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Technology Integrated on Media Literacy in Economic Studies on Higher Education

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Abstract

This study aims to analyze the technology integrated into media literacy in higher education. This research uses a qualitative approach. The type of case study in this research is explanatory. Data collection was carried through interviews to analyze integrated technology to help students understand media literacy and student interest in using android-based applications. Then, to identify the competency level of student media literacy and product feasibility using questionnaires data collection. Researchers collaborated with 36 students of economic studies year 2017. This study shows that students can use technology in media literacy activities in development economics, but there was a problem in understanding the context and content. After introducing the Android Economic Development Application (EDA), students can improve their media literacy understanding. The EDA application is feasible to use with a percentage of 79.96% and easy-to-use. Students' media literacy competency level also increased from 28% to 69% at the medium level. The EDA application makes it easy for students to get information about the meaning, characteristics, competence, and media literacy level. This study shows that this application effectively improves students' critical thinking skills in the learning process. However, media literacy activists also need to encourage media literacy activities to passively refrain from spreading fake news and actively spreading media literacy awareness. The application of EDA is expected to guide students in facing the digital economy.

Keywords: *technology, media literacy, economic studies*
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Introduction

Currently, the world economy has undergone a process of transformation (Pérez-Escoda et al., 2017). Therefore, the students in higher education can find the change in the development of the digital economy. According to Foster (2020), the digital economy is an economic praxis based on acculturation between digital technology and the financial system. Economic studies have a role in directing students to improve their understanding of digital technology through media literacy. McAnulty (2020) explains that media literacy can help find the information needed quickly, easily, and relevant. When the economy is integrated with a technological system, the economic process takes place faster and has a broad reach (Graham, Hjorth, & Lehdonvirta, 2017). It is challenging

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for students of economic studies in higher education to face technology in the economic area (Ansong & Boateng, 2019). In the digital economy, the layers of consumers in carrying out consumption activities are students. Students can consume irrationally and tend to have consumptive behavior for students (Gazzola, et al., 2020). Therefore, economics in higher education provides an overview of allocating resources optimally and provides insight into socio-economic development issues (Novo-Corti, et al., 2018). Likewise, students need to understand media literacy in sorting information from a social, educational, and economic perspective (Akinbadewa & Sofowora, 2020; Kapel & Schmidt, 2018).

According to Martzoukou et al. (2020), higher education students should have digital competencies for learning and everyday life online participation. Therefore, technological developments must be followed by media literacy skills to change various forms of economic activity fundamentally by students. This change is marked by the transition of economic activity patterns from conventional to systemised patterns utilising technology in networks (Aslan, 2021; Bergeson & Rosheim, 2018; Dittmar & Eilks, 2019; Johnson & Westbrooks, 2021; Leung & Cossu, 2019). With social media exposure, technological developments, and mass media, media literacy becomes strategic learning to protect students in managing information. The study of Al-Zou'bi (2020) revealed that the impact of media literacy is that students can improve critical thinking skills. Datu et al. (2021) offer preliminary evidence to enhance students' literacy media skills through a kindness curriculum.

Meanwhile, Gordon et al. (2020) explained that to reduce social media's negative impact, they using an RCT design through social media programs. On the other hand, Chen et al. (2018) suggested to set the norm for new media literacy can be done by large-scale research conducted in Singaporean schools. Based on several previous studies, there is still no development of a particular application made for media literacy with integrated technology. In addition, Britain, the United States, Australia, and Canada promulgate media literacy into education by the formal school curriculum (Olagbaju & Popoola, 2020; Weninger, Hu, & Choo, 2017). Students become individuals who understand, have extensive knowledge, can analyse, assess, and can have a critical opinion on the information or media messages that we get (Athique, 2020; Marques & Xavier, 2021; Olmos Perez, 2019;).

Morales et al. (2020) study improve the learning process, and lecturers preparing innovative learning are very good for the learning process. According to Lestari, Maksum, and Kustandi

(2019), creative knowledge can be useful for higher education students using an Android-based application as a learning tool. Thus, in this study, technology integrated into media literacy can help students increase their knowledge. Tagg and Seargeant (2019) show that literacy will encourage students to think further about the information contained in social media and mass media. For this reason, media literacy is useful in understanding sources and technology for students. Higher education students need to be active in the learning process to need an appropriate learning model (Loh & Ang, 2020; Susanto, Hobri, & Nugrahaningsih, 2021).

