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TEACHERS' AND STUDENTS' VIEWS ON ECONOMIC LEARNING USING DIGITAL COMIC MEDIA FOR STUDENTS

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ABSTRAK

The rapid development of information and communication technology has increased the need for innovative learning approaches in education. This study aims to analyze teachers' and students' perspectives on Economics learning using digital comic media in the topic of International Trade for eleventh-grade students at SMAN 4 Banjarmasin, as well as to identify the supporting and inhibiting factors in its implementation. This research employed a descriptive qualitative approach with the principal, Economics teachers, and eleventh-grade students as research subjects. Data were collected through structured interviews, observation, and documentation. Data analysis was conducted through data reduction, data display, and conclusion drawing or verification. The results show that both teachers and students perceive digital comic media as an effective and relevant learning medium for bridging abstract International Trade concepts through contextual visual and narrative presentations, thereby enhancing students' understanding, motivation, and participation. Supporting factors include school support, teacher readiness, and the characteristics of digital-native students, while inhibiting factors consist of limited internet access, technical constraints, and teachers' workload in developing digital learning media.

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INTRODUCTION

The rapid development of information and communication technology requires educators to continue to update their knowledge and skills in the delivery of the learning process. Based on data from internetlivestats, it is estimated that in July 2016 around 46.1% of the world's population already has internet access, or 3,424,971,237 out of 7,432,663,275 people can access the internet from various devices on various types of connections. This number can be said to be very large when compared to 2000 which was only 6.8% of the total world population of 6,126,622,121. Indonesia itself contributes 1.6% to the world's internet user population or 20.4% of the total population in Indonesia which amounted to 260,581,100 million people at the beginning of 2016 and is the twelfth country with the largest internet users in the world. ([Internet Live Stats, 2016](#))

Although the number of internet users in Indonesia is relatively large, the internet penetration rate in 2016 is still relatively low compared to other countries, which is around 20.4% of the total population of Indonesia ([Internet Live Stats, 2016](#)). However, this condition is not necessarily a crucial problem when viewed from the perspective of long-term growth trends. Based on Internet Live Stats data (2016), the average growth of internet penetration in Indonesia reaches around 1.22% per year, while the population growth rate is in the range of 1.32% per year ([World Bank, 2016](#)). Using a linear projection approach, the entire Indonesian population is theoretically expected to have internet access within the next 66 years, which is around 2082. Furthermore, along with the rapid development of information and communication technology, increasing information access openness, and government policy support in the development of national digital infrastructure, the equitable distribution of internet access has the potential to be achieved in a shorter time, even in the next two decades ([ITU, 2016](#)).

The existence of various types of cellphones or smartphones at relatively affordable prices makes it easier for people to access the internet. Based on the 2014 Indonesian Telecommunications Statistics Report published by the Central Statistics Agency (BPS), internet access in Indonesia is most often done through mobile devices, which is 73.73%, followed by internet cafes at 25.52%, home at 18.85%, other categories at 15.30%, offices at 14.22%, and schools at 12.45% ([BPS, 2014](#)). The report also shows that 57.85% or around 25,234,799 internet users in 2014 were residents aged 5-24 years, who are classified as school age (BPS, 2014). In addition, the level of mobile phone ownership in Indonesia in 2014 has reached 51.49% of the total population, a figure that is much higher than computer ownership which is only 17.30% ([BPS, 2014](#)). This data confirms

that mobile devices are the main means for people, especially the school-age generation, to access the internet Indonesia is the fourth country with the most smartphone use in the world, after China, India and the United States. Based on. China became the country with the most smartphone users in the world in 2022. This can be seen from the number of smartphone users in China which reached 910.14 million people. India followed in second place with the number of smartphone users as many as 647.53 million people. Its position is followed by the United States with 249.29 million users smartphone [Annur \(2022\)](#).

