throughout a person's life where educators help individuals learn effectively. Learning is not limited to formal education settings and can occur in various contexts and times. The concept of learning is similar to teaching, but it emphasizes interaction between educators and students. Learning also influences cognitive, affective, and psychomotor aspects and is designed to support the internal learning process in students.

The learning process is a structured and planned effort to guide students toward achieving specific learning objectives, whether in terms of knowledge, skills, or attitudes. By understanding and optimizing the learning process, educational institutions can enhance the effectiveness and quality of the education they provide (Widiyono & Millati, 2021).

In the study by Zulkifli et al. (2022), "the results showed that the impact of smartphone use on 11th-grade students at MA NW Bagik Payung was more negative than positive. Negative impacts include (1) spending more time playing on smartphones than studying, (2) lack of discipline during the teaching and learning process, (3) dishonesty during exams, (4) being late to school every day, and (5) lack of responsibility for assignments given by teachers. Positive impacts include (1) as a communication medium, (2) as a source of information, (3) as a learning medium, (4) as an entertainment medium, and (5) in terms of religious aspects.

Based on the findings from the studies by Muh. Zulkifli, Wina Amniatul Wahida, and Sendi, we can conclude that smartphone use among students has varying impacts. The first study shows that the negative impacts of smartphone use are more dominant, such as spending more time playing than studying, lack of discipline in the learning process, dishonesty during exams, and low responsibility for assignments. However, some positive impacts exist, such as serving as a communication medium, information source, and entertainment, and supporting religious aspects. The second study also reveals the positive impacts of smartphones in enhancing knowledge and facilitating information searching and communication. However, negative impacts such as

wasting time, declining morals and ethics, reduced social interaction, and religious involvement are also noticeable. To mitigate these negative impacts, teachers must implement strategies involving planning, consultation, motivation, religious activities, and evaluation. Despite the benefits, the negative impacts of smartphone use need to be addressed with a planned and directed approach to prevent harm to student development.

II. Method

The research methodology used in the study *"The Impact of Smartphone Use on the Economics Learning Process of 11th-Grade Students at SMAN 2 Gerung"* employs a qualitative approach with a descriptive research design. A qualitative approach is chosen to obtain in-depth data and to describe phenomena that occur in the field through direct interaction with research subjects, which include students, teachers, and the school principal (Moleong, 2019). Descriptive research aims to systematically, factually, and accurately portray the characteristics of a particular population or field (Sugiyono, 2017). The researcher used various data collection techniques, such as observation, semi-structured interviews, and documentation, to gather comprehensive data. This triangulation of techniques helps ensure data validity and allows a broader understanding of the impact of smartphone use in the economics learning process (Creswell, 2016).

The data sources used in this study consist of primary data obtained directly from respondents, namely the 11th-grade students, economics teachers, and the principal of SMAN 2 Gerung,

as well as secondary data collected through a literature review relevant to the research topic. Observation is carried out with a non-participatory approach, where the researcher directly watches the economics learning process in the classroom without engaging in the activities. Semi-structured interviews are chosen to obtain deeper and more flexible information related to the experiences, perceptions, and views of the research subjects, while documentation is used to collect supporting data in the form of notes or archives related to economics learning.

Data analysis is conducted through four main stages: data collection, data reduction, data presentation, and conclusion drawing. This process allows the researcher to organize and present data systematically and draw valid conclusions regarding the impact of smartphone use on economics learning. Data validity is ensured through triangulation, which considers the sources, data collection techniques, and data collection time to ensure the research findings' accuracy and validity.

With this structured methodology, the study is expected to provide a clear and comprehensive understanding of the impact of smartphone use on economics learning at SMAN 2 Gerung and contribute to further understanding of the integration of technology in education.

III. Result and Discussion

Based on the above explanation and findings, the advancement of technology has provided convenience for students and teachers in utilizing smartphones for the learning process. This result aligns with the theory that educational technology, including

the use of smartphones, can enhance the quality of learning and facilitate broader access to information for students (Iskandar et al., n.d.). Concerning the research findings and previous theories, facilitating the use of smartphones in the learning process can be an effective strategy to prevent student boredom and create a more interactive classroom environment. Using smartphones as a learning medium not only encourages students to be more active in class participation but also provides quick access to various relevant sources of information. Research by Muhammadun & Dalle (n.d.) shows that the purposeful use of smartphones can increase students' interest and motivation in learning, especially when integrated into activities involving educational applications or project-based learning.

Furthermore, a study conducted by Abidin et al. (2023) revealed that using digital technologies such as smartphones can create a more enjoyable learning experience and support better learning outcomes. Therefore, teachers need to facilitate and guide the use of smartphones in the classroom as a tool that supports learning success rather than a source of distraction. Below are the detailed discussions of the positive impacts of the economics learning process in class XI at SMAN 2 Gerung:

Access to a Broader Range of Information

By using smartphones, students can easily access various sources of information available on the internet. The use of smartphones helps them get a better grip on economics learning materials, especially regarding concepts that may not have been explained in detail in textbooks. In this context, smartphones serve as a tool that broadens students' horizons regarding the material

taught in class. Previous research indicates that using smartphones allows students to search for information directly on the internet, which can help them complete assignments more efficiently and increase their engagement in learning (Abidin et al., 2023). The use of smartphones in education, particularly at SMAN 2 Gerung, provides many significant benefits for students in the teaching and learning process. First, access to a broader range of information becomes one of the main advantages. This benefit is reinforced by showing that integrating smartphones into learning can improve individual and group learning outcomes and promote interactive group discussions among students (Iqbal & Bhatti, 2020).