Learning media literacy helps students produce and select information to change higher education students more active in the learning process (Turunen, 2019; Xie, Gai, & Zhou, 2019). Media literacy leads to social media and android technology, which can be more specified in digital literacy, a derivative of broader media literacy (Marfil-Carmona & Chacón, 2017). Therefore, in higher education, media literacy training is needed to exercise a critical attitude in responding to any information and interactions (Guo & Huang, 2020). Students need to provide education regarding the rules and ways they use social media in everyday life (Polizzi, 2020). The goal is to find out whether the content of the news has balanced information or not.

Concerning economic education, media literacy material is important to enter the learning process. Media literacy can become knowledge for students in facing the digital economy. In addition, an important result of higher education is that students can think critically. According to Gao (2020), improving students' critical thinking can be done through online learning on media literacy. Likewise, Elder-Vass (2018) suggested that the best practice to change student behavior in media literacy by technology integration. Therefore, in this study, our research focused on understanding economic education students' media literacy after using android-based applications. On the other hand, this research also identifies media literacy in economic studies and media literacy in higher education.

Literature Review

The Existence of Media Literacy in Economic Studies

In economic studies, students learn about digital economy development is marked by trade transactions using the internet as a communication medium. It can also collaborate and cooperate between companies and individuals through communication media (Elder-Vass, 2018). Therefore, it has an impact on student digital skills. Evans (2015) explained that economic literacy needs to

instill and nurture from an early age because economic literacy does not arise automatically except for strongly influenced by others. Students can also recognize and use economic concepts and economic thinking to improve and gain prosperity (Happ, et al., 2016). Economic literacy is a life skill that students must possess to help them make the right economic decisions. Therefore, economic literacy must be accompanied by media literacy (Oleabhiele & Ede, 2020).

Media is not only just existed but created with a specific purpose. Mass media and students relationship is built by media messages, while they have their characteristics (Neuner, Soroka, & Wlezien, 2019). The mass media provides information and entertainment and invites students to change behaviour (Joseph, 2014). The media messages look very attractive for students in understanding media literacy through various distinctive and unique media content. Framing messages through text, images, and sound is a media activity to influence student thoughts and feelings (Tsuriel, et al., 2019).

Lack of media literacy can pose a danger to society if students are not well equipped to evaluate and analyse the endless stream of media messages they receive (White, 2020). In economic studies, media literacy aims to help students have sufficient knowledge and understanding of media content to control media influence in their lives (Chan-Olmsted & Su, 2017). Based on Allen et al. (2015), media literacy is useful for protecting vulnerable and weak students from the impact of media penetration of new media culture. Therefore, there is the existence of media literacy in economic studies. Sohn (2019) suggested that media literacy using technology aims to produce students who are well informed and can make judgments on media content based on their knowledge and understanding of the media in question (Müller, 2020). Besides that, media literacy shows the method and level of a student using mass media in his daily life provides forms of communication media content with various kinds of knowledge that have been structured (Livingstone, 2015). In the meaning of communication, media literacy shapes cultural content in cross-cultural communication (Gallardo-Echenique, et al., 2015).

Ashley (2015) also explains that media literacy provides a basic foundation in many cases, and then it is beneficial in the learning process in the classroom (Vraga & Tully, 2016). On the other side, Vraga and Tully (2017) explained that technological advancement promoted mass media development into social media and affected students' media literacy skills.

Social media is one of the internet services most used by internet users today (McCaughey et al., 2014). The ease of interacting and disseminating information is the main attraction of social media.

Students who use social media need to create an information and knowledge-based society through media literacy (Vanwynsberghe, et al., 2015). Vlieghe, Vandermeersche, and Soetaert (2014) explained that social media literacy is needed to understand literacy. This effort is carried out by integrating information technology as a form of social media literacy education. Based on Kurilovas and Kubilinskiene (2020) research results, students are highly motivated by technology and show great interest in media literacy. Therefore, researchers aim to develop mobile-based applications to improve student media literacy in higher education.

Media Literacy in Higher Education

Jindal (2020) shows that there is a positive influence of new media in education on students. In higher education, media literacy is combined with communicative competence, which is seen as the ability to question media coverage in a critical way (Kiviluoto, 2015). Meanwhile, media use is carried out to communicate their position (Weedon & Knight, 2015). Student participation in opinion-making can be done via social media, which is used as a decision-making process for current policies (Grgurina, et al., 2011; Chu & Lee, 2014). On the other hand, media literacy also encourages students to be more reflective about the ethical choices they make as communicators(Reyna, et al., 2018; White, 2020). Based on Zhu et al. (2020), literacy media education contributes to tertiary institutions' students' personality development. The media provide space to experience and test various life processes. Oomen-Early and Early (2015) explained that in the current millennial era using new media as learning media must be based on students' media literacy competencies. Higher education contributes to literacy media education by using content and skills and practically supporting their personal information, mostly in knowledge and awareness on social media (Romero Walker, 2020). Global educators need to encourage critical media literacy by analysing coded messages in resources (Harshman, 2017).