With the fact that easy access to technology for the community and the large number of school-age residents who can access the internet actually provide advantages in its application to the world of education. In addition, the Regulation of the Minister of Education and Culture Number 22 of 2016 where the standard learning process is directed at skills and the use of information and communication technology in learning further strengthens the reasons for the development and utilization of the use of technology in the learning process.

The use of technology as a learning medium has actually been introduced for a long time. However, as stated by [Clark & Mayer \(2016\)](#), The use of technology without the right pedagogic strategy will not be effective in improving student learning outcomes. The incompatibility between the reality of students who are *already digital-native* and the conventional way of delivering material is one of the causes of lack of enthusiasm for learning.

According to [Prensky \(2018\)](#), students of the digital generation prefer visual, interactive, and fast learning. This reinforces the importance of integrating visual media in learning. Visual media has proven to be more effective in conveying information because it is able to replace verbal words, concretize abstract ones, and facilitate students' grasp ([Munadi, 2013](#)).

As a result of this, students become less enthusiastic in following the learning process because what is presented in front of them is not in harmony with what is experienced and happening around the students. They prefer moving graphics with a wide variety of colors and direct interaction in them compared to the black text that fills most of the page, and honestly, adults like it more. The difference in circumstances between reality and the learning environment should be the center of attention for educators to be able to align them.

The integration of learning in the classroom is often hampered by communication factors where very few educators can talk directly to the goals they want to achieve even

though they have been through the medium of writing or powerpoint. The obstacle to ineffective communication is because educators tend to emphasize verbal communication and put aside visual messages/media even though there are various media available around them that can support the delivery of the learning process.

Visual media is one of the important parts of the learning process and images are the easiest visual media to get. It is said to be important because it can replace verbal words, concretize the abstract, and overcome human observation. The power of images lies in the fact that most people are basically visual thinkers despite only emphasizing on the power of the sense of sight. Interestingly, based on an article published in mit.edu, neuroscientists from MIT found that the human brain can process the entire image that the eye sees as fast as 13 milliseconds. Visual media, especially images, can capture the ideas or information contained in them more clearly than words express at a relatively inexpensive cost. However, because everyone finds it easy to obtain images, we think of them as "ordinary" or "too ordinary" and forget the benefits. One of the visual media that has great potential is comics. Comics have a dialogical structure of stories, images, and verbal language, which is very much in line with the learning characteristics of digital-native students.

Wi-fi facilities actually exist at SMAN 4 Banjarmasin and most students also have smartphones or other digital media. However, its use is still rare in the learning process, the smartphones brought by students are also only used for games, social media and other things that are not related to the learning process. To develop learning media that is interesting for students by combining visual and digital elements through comic media. Comics were chosen because they have a simple nature in their presentation, and have elements of story sequence that contain a large message but are presented concisely and easily digestible and equipped with dialogical verbal language. The combination of verbal and visual language accelerates the reader's understanding of the content of the message in question, because it helps the reader to stay focused and stay on track.

Although the development of information and communication technology has brought easy access to the internet and digital devices, its use in the world of education, especially in the learning process in secondary school, is still relatively low. This can be seen from the lack of use of technology facilities such as smartphones and school Wi-Fi networks for learning purposes, even though most students already have adequate digital devices.

At SMAN 4 Banjarmasin, this phenomenon can be seen from the fact that even though digital facilities and infrastructure are available, students' digital devices are still

more widely used for entertainment activities such as playing games and accessing social media, not to support the learning process. In addition, the learning methods applied by some educators are still conventional and do not involve visual or interactive media that are relevant to the character of digital-native students. At SMAN 4 Banjarmasin, this phenomenon can be seen from the fact that even though digital facilities and infrastructure are available, students' digital devices are still more widely used for entertainment activities such as playing games and accessing social media, not to support the learning process. In addition, the learning methods applied by some educators are still conventional and do not involve visual or interactive media that are relevant to the character of digital-native students.