Ease in Completing Assignments

Most students feel assisted in completing tasks assigned by teachers because they can easily search for references and additional materials online. Research shows that strong smartphone habits are positively correlated with students' involvement in using smartphones for educational purposes (Mahat et al., 2023).

This becomes a convenience for students to complete tasks more quickly and on time. Moreover, access to a broader range of information helps them be more creative in completing the economics assignments. Ease in completing assignments is also an important aspect of smartphone use. Students feel helped in completing the tasks assigned by teachers because they can quickly find references and additional materials online. Previous research also emphasizes that smartphones make it easier for teenagers to learn and find information on social media, such as Google, YouTube, and other social media platforms that young people can use for learning (Huslaini, 2022).

Increased Engagement and Motivation to Learn

The use of smartphones in the learning process leads students who have a higher curiosity to become more active in learning when using smartphones. Research emphasizes that students with higher self-efficacy (confidence) in using smartphones tend to view the positive impact of smartphone use on learning activities and expect improvements in their academic performance. This finding is related to previous research that states that teachers play a role in improving the quality of education, particularly in motivating students to achieve learning goals (Fatin Syahirah et al., 2023). To enhance engagement and motivation to learn, the role of teachers in overseeing the learning process in class is needed. In the digital era, teachers must demonstrate competence in guiding students and be creative in motivating them to learn.

Students become more enthusiastic about seeking additional information about the material being discussed, which can improve the quality of class discussions. In this case, using smartphones allows students to learn more independently and actively develop their knowledge. Furthermore, smartphone use also increases students' engagement and motivation to learn. The theory that technology can enhance student interaction and participation aligns with the idea that managing its use in class remains challenging for educators (Damayanti & Nuzuli, 2023).

Supporting More Flexible Learning

Smartphones give students access to more than just textbooks. This is consistent with findings that show that smartphones

expand the learning environment and allow students to review material or find additional information that can deepen their understanding of the material being studied (Al-Mashhadani & Al-Rawe, 2018). This flexibility makes it easier for students to review material or find additional information to enhance their understanding of the subject matter. In addition, smartphones support more flexible learning. With smartphones, students are not confined to textbook material but can access various other learning resources. Therefore, using smartphones in the economics learning process for class XI students shows significant potential in enhancing the teaching and learning process. With adequate internet access and excellent telecommunication facilities, students can use smartphones to access broader and relevant information about the learning material. This approach is consistent with research showing that using smartphones in education can enhance student involvement and facilitate more flexible learning (Andreas & Beukes, 2021).

Negative Impacts of Smartphone Use on Economics Learning in Class XI:

Distraction of Student Concentration

One of the most frequently observed negative impacts is the distraction of student concentration. Students tend to lose focus when using smartphones because they are tempted to check notifications or use other applications such as social media, listen to music, or even take selfies. Although there is an increase in discussions among students, the increase is often accompanied by negative behaviors such as listening to music or taking selfies, which shows that smartphone use can divert attention from the lesson (Mahaputra & Yamin, 2021). This distraction can distract students from the lesson

and the tasks they need to complete. Here, close supervision from teachers is necessary to achieve the learning goals related to the material being taught. If the learning process is not adequately supervised, such circumstances could lead to detrimental distractions (Carlsson & Willermark, 2022). The ability to focus on a learning task is present in every person, but its level differs. This capacity is influenced by the individual's situation and concentration, which means the ability to direct full attention to the learning situation (Fahman Ilhanda, n.d.). A lack of concentration during the learning process can hinder students' ability to absorb the material, leading to a decrease in their knowledge acquisition. Teachers need to employ various strategies to strengthen focus during learning and consider study time and breaks.

Difficulty in Distinguishing Accurate and Inaccurate Information

Using smartphones to search for information also risks the quality of information obtained by students. Not all information available on the internet is reliable. This necessitates teachers to take a more proactive role in providing clarifications or explanations about the information students access from the internet to prevent them from being misled by incorrect or irrelevant information. The internet, as the primary source of information, offers easy and fast access to vast amounts of data. However, not all information is trustworthy. Previous research emphasizes that many students lack the skills required to evaluate the validity of sources of information. They often get caught up in fake or misleading information, leading to misunderstandings about the material they should be learning (Tufekci, 2019). Studies show that students who frequently use

smartphones are more susceptible to the influence of incorrect information and have a lower ability to evaluate the reliability of information sources (Knezevic, 2018). Such a deficit can become a problem in the learning process because inaccurate information can affect students' understanding and analysis of the material. This impact hinders individual learning and affects the collective knowledge quality among students.