The current generation must develop media literacy because they are accustomed to using smartphones(Gallardo-Echenique et al., 2015). Media literacy is a dynamically developing concept (Shaimardanova, et al., 2020). Therefore, the interpretation is strongly influenced by cultural and technological changes. Media literacy is a new way to transfer knowledge by combining traditional concepts with technology (Kalimullina et al. 2021; Pfaff-Rüdiger & Riesmeyer, 2016). In line with Alshrooqi and Rawadieh (2017), media literacy can access, understand, and create communication between students in various contexts. New digital cultural norms are increasingly

emerging and question the relevance of old approaches to media literacy pedagogy and practice(Mihailidis, 2018). One of the methods developed by Mihailidis (2015) is determined by the access that includes users of digital media devices and carrying out their tasks creatively, especially using social networking sites. The portability of devices connected to the internet allows use anytime and anywhere, which offers tremendous potential in reaching students with quality learning opportunities (Dezuanni, 2018). the context of intensive use of devices connected to Android-based applications plays an important role in student development and learning in literacy opportunities (Schreurs & Vandenbosch, 2020). Android is built to be completely open so that an application can call one of a cellphone's core functions such as making calls, sending text messages, using the camera, and others (Zhao, et al., 2017). Android uses a virtual machine specifically designed to optimise its memory and hardware resources according to students' characteristics (Saudagar & Mohammad, 2018). Android is open source, can be freely extended to include new, more advanced technologies as they emerge(Papadakis, et al., 2017).

For this reason, in this study, we use Android as a media literacy learning media tool for economic education students. This platform will continue to evolve to build innovative mobile applications. Researchers develop android applications using the Android Software Development Kit (SDK) (Abdalla, et al., 2012), providing the tools and Application Programming Interface (API) needed to start developing applications on the Android platform. Especially, increasing the competency level of media literacy and critical thinking of economic education students face the digital economy. Although there are many studies on media literacy in education, very few studies have integrated technology-related media literacy interventions in universities. Thus, this study seeks to assist academics in developing innovative learning in media literacy learning.

Method

Research Design

This study uses a qualitative approach using a case study research type (Creswell, 2017). The type of case study in this research is explanatory, developed by Yin (2011). This research leads more to the use of case studies, historical and experimental strategies. The focus of this research is the ability of students to access and understand information. Then communicate this information into social media. The study aims to analyse media literacy in economic studies students through integrated technology based on Android. It is done to collect detailed information related to

students' media literacy competencies using android application-based programs. Because basically, this research leads to the question, (1) how integrated technology helps students understand media literacy; (2) how is the level of media literacy competence in economic education students? and (3) why students of economic education are more interested in using applications during the media literacy learning process?. The qualitative approach is applied to the design of case studies in-depth analyzed both in terms of the case itself, risk factors, influencing, events related to the case, and actions and reactions of cases to a particular treatment or exposure—the location of this research at the State University of Jakarta, Jakarta, Indonesia. We have carried out this study from January to December 2020.

Participants

In this study, The integrated technology analyses on media literacy in economic studies on higher education collaborated with 36 students of economic studies at the State University of Jakarta. There are no fixed rules about the minimum number of participants (Twining, Heller, Nussbaum, & Tsai, 2017). It is because the participants were chosen not randomly but based on considerations according to the research needs. Therefore, this study used the purposive sampling technique (Aldhafeeri & Khan, 2016). The number of participants in this study was not large because the participant used was through purposive sampling technique with the criteria as follows: (1) students of class 2017 were studying development economics at the State University of Jakarta, (2) had a smartphone, and (3) actively used social media. To maintain the code of ethics of participants, the names of students using code S-1 to S-36 with the following data:

Table 1

The Characteristic of Participants Gender

No	Gender	Frequency	Percentage
1	Man	13	36%
2	Women	23	64%
	Total	36	100%

Source: (Research Document, 2020)

Table 1 shows that 64% of the female participant is much more than the male. The total number of women students is more than the man in economic education.

Table 2

The Characteristic of Participants Age

No	Age	Frequency	Percentage
1	18	7	20%
2	19	21	58%
3	20	8	22%
	Total	36	100%

Source: (Research Document, 2020)

Table 2 shows that the participants' ages were 18, 19, and 20 years—the largest number of participants aged 21 years at 58%.