Therefore, the development of digital comics as a learning medium is considered the most suitable because in addition to the advantages of using comics as mentioned above, the packaging of comics as a digital learning medium feels very close to students who are familiar and attached to technological developments. In addition, the form of digital comics is lightweight because it only needs to process image files that are not too large so that they are easier to access than other digital media even in an unstable connection.

International trade materials were chosen because they are complex and require a visual approach to facilitate conceptual understanding, in contrast to the research of Fadillah and Sari (2021) which uses digital comics in social studies materials in general. In addition, this research was carried out at SMAN 4 Banjarmasin which already has ICT infrastructure support such as Wi-Fi and smartphone devices owned by most students, but its use in the learning process is still low. This is one of the main reforms, which is to answer the gap between the availability of technology and its optimal use in learning.

Furthermore, media packaging in the form of interactive digital comics that are lightweight and easily accessible adapts to the characteristics of the digital-native generation. This is in line with [Prensky's \(2018\)](#) opinion that effective learning for Generation Z must prioritize visual, fast, and contextual media. In addition, by referring to the Multimedia Learning theory from [Mayer \(2021\)](#), the use of media that combines visual and verbal elements simultaneously has been proven to increase the effectiveness of information processing in students' working memory. Thus, this research makes a new contribution to the development of comic-based digital learning media that is not only interesting, but also tested for effectiveness in the context of secondary education in the digital era.

Research on the use of digital comic media in learning has been carried out extensively, but shows variations in focus, material, and findings. Literature study found

that digital comics are effective in increasing students' learning independence and critical thinking skills, but the study is general and does not focus on economic subjects or specific materials such as international trade. This study emphasizes more on mapping research trends than directly testing the effectiveness of media on one specific competency. Proved that digital comics are able to increase the interest and learning outcomes of elementary school students in science subjects. The main difference with the research to be carried out lies in the context of the subject and level, where the research has not touched on abstract and complex economic concepts such as international trade.

Furthermore, the research developed a Canva-based digital comic on the State Budget material in economics and showed excellent media feasibility results. However, the research focuses more on the development and validation aspects of media, rather than on in-depth testing of the impact of digital learning in improving understanding of global economic concepts. Research comic-based economics teaching materials are effective in improving student learning outcomes, but the economics materials used are still general and do not specifically examine international trade learning units as the main focus. The research has indeed touched the realm of the international economy through the material of international means of payment, but the scope of the material is still limited to certain subtopics and has not integrated the entire concept of international trade comprehensively.

Based on these differences, novelty lies in the focus of the material that specifically examines international trade as a unit of economic learning. This research not only develops digital comic media, but also integrates contextual and illustrative storylines that represent the real phenomenon of international trade. In addition, this study examines the effectiveness of digital comic media in improving students' understanding of concepts and critical thinking skills towards global economic issues, not just media interest or feasibility. Thus, this research offers up-to-date both in terms of materials, digital learning approaches, and measured learning outcomes, so that it is able to fill the research gap in the study of economic learning based on digital comic media. Based on this description, the researcher is interested in conducting research entitled Teachers' and Students' Views on Economics Learning Using Digital Comic Media for Students of SMAN 4 Banjarmasin.

RESEARCH METHODS

This study uses a qualitative approach to understand in depth the implementation of Economics learning based on digital comic media in International Trade materials in grade XI of SMAN 4 Banjarmasin. This approach was chosen to obtain a comprehensive picture of the learning process, student responses, as well as supporting and inhibiting factors. The research subjects included the principal, Economics teacher, and class XI students totaling 40 people. Informants are determined purposively based on their involvement in learning. This research is also supported by quantitative data through a pretest-posttest design to see changes in student learning outcomes before and after the use of digital comic media. Data collection techniques include semi-structured interviews, observations, and documentation. Qualitative data was analyzed through the stages of reduction, presentation, and conclusion drawn, while quantitative data was analyzed descriptively to see an improvement in learning outcomes.

