



Digital Comic Media on Smartphones to Improve Communication Skills

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Abstract: Communication skills in English are essential in global relations. The media get relevant and needed information. In practice, improving communication skills in English requires learning media as a tool. This study aims to develop digital comic media and their influence on improving communication skills. This research used a method with the gradual development of ADDIE: analysis, design, development, implementation, and evaluation. After being validated by media experts and material experts, the development results show that digital comic meets the criteria as media. In addition, the results of testing the application of digital comic media in learning English found that the communication skills were better by the increase in the ability to guess, arrange arguments, formulate definitions, and generalize. Applying digital comic media to improve communication skills can be a reference in learning English.

Keywords: digital comics, smartphone, communication skills

Recommended citation: Ghofur, A. (2022). Digital Comic Media on Smartphones to Improve Communication Skills. *Journal of Innovation in Educational and Cultural Research*, 3(3), 432-444.

INTRODUCTION

Communication skills in English require a consistent and continuous learning experience. In practice, learning in the classroom can be done with various learning media. Learning media is a means to create a more effective learning situation (Cacciamani et al., 2018; Torres, 2019). Media is also a messenger from communicators to communicants with a specific purpose (Birenbaum & Nasser-Abu, 2020; Ciurea & Filip, 2019; Listianingsih et al., 2021). The existence of learning media can arouse students' enthusiasm for learning and foster motivation and interest in learning for students so that the classroom atmosphere becomes active. The scope of language encompasses numerous areas of language skills, such as listening, speaking, reading, and writing. The comic is an interactive medium that contains stories, making it easier for people who read to understand the storyline (Wardani, 2019; Stasiulis, 2018). Comics learning media can be print and digital, making it easier to adapt to the learning methods used during the COVID-19 pandemic. The use of digital media can improve learning outcomes (Yang et al., 2021; Young & Nichols, 2017). Digital comic media is a form of digital literacy that is currently the most important thing for students to participate in online learning.

Digital literacy is a solution to the problems arising from the COVID-19 pandemic, where all forms of activities that we have been doing face to face must be done online through digital media. Improving communication skills in English during the COVID-19 pandemic is a common problem. Learning is no longer carried out in classrooms but in digital classrooms, which is a new problem and must be addressed during the COVID-19 pandemic. Digital literacy is very important for students as a reference and learning media to be immediately applied in education (Al-Shlowiy et al., 2021; Chaaban et al., 2021; Nurohmah et al., 2020). During the COVID-19 pandemic, digital literacy programs are critical. One form of digital literacy that can improve communication skills in English is digital comics as a learning medium during the COVID-19 pandemic. Digital literacy will encourage creative and critical thinking (Ahmad, 2022; Groot et al., 2021).

Creating a learning environment closer to the actual environment can be done using digital comic media so that students can be actively involved in collaborating (Nurdiana, 2021; Suryanto et al., 2021). Providing direct experience using media can strengthen students' memory, and learning will be more meaningful (Carpenter et al., 2020; Watermeyer et al., 2021). Using media when learning English can help achieve the desired learning objectives. One aspect of productive language skills is communication skills (Ehrich et al., 2020; Foster & Yaoyuneyong, 2016; Kao et al., 2008). Communication skills express one's thoughts and feelings in language sounds. Speaking skills are the skills to pronounce articulation sounds or words to express thoughts, ideas, and feelings (Jung et al., 2021; Prior, 2018; Setiawan et al., 2010). Effective communication skills are essential; speaking activities must be free, not bound, flexible, not standard, the eye is on the listener, and the language used must be per good language teachings (Lange, 2019; Negrete, 2013). Learning media is also a tool that provides information to achieve learning objectives (Cacciamani et al., 2018; Sari & Setiawan, 2018). Learning objectives describe the knowledge, abilities, skills, and attitudes that students must possess due to learning outcomes expressed in observable and measurable

behavior (Degeng, 2008a; Suryanto et al., 2021). Digital comic media is a series of pictures framed in such a way and easily accessible anywhere, including smartphones, to be presented as a process of events. Digital comics can be stored on smartphones as digital literacy and a reference that is easy to use and carry everywhere (Ahmad, 2022; Nurohmah et al., 2020). Digital literacy refers to a person's ability to use digital devices to search, choose, and sort information and think critically, creatively, cooperate, and communicate effectively (Ahmad, 2022; Fitriarti, 2019). Digital media used for digital literacy in universities is essential in developing the learning process.

The teaching and learning process in the current pandemic era is very dependent on technology. Therefore, educators must pay attention to the right and fast techniques used in delivering lecture material. One of the techniques used to deliver learning materials is to develop creative and fun learning media (Degeng, 2008a; Setyosari & Sihkabuden, 2005). According to the learning material, educators must pay attention to learning objectives to develop learning media. Goals are considered important and a priority because the media is one of the supports in a teaching and learning activity (Demirbilek & Talan, 2018; Lange, 2019). It indicates that the media is not the only medium emphasized in accomplishing learning objectives; promoting student-centered learning is also a top priority in education (Adams et al., 2021; Degeng, 2008b; Dönmez & Akbulut, 2021). The learning process that focuses on students is part of improving the quality of education, especially in improving the quality of learning for students. Educators can improve the quality of education by building a learning system that allows students to have more interesting, interactive, and varied learning abilities (Arends, 2012; Degeng, 2013; Suryanto et al., 2021).