Table 3

The Participants Knowledge of IT

No	Categories	Frequency	Percentage
1	Advanced	-	-
2	Medium	10	28%
3	Basic	26	72%
	Total	36	100%

Source: (Research Document, 2020)

Table 3 shows that the students' knowledge of IT has a set of abilities that allows basic use of the media. The student knows about the basic function and uses it for specific ends to determine the tool. The characteristics in table 3 are based on the level of media literacy of table 9. Table 3 shows that students have a percentage of 72% on the basic level greater than the medium category.

Table 4

The Participants Actively Used Social Media

No	Actively Used Social Media	Frequency	Percentage
1	Instagram	15	42%
2	Facebook	5	14%
3	Twitter	2	5%
4	YouTube	14	39%
	Total	36	100%

Source: (Research Document, 2020)

Referring to table 4 shows that the social media often used by students is Instagram. It is in line with the students' IT abilities that they have abilities that allow the media basic use.

Research Instruments

The following are the research instruments used by researchers to identify integrated technology-related media literacy interventions in universities:

Table 5
Interview Guidelines

No.	Aspect	Indicator
1.	Access (evaluate and use technology; use electronic program guides; access, store, retrieve content and services; search for learning materials effectively and safely)	Use Navigate Manage
2.	Understanding (understand the context and motivation of the media; understand the information following the learning material; have a quality viewpoint; evaluate information about the media and services offered)	Read Deconstruct Evaluate
3.	Create (use technology to search for learning materials and communicate information and opinions; post on social media; use social media responsibly and ethically)	Produce Distribute Publish

Source: (Pfaff-Rüdiger & Riesmeyer, 2016)

Table 6
Questionnaire Instruments

No.	Aspect	Indicator	Number
1	Layout Design	Text	1,2
		Layout Colour	3,4
		Figure	5,6
		Animation	7,8
		Sounds	9,10
2	Navigation	Navigation effectivity	11,12
		Navigation Form	13,14
3	Material Usability	Learn to be independent	15,16
		Ease of learning	17,18

Source:(Kustandi, Wargahadibrata, Fadhillah, & Suprayekti, 2020)

This dimensional questionnaire was conducted to analyze students' literacy levels after using the EDA application as a learning resource. It is important to do to develop students' abilities in understanding media literacy. The distribution of this questionnaire was carried out through the literacy level dimensions from Vauutur (2019) in table 7, as follows:

Table 7
Literacy Level Dimensions

No.	Dimensi	Indicator	Number
1	Technical Skills	Media used	1,2
		Reading print or online newspapers	3

		Using the internet	4,5
		Sending e-mail with attached files	6,7
		Using the internet to find the information	8,9
		Using peer-to-peer file sharing	10
		Creating a web page for the task	11
2	Critical Understanding	Trust of information that is presented by media sources	12,13
		Awareness of information that is presented by media sources	14,15
		Awareness of the influence of advertising	16
		Knowledge of media regulations	17,18
		Ability to identify options for gathering information	19,20
		Comparision of information accros sources	21
3	Communicative Abilities	Engagement with public debate	22
		Social networking online	23
		Collaborating online on a joint project	24

Source: (Vautour, 2019)

Data Collection

This research type of case study is explanatorily by Yin (2011). So this research leads to the use of case studies, historical and experimental strategies. Researchers used a structured question model that participants had to answer themselves to determine the level of media literacy before and after using the developed application (Gray & Downer, 2020). Therefore, data collection through interviews was carried out through the interview guidelines in table 5 (Creswell, 2017). A recording device is used to record conversations during interviews. Interviews were conducted before participants used Android-based applications in the learning process of economic development. During the interviews, the participants were motivated and encouraged to speak freely about their media literacy understanding. Interviews were conducted for 30 to 45 minutes. After that, the researchers provided information on using the EDA application in the development economics learning process. Students used the EDA application to look for information in the learning process. After collecting data through interviews, the researcher distributed a questionnaire as a student assessment of the use of the EDA application. Collecting data through this questionnaire is an experimental strategy conducted by researchers to see the product's feasibility. This activity is a series of case study elaboration with explanatory type. Therefore table 6 shows the questionnaire instrument that was given to participants after using the EDA application. This activity is a series of case study elaboration with explanatory type. Fortier et al. (2020) explain that it can be done to identify and explore the media literacy research topic's aspects through the questionnaire method. Therefore, the researcher collected data through the

questionnaire method to give students the freedom to assess the EDA application's feasibility based on the questionnaire instrument in table 6. The researcher used a Likert scale with a range of 1-5. Starting from unfeasible to highly feasible. After the students filled out a questionnaire related to the EDA application's feasibility, the researcher analyzed the dimensions of participants' literacy levels

Trustworthiness of data

To find the trustworthiness of the data, the researcher applied triangulation. Triangulation in credibility testing is defined as checking data from various sources in various ways and times (Twining et al., 2017). Thus, there is a triangulation of sources, triangulation of data collection techniques, and time. The source triangulation is used to check data about its validity, comparing the interviews with document contents by utilizing various information data for consideration (Yin, 2011). One of the triangulation used was conducting interviews with participants to check the validity of the data. Then give questions about student interest in economic education in using applications during the media literacy learning process.