RESULTS AND DISCUSSION

1. Teachers' Views on Economics Learning Using Digital Comic Media at SMAN 4 Banjarmasin

The results of the study show that teachers view the use of digital comic media in Economics learning as a learning innovation that is relevant to the characteristics of grade XI students at SMAN 4 Banjarmasin. Digital comic media is considered to be able to help deliver abstract International Trade material to be more concrete through a combination of visuals, narratives, and contextual illustrations. The teacher stated that the presentation of the material in the form of visual stories made it easier for students to understand the concepts of export, import, trade balance, and international cooperation.

These findings are in line with research conducted by [Mayer \(2021\)](#) which states that the use of a combination of visual and verbal elements in learning is able to improve students' understanding of concepts and information retention. Another study also showed that digital comic media is effective in improving students' understanding of conceptual economic materials because their presentation is simpler and more contextual. In addition, teachers assessed that the use of digital comic media was able to increase student involvement in the learning process. Based on the results of the interview, students became more active in asking questions, discussing, and providing responses during learning. Teachers also observed an increase in students' motivation to learn and attention when the material was presented through visual-interactive media compared to conventional lecture methods.

These findings support the results of [Kearsley and Shneiderman 's \(2020\)](#) research through Engagement Theory which explains that students' active involvement in learning will improve the quality of the learning experience. Found that the use of digital comic media can increase student participation in class discussions and create a more interactive learning atmosphere. In the aspect of the curriculum, the teacher emphasized that the development of digital comic media still refers to the 2013 revised Curriculum for grade XI. The material prepared has been adjusted to the basic competencies and learning indicators in the International Trade material. Teachers collaborate in the preparation of digital comic content so that the material remains in accordance with applicable learning standards.

These results are in line with [Mishra and Koehler's \(2020\)](#) research on the TPACK framework which emphasizes the importance of integration between technology, pedagogy, and content in the development of digital learning. Digital media in learning is greatly influenced by the suitability of the material with the curriculum and learning competencies. The results of the study also show that teachers view visualization and narrative as important components in learning using digital comic media. Illustrations, dialogues between characters, and storylines are considered to help students build a mental picture of complex economic concepts.

These findings support the research of [Prensky \(2018\)](#) who stated that the digital-native generation is more responsive to visual and interactive learning than conventional text-based learning. Found that visual narratives in digital comics help students understand abstract concepts through more concrete and interesting presentations.

In addition to functioning as a medium for delivering material, digital comics are also seen as supporting changes in the role of teachers as learning facilitators. Teachers are no longer the only source of information, but rather play a role in directing discussions, providing reinforcement of concepts, and helping students connect the content of comics with economic phenomena in daily life. These findings are in line with [Fullan 's \(2020\)](#) research which states that learning innovation will be successful if teachers are able to transform into active learning facilitators. Digital media is able to encourage changes in learning approaches to be more student-centered.

Overall, the results of the study show that teachers view digital comic media as an effective, interesting, and appropriate learning medium for 21st century learning. These

findings reinforce the results of previous research that showed that visual and digital-based learning media are able to improve concept understanding, learning motivation, and student involvement in the learning process.

2. Students' Views on Economics Learning Using Digital Comic Media at SMAN 4 Banjarmasin

The results of the study showed that students responded positively to the use of digital comic media in Economics learning at SMAN 4 Banjarmasin. Students assessed that digital comic media makes learning more interesting, fun, and easy to understand, especially in International Trade materials that were previously considered difficult and abstract. These findings are in line with [Mayer 's \(2021\)](#) research which explains that multimedia learning is more effective in helping students understand concepts than text-based learning alone. Research shows that digital comic media is able to increase students' understanding of economics subjects because it makes it easier to visualize abstract concepts.

Students stated that the use of visual illustrations, story characters, and narrative plots in digital comics helped them understand economic concepts more concretely. Materials such as exports, imports, and international trade activities become easier to understand because they are presented through visual examples that are close to everyday life. These results support the research who found that visual story-based media is able to improve students' ability to understand economic material and improve memory of learning materials. In addition to increasing material understanding, the use of digital comic media also increases students' motivation and interest in learning. Based on the interview results, students feel more enthusiastic about participating in learning because the media used is not monotonous and provides a different learning experience.