Tendency to Rely on the Internet

Using smartphones in learning can make students rely on answers from the internet rather than trying to understand the material independently. This can affect students' critical thinking skills and ability to develop a more profound understanding of the subject matter. This finding is related to the theory that individuals who tend to feel uncomfortable or anxious in social situations may find it challenging to limit smartphone use, leading to concerns and feelings of loss if they cannot use the device for extended periods (Munusamy & Ghazali, 2022). Most students admit they prefer searching for answers on Google or accessing the internet rather than referring to books or other academic sources (Teens, 2020). Relying on the internet can also reduce information processing skills. With quick access to information, students process it superficially. Students often feel there is no need to read or analyze the material in depth; instead, they absorb information superficially to meet immediate needs. This behavior has implications for the lack of depth in students' understanding of the concepts being taught. This tendency is dangerous because it can reduce critical and analytical skills, which are crucial in learning.

Lack of Note-taking

Excessive smartphone use in the classroom can cause students to become lazy at taking notes (poor note-taking). They prefer to rely on smartphones to search for answers or information without attempting to write or note down the material being taught. This scenario reflects a broader phenomenon where dependence on technology reduces traditional learning skills, such as note-taking and critical thinking (Mahat et al., 2023). In relation to the theory, this reliance on smartphones can lead to students not reading enough to retain previous material during the learning process, which hinders their ability to develop writing skills. Students' note-taking habits are also disrupted by smartphone use. Previous research shows that students who use digital devices for note-taking are often more disorganized and less meticulous than those who take notes manually (Demirtas, 2004). When students use smartphones for note-taking, they may focus too much on speed and convenience but neglect the processing of information that occurs while writing. As a result, the quality of the notes produced becomes low, and students miss the opportunity to reflect on and understand the material effectively. Moreover, smartphone use causes students to "copy-paste" information rather than process it.

Physical Health Impacts

Excessive smartphone use can also negatively impact students' physical health. Some issues that may arise include eye strain, poor posture due to improper smartphone ergonomics, and other health problems like neck or back pain after prolonged smartphone use (Vijayatheepan & Vijayatheepan, n.d.). Although it provides ease

of accessing information, excessive smartphone use has negative impacts, such as eye health problems. The exposure to light emitted by the smartphone screen can disrupt eye health, causing computer vision syndrome with symptoms that include dry eyes, tired eyes, blurry vision, and headaches (Ghazala Shanawaz, 2024). Continuous smartphone use over a long period is not suitable for health. This impact worsens if the smartphone is used too close to the eyes for long periods. Another significant issue is posture problems associated with smartphone use. The tendency to slouch or bend forward while using a smartphone can affect spinal health and lead to back and neck pain. Prolonged use of the device while viewing the smartphone screen causes muscle and joint tension, increasing the risk of posture abnormalities (Yasshwi, 2024).

Based on findings from interviews with Mr. Mahyudin Arifin, the headmaster's representative (school authorities), the school does not have a written rule regarding smartphone use. However, they still allow students to use smartphones as long as they comply with the applicable regulations. In this case, the school hopes students can use smartphones wisely to support their learning process. Nevertheless, teachers must supervise and ensure smartphone use does not interfere with learning.

IV. Conclusion

Using a descriptive qualitative approach, this study aimed to analyze the impact of smartphone use on the economics learning process among 11th-grade students at SMAN 2 Gerung during the 2023/2024 academic year. Based on the observations, interviews,

and documentation, using smartphones has supportive and disruptive effects on the learning process.

One advantage of smartphones is that they give students instant access to affordable educational resources via the internet, including instructional videos and content. This access has been shown to increase student engagement in class, simplify the completion of assignments, and support more flexible learning in terms of time and location. Many students expressed greater interest and motivation when lessons were supported by digital tools such as smartphones.

However, on the negative side, smartphones also present several challenges in the learning process. Some students experience a decline in concentration due to distractions from social media or mobile games during lessons. In addition, students tend to become passive by relying solely on instant information from the internet without taking proper notes or deeply understanding the subject matter. This dependency on the internet can weaken critical thinking skills and independent learning. From a physical perspective, some students reported eye strain and poor posture due to prolonged smartphone use both inside and outside the classroom.

Therefore, using smartphones in economics learning at SMAN 2 Gerung presents a complex impact. Teachers must provide clear guidance and supervision to ensure smartphones are optimized as practical learning tools without negatively affecting student focus, health, or comprehension.

To improve the effectiveness of smartphone use in learning, it is recommended that schools, particularly teachers, provide clear guidelines on the limitations of smartphone use in the classroom.

Teachers should also closely monitor smartphone usage, guide students to use it wisely, and ensure that the technology supports learning rather than distracting them. Additionally, students need to be trained in critical thinking skills and the ability to sift through accurate information from trustworthy sources so they do not fall into the trap of misleading or irrelevant information. Lastly, the school may consider establishing written rules regarding smartphone use that are more structured to ensure that this technology is used optimally to enhance the quality of learning without causing adverse impacts on students.

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