Data Analysis

This study uses data analysis on the results of interviews using data reduction. The reduction was carried out from the time the data was collected, starting with summarizing the students' media literacy skills, exploring themes, and writing memos to set aside irrelevant data, then data verified. The qualitative data presentation is presented in the narrative text to be designed to combine information arranged in a coherent and easily understood form. The researcher analyzes the results of the EDA feasibility questionnaire using the following qualifications:

scores (∑) with the total ideal score (N) $P = \frac{\sum R}{N} \times 100\%$

The validation criteria used in the validity of media research are presented in table 8.

Table 8

The Percentage of Media Feasibility

No	Achievement Level	Qualification
1	81-100%	Highly Feasible
2	61-80%	Feasible
3	41-60%	Moderately Feasible
4	21-40%	Less Feasible
5	<20%	Unfeasible

Based on the results of the questionnaire in table 8, student points are calculated and added up. The sum is adjusted to the score and level in table 9, as follows:

Table 9

Level Media Literacy

Level	Definition	Score
Basic	• The student has a set of abilities that allows basic use of the media. There is limited use of media. • The student knows about the basic function and uses it for specific ends to determine the tool.	70-116
Medium	• Students can use media and know its function. Also, students know how to get and assess the information they need. • Students can carry out evaluations in information seeking strategies	117-232
Advanced	• Students are very active in using media. Besides that, they have in-depth knowledge of techniques and languages • Students can analyse conditions that affect their communicative relationships	233-350

Source: (Festl, 2020).

Findings

The Level of Media Literacy Competence in Economic Education Students

Individual competence is a person's ability to use and utilise media(Aguaded-Gómez, Tirado-Morueta, & Hernando-Gómez, 2015). Social competence consists of communicative skills, namely communication skills and participation through the media(Swarts, 2020). This study analyses the extent to which students' understanding of media literacy in the learning process takes place. Thus, the results of the interview show communication skills and student participation. In

addition, communicative skills also include the ability to create and produce media content (Alagözlü, Koban Koç, Ergül, & Bağatur, 2019). It was done to provide a variety of instruments and to carry different indicators. Due to the conditions of the Covid-19 pandemic, interviews were conducted using health protocols, which is to divide the interview into two stages with five students at each stage. Researchers conducted interviews related to student access as in data (1):

(1) During the learning process, I used Google to search for material (S-3, 2020). Data obtained via the internet will be immediately accessed and stored as a learning resource. Even though I had difficulty finding learning materials because of the lack of keywords to write (S-5, 2020). The variety of information available in digital technology provides its difficulties when understanding the content. Like when looking for an understanding of development economics, Google searches from the web, and online news has the same information (S-6, 2020). When I search for learning materials, I usually use google scholar. It can help me understand information related to economic development (S-8,2020). I can also access information related to learning materials related to economic development through e-learning provided by the university. However, e-learning often has problems when opened via smartphone (S-10, 2020). Usually, I use smartphone technology to looking for learning materials related to economic development. Because it is easy to use and effective (S-9,2020). When storing data related to learning materials through social media, I usually do a screenshot via a mobile phone. Because it can be read back. But if the data is in pdf form, I save it in the mobile phone memory (S-4, 2020). Even though the learning materials are easy to find via the internet, the content is difficult to understand because of various information and data sources. So it requires filtering to sort out the correct and incorrect information (S-7, 2020)

Data (1) shows that in media literacy activities in development economics, students can use technology but still experience problems understanding the context and content. As seen in data (2), students should complete the technology integrated into media literacy in economic studies. Students emphasise that technology plays a key role.