These findings are in line with the digital-native theory from [Prensky \(2018\)](#) which states that the current generation is more interested in technology-based and visual learning. Research also shows that digital comic media can increase students' motivation to learn and curiosity in learning economics. From the aspect of participation, students admitted that they were more active in learning activities when using digital comic media. Students are more daring to ask, discuss, and express opinions related to the content of the material presented in the comics. These findings support the research of [Kearsley and Shneiderman \(2020\)](#) which affirms that student active engagement is an important indicator of meaningful learning.

However, this study also found several obstacles such as limited internet access and large media file size. These findings are in line with research by Ertmer and Ottenbreit-Leftwich (2021) which states that infrastructure barriers are still the main challenge in the implementation of technology-based learning in schools. Overall, the results of the study show that students view digital comic media as an effective learning medium in increasing understanding, motivation, and learning engagement. These findings reinforce previous research that confirms that visual-interactive media is capable of creating a more engaging and meaningful learning experience for students.

3. Factors Driving and Inhibiting the Implementation of Economic Learning Using Digital Comic Media at SMAN 4 Banjarmasin

The results of the study show that the implementation of Economics learning using digital comic media at SMAN 4 Banjarmasin is influenced by driving and inhibiting factors. The main driving factor comes from the school's support for the integration of technology in learning. The school has provided supporting facilities such as internet networks, digital learning tools, and training for teachers in the use of technology-based learning media.

The results of the study show that the implementation of Economics learning using digital comic media at SMAN 4 Banjarmasin is influenced by driving and inhibiting factors. The main driving factor comes from the school's support for the integration of technology in learning. The school has provided supporting facilities such as internet networks, digital learning tools, and training for teachers in the use of technology-based learning media.

These findings support [Mishra and Koehler's \(2020\)](#) research on the importance of TPACK competencies in digital learning. also found that teachers' readiness in the use of technology greatly determines the success of digital media in learning. From the student side, the characteristics of the digital-native generation are an important supporting factor. Students show a high interest in visual and interactive learning so that digital comic media is able to increase learning engagement and motivation.

This result is in line with [Prensky's \(2018\)](#) research which explains that the digital-native generation is more receptive to technology-based learning. Research by [Trilling and Fadel \(2021\)](#) also emphasizes that 21st century learning needs to integrate students' creativity, collaboration, and digital literacy. However, this study found obstacles in the form of limited internet access, network instability, and differences in students' digital device ownership. Some

students also have difficulty accessing learning media from home. These findings are in line with the research of [Ertmer and Ottenbreit-Leftwich \(2021\)](#) which stated that technical obstacles and infrastructure limitations are still the main obstacles to the implementation of educational technology in schools.

In addition, teachers also face obstacles in the development of digital comic media because they require time, creativity, and technical skills that are quite high. These findings support the research of Zhao and Frank (2020) who stated that limited time, workload, and technical support are the main factors inhibiting the adoption of digital learning innovations by teachers. Overall, the results of the study show that the successful implementation of Economics learning using digital comic media is influenced by school support, teacher readiness, student characteristics, and the availability of technological infrastructure. These findings reinforce the results of previous research that digital learning innovations require continuous system support so that they can be optimally applied in the learning process.

CONCLUSION

Economics learning using digital comic media at SMAN 4 Banjarmasin has proven to be effective in increasing student understanding, motivation, and involvement, as well as encouraging a shift towards student-centered learning. This media is able to present the material in a more contextual and interesting way, thus creating a meaningful learning experience. However, its success was influenced by infrastructure support, teacher readiness, and student characteristics, and still faced technical obstacles. Therefore, it is necessary to strengthen facilities, improve teacher competence, and continue implementation strategies so that digital comic-based learning can run optimally.

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