(2) Becoming an economic study student has a big challenge related to technological developments and economic activity changes. Using technology during the learning process helps students evaluate information. (S-1,2020). The lack of guidance about analysis, evaluation, and finding essential points from the data obtained makes students difficult in the learning process (S-6, 2020). Economy development material is closely related to the digital economy. The lack of understanding regarding media literacy makes it difficult for me to understand the material (S-7, 2020). Reading information via the internet is very easy to understand; it's just that it is difficult to evaluate information, especially through social media (S-10, 2020). Lack of understanding of media literacy makes me less consistent in the statement's quality of viewpoints (S-4, 2020). The lack of media literacy leads to easily accessible information, making me quickly take a stand without conducting in-depth analysis and evaluation (S-9, 2020).

The understanding aspect of the interview results shows:

(3) Through media that the internet can access, I understand a little about the information's context, but I do not fully understand it. It is because it is difficult to analyse information without guidance (S-7, 2020). Usually, I read the information directly from the internet without doing an evaluation. Also, getting information from social media is limited to reading (S-8, 2020). When looking for information, I did not immediately post or disseminate it but did the analysis first. (S-9, 2020). If this information is of interest to me, I will share it through social media without analysis (S-10, 2020). I rarely post information related to learning materials through social media. I usually use social media to post quotes about life (S-5, 2020).

Data (3) suggest that students searched for information, but not all of them conducted evaluations. Students also do not post directly. On the other hand, some students disseminate information without conducting assessments. Based on these three data in general, according to Pfaff-Rüdiger & Riesmeyer (2016), show that students can use technology, understand the context of information, and post the information they get. It is just that there are still obstacles in evaluating the information obtained.

The Application of Literacy Media Feasibility Using Android Technology

How can integrated technology help students understand media literacy? Based on the findings to help students in economic studies understand media literacy, we introduce the EDA (Economic Development Application) application. Based on the results of interviews data (1), (2), and (3), the purpose of media literacy is so that students can understand and know media content, media effects, and the media industry (Carver, Wiese, & Breivik, 2014). Therefore, ways to improve media literacy understanding are using technology. Developing media literacy skills also makes students better understand which information needs are appropriate (Rhinesmith & Stanton, 2018). Based on data (2), researchers made mobile learning products to instill media literacy competencies in students. The process of making this Android-based media uses three steps, namely creating a design using CorelDRAW X8. Then change it using the iSpring software and make Android-based applications using the Software Development Kit (SDK). Figure 1 shows a picture of an application called EDA (Economic Development Application).

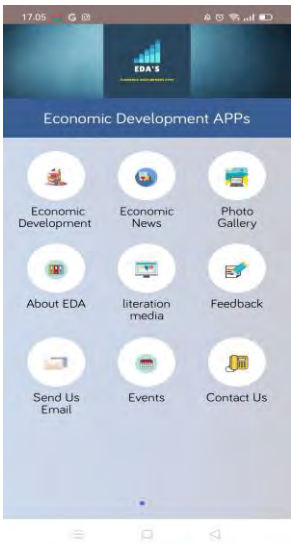

Figure 1. EDA Menu
Source: (Research Document, 2020)

The application of EDA has been tested by material experts and media experts using due diligence instruments. The trial results show that 81% state that EDA is suitable for students as a media literacy tool in development economics courses. Thus, researchers introduced EDA as a learning tool that could improve students' media literacy. In the development economics learning process, students are directed to open the EDA application. In this application, students find the EDA menu, namely Economic Development, which provides information related to the notion of economic development and economics. Next up is the Economic News. Students can conduct analyses related to economic development materials through the latest news. So that students are directed to use media and know its function. Also, students know how to get and assess the information they need—especially information related to learning economic development. To improve students' media literacy, researchers added information about the meaning, characteristics, competence, and media literacy level. In addition, to help students understand media literacy and make them active, this application is also equipped with Events. The menu helps students find part-time jobs and informs news containing hoaxes by contacting our menu.

The development of the EDA application is in line with Park and Burford (2013) research that new digital devices can increase media literacy in table 11. To see the student's response to the EDA application, the researcher conducted a data analysis based on the results of a validated product feasibility questionnaire following table 8. Students responded to the questionnaire designed by the researcher using a 5-point scale. The results of the EDA application due diligence are as follows:

Table 10

The Results of Product Feasibility

No	Aspect	Percentage	Category
1	Layout Design	79,10%	Feasible
2	Navigation	78,90%	Feasible
3	Material Usability	81,90%	Highly Feasible
	Total	79,96%	Feasible

Source: (Research Document, 2020)

Table 10 shows that the application of EDA is considered feasible to increase media literacy. In the material aspect, usability received the highest percentage of 81.90% in the highest feasible category. The triangulation is used to check data about its validity, comparing the interviews' results using various information data sources for consideration. In this case, the writer compares the data from the feasibility of the interview. Also, researchers ask students how their experience was learning media literacy through the EDA application?

> It is very interesting to learn through the EDA application. The application made me understand more about media literacy. (S-1, 2020). EDA application can also analyse the latest news related to economic development. (S-3, 2020). The application is easy-to-use in the learning process and more enjoyable. The application also provides students with the opportunity to explore. (S-5, 2020).
>
> EDA not the only application of development economic learning materials but also guides how to access, evaluate, and communicate the information obtained. The sources are obtained through news menus, galleries, and also media literacy. EDA application helps students in economic studies to understanding economic development, especially in the field of the digital economy (S-7, 2020)

The results of the comparisons conducted by researchers were not significant. Instead, students gave a positive response to the use of the EDA application as a learning medium. Besides that, they can understand deeply about media literacy. The interview results show that technology integration using cell phones supports learning, which can be used as a learning resource (Andrews, Dyson, & Wishart, 2015). It is shown by the response of the S-7 EDA application helps students in economic studies understand economic development, especially in the digital economy. So those students are directed to how to get and assess the information they need. Then, students are invited to be active in using media. Therefore, information literacy is critical in improving student learning success (Whitworth, Mcindoe, & Whitworth, 2011). Why are students of economic education more interested in using applications during the media literacy learning process? Based on table 10, the EDA application is easy to use. Besides that, the design used in

the EDA application also makes students interested. The application also provides students with the opportunity to explore more information. To verify the research findings, the researcher realizes that we must use an ethical perspective in looking for meaning. Therefore, researchers verified economic development lecturers.

> The EDA application can help students and lecture to understand media literacy. So they can analyse and evaluate the information. Besides that, the design of the EDA application is also very interesting. (Lecture, 2020).

The lecturer's statement shows that the EDA application can help the student learning process. It provides understanding to students related to media literacy. To see the effectiveness of integrated technology on student literacy in economic education, the following are the results of the questionnaire:

Table 11
The Result of Media Literacy Competency Level

Scores Interval	Categories	Before Using the Application		Using the Application	
		Frequency	%	Frequency	%
233 – 350	Advanced	0	0%	5	14%
117 – 232	Medium	10	28%	25	69%
70 – 116	Basic	26	72%	6	17%
Total		36	100%	36	100%

Source: (Research Document, 2020)

Table 11 shows an increase in media literacy competence in students of economic studies study programs. It is shown that economic studies students have a literacy dimension at the medium level, with 69%. Overall, Students can use media and know its function. Also, students learn how to get and assess the information they need. Students can carry out evaluations in information-seeking strategies. The increase in media literacy competence was seen in the advanced category by 14% after using the EDA application. It is shown that five students are very active in using media. Students can analyse conditions that affect their communicative relationships. It is in line with the results of a study from Havelka (2013), which explains that media literacy via mobile supports students' learning process. Because with integrated technology, students can develop dimension-level literacy, such as technical skills, critical understanding, and communicative abilities(Vautour, 2019).

Discussion

Through the lens, the research findings reflect integrated technology that can make it easier for students to improve media literacy. Media literacy is needed as a tool to protect oneself from media exposure. The study results answered research questions about how to understand media literacy through integrated technology in higher education. In the technological era, the use of smartphones is increasing. Therefore, the learning process for students needs to be improved with integrated technology. The research of Gallardo-Echenique et al. (2015) explained that digital competence and digital literacy could be identified only by the diversity of theories and literature. However, this research shows that students must also actively use the media and be directed through tools such as mobile-based applications. Thus, they can carry out information analysis and can carry out evaluations in information-seeking strategies. This research collaborates with students included in generation Z. This generation was influenced by technology and social media. One way to improve understanding of media literacy with online media is applications that are easily accessible via smartphones.

Research by Chu and Lee (2013) carried out media education through the Media Organization Media Literacy (MOML) use. So that media literacy education is offered through social processes or direct interaction through an organizational institution. It is just that not all students can participate in these activities, and there is commercialism. Whereas in this study, the media used were easy to find and free. Students only need an internet connection to access the EDA application. The existence of EDA as an integrated technology in media literacy for students in economic subjects is considered feasible. Of the three aspects of using the EDA application, the material usability aspect received the highest percentage, namely 81.90%. According to the students' responses that the EDA application is easy to use. Therefore, this study shows that cellular learning is considered the usefulness of material as a tool to increase media literacy.

Meanwhile, Ashley (2015) study shows no clear method for selecting learning content in media literacy education. Media literacy is only the focus of the original research article, and the segment is not that broad. Meanwhile, the EDA application can help students improve self-guided inquiry. The media literacy menu provided is general, not only focusing on the political and economic context. Besides that, this research also shows that media literacy can improve through mobile-based applications in addition to media textbooks from Alshorooqi and Rawadieh. Thus, literacy skills do not appear automatically, but a process is needed.

Researchers use this process to invite students to have attitudes in using technology. Because technological advances encourage the improvement of education quality, especially in educational institutions (Budiharso & Tarman, 2020), this study integrated technology development can encourage student motivation to use media for the learning process. Thus, Students can analyze conditions that affect their communicative relationships in the class. These study results are in line with Lee (2016), who shows that students can be more active in exploring learning by using technology. The study of Lee (2016) has not made precise what technology was used because laptops and Ipads cannot be adequately maximized if there is no clear media literacy education guide. At the same time, this research describes the improvement of students' literacy competencies through media devices. The new media tools described in the study increase students' independence and adaptability in a better direction. Therefore, Android-based technology affects the learning process.

On the other hand, this study develops android applications and provides materials to students to instill media literacy. Students have real skills in reading and writing contexts obtained by Android-based applications. Before students used this application, there were no students who got the advanced category. However, after understanding media literacy through integrated technology based on Android, the percentage increased to 14%. Of the 36 students, 5 of them can analyze conditions that affect their communicative relationships. Thus, information literacy importance raises a new awareness that has driven many information professionals and organizations supporting them to compete in providing the most appropriate definition of information literacy(Pérez-Escoda et al., 2017). This shows that online practice helps the development of student media literacy. Thus, the EDA application information disclosure to cultivate economic studies in media literacy can be sharpened more than using textbooks. Although Reyna, Hanham, and Meier (2018) consider that to teach media literacy, there are conceptual, functional, and audio-visual domains. On the other hand, this research also includes all three and can train students' critical behavior in analyzing information.

The 21st-century learning framework that prioritizes innovative learning makes this research a learning medium for students and becomes a tool in developing media literacy. The movement of media literacy to education is important because millennial generation students are in the era of technology and information. Therefore, researchers use the EDA application as a learning medium tailored to the current educational conditions. In the EDA application, researchers provide students

with several internet ethics points as part of their responsibility to protect themselves from the media's bad influence. Economic development learning materials understand digital development and hone students' media literacy competencies to recognize and use economic concepts and economic thinking to improve and gain prosperity. Apart from sorting information, the EDA application is also a means for students to make the right economic decisions. Therefore, economic literacy must be accompanied by media literacy. Learning media aids such as the application of EDA integrated into media literacy can encourage critical media literacy through an evaluation that aims to obtain information about the success rate and implementation of literacy activities in universities. Through media literacy, students can absorb knowledge and explore the world that is beneficial for their lives. Thus, students can improve their critical thinking skills in the learning process.

To integrate technology into media literacy education in learning economic development, you can use Android-based smartphone applications. Although there have been several media literacy education models, the novelty in this study is Android-based applications. Besides that, the EDA application's presence motivates students to continue innovating and analyzing information, so they can't get caught up in hoax news. Students use technology to copy and paste material and are also able to evaluate and be responsible

Conclusion

Advances in technology encourage educational institutions to improve the quality of learning. The need for media literacy in students is important as a solution to increase the level of literacy competence. Students can not only access information but also understand and communicate it well. This study concluded that students' understanding of media literacy in learning economics has different levels ranging from basic, medium to advanced. Integrated technology in media literacy education makes it easy for students to analyze information. Even before using Android-based applications, students could use technology but still experienced problems in context and content. Thus, the current research study analyzes the implications of integrated Android-based technology to instill media literacy in economic studies students at the State University of Jakarta. Identification is carried out using an instrument of media literacy level, the media's feasibility, and the percentage is determined and calculated appropriately.

Based on the presentation in the results and discussion section, there was an increase in student media literacy in learning economics through Android-based applications. Media literacy is one

of the skills that students must-have in the current era of information technology. Some students notice it and try to learn this skill independently by reading a lot. However, media literacy activists also need to encourage media literacy activities to passively refrain from spreading fake news and actively spreading media literacy awareness. Research that combines media and digital literacy with other variables is still scarce. Therefore, the researcher suggests that further research may involve other variables to enrich the study of media literacy and integrated technology. The method used in conducting media research and digital literacy is relatively uniform, namely descriptive qualitative. This choice impacts the results that do not explain in depth the phenomenon of media literacy among university students in Indonesia. With the minimum variety of methods used in media literacy research, the researcher suggests that further research can use mixed methods research to enrich the results and represent the field's reality. Researchers also suggest that further research should be carried out with many samples and more diverse sample characteristics.

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