Improving the communication skills in English requires media that contains exercises to read various stories so that students can practice and improve their skills. Several media can improve communication skills: audio-visual media (learning videos), CAI media, digital comics media, interactive media, and various other types of media (Craig & Amernic, 2006; Lange, 2019). From the various media mentioned, if studied more deeply based on the initial study on students in learning English, students need media that contains many stories in an attractive visual form accompanied by interactive audio and can be used on smartphones (Buchner et al., 2021; Wammes et al., 2019). Educators must develop media that approach students' needs, called digital comics.

The development of digital comic media is expected to help students improve their communication skills and independent learning abilities. Another importance of developing digital comic media is that it can also help educators improve learning achievement and complete lecture materials without a time limit. Comics are media consisting of fictional and non-fiction ideas conveyed through visual images to explain the course of a story (Cacciamani et al., 2018; Saputra & Pasha, 2021). Educators must constantly interact with students to promote learning achievement, but students must study independently with media created by educators to complete learning material. The learning interaction in question is a learning process that has activities in which there appears to be an interaction between educators and students as well as reciprocal communication that takes place in an educational atmosphere in order to achieve learning points (Bellini & Akullian, 2007; Ehrich et al., 2020; Gwiazdźński et al., 2020). In order for interaction in the learning process to occur in two directions, educators in teaching and learning activities also need teaching aids in the form of learning media (Camacho-Morles et al., 2019; Chaaban et al., 2021; Julia et al., 2021). Meanwhile, to support independent learning, students use digital comics.

The developed digital comic media comes from a collaboration between interactive media (two-way media) and digital comic media (engaging visual media in digital format). The development of digital comic media and the development of technology used by students must be operated via smartphones (Buchner et al., 2021; Wammes et al., 2019). Smartphones are the hardware that almost all students in Indonesia have because the price is affordable for all people. Therefore, the developed digital comic media will have a learning system that can be done anywhere and anytime. Digital comic media must be used on various types of smartphones owned by each student so that they can study anywhere and anytime. The learning process carried out anywhere is a type of learning car learning. The digital comic media developed will have several short stories with pictures and characters.

The term "comic" refers to a type of medium used to transmit information in a popular and easy-to-understand format (Lin et al., 2015; Valantinaitė et al., 2020; Pryshchenko, 2019). Comics are generally a medium used by educators when learning activities can be used to conclude the story's content. Comics have the advantage that they can be used in teaching and learning activities and have a high role in memory and long-term memory (Camacho-Morles et al., 2019; Chaaban et al., 2021; Shih et al., 2010). Comic media are also popular at various ages because it is easy to understand (Aisyah et al., 2017; Suri et al., 2021). Comics are media that do not require long sentences to tell stories, so students can learn how to use vocabulary and dialogue in communicating with others. At the same time, digital comics are media used by educators to improve memory and long-term memory in concluding story content. To improve memory and long-term memory so that students can communicate fluently using English, students must absorb much from reading

the material presented on digital comic media. Media development using the ADDIE development model aims to produce media products in the form of digital comics. Based on the results of learning media development with the ADDIE model, which consists of five stages, each stage must be carried out to obtain media development under the learning objectives (Rustandi, 2021; Suri et al., 2021). The five stages are explained as follows:

Analysis

The analysis is the initial stage carried out in developing learning media, where this stage aims to get an overview of the initial conditions of students, educators, and curriculum. The results of the analysis stage through initial observations are: (1) Students need innovation in the learning process, (2) Students need tools that can be used as a companion in completing the independent learning process, (3) Students need tools to practice communication skills through several daily short dialogues. Digital comic media was chosen as the media based on the investigation findings. This medium was chosen to help students adjust their habits so that they can continue to improve their talents by being self-disciplined and studying (Daulay, 2018; Suri et al., 2021). In addition, this media was also developed with the aim that education becomes innovative, creative, and able to carry out lifelong learning processes.

Design

Design is the second stage after the analysis results come out. A draft design or storyboard from a digital comic will be made at the design stage. Several characters are selected in each story in the digital comic media (Sari et al., 2019; Suri et al., 2021). The characters chosen do not have particular specifications, but each character's name must be easy to remember so that students can easily remember each chapter of the type of conversation being studied. The plot used in every story in digital comics uses a forward plot. In addition, each display of the chapter will have a different color to make it easy for students to remember. Apart from making media designs at the design stage, they also made a questionnaire design from digital comic theory as a validation tool for the selected validators (media experts, materials, and students). The questionnaire contains questions or statements that will indicate the quality of the digital comic media tools developed.

Development

Development is the third stage after the draft for digital comic media development is determined. The media has been developed 100% at the development stage and will be shown to each validator to get input from various aspects (physical and content aspects). Each validator's findings will be used to improve the media to meet the demands and learning objectives better. There were several revisions given to each validator. The first validator is a media expert who provides several notes, including the color of each chapter using contemporary colors because now is not the time to use flashy colors or seem tacky. The font for the dialogue should be easy to read and does not have multiple interpretations, for example, Calibri font. Few words should be emphasized in different colors or bold so that students can scan each dialogue to understand the material being studied better.

The material expert also gave several revisions. The dialogue in digital comics must be updated. The storyline must be clear. Some aspects should be added, such as grammar at the end of the digital comic and custom grammar for English-style slang dialogue. The series of questions used to hone students' skills must have from the easiest level to the hardest level. Lots of additional dialogue must be provided to increase students' vocabulary. Students asked for several genres of music to the lyric and song instruments to be added as revision. The validator results will be used as records to develop digital comic media in a better direction because every improvement made in the process is expected to complement the developed media.

Implementation

Following the development stage, the fourth stage is implementation, during which the generated digital comic media must be tested in both the control and experimental classes. At this stage, the digital comic media will be distributed to all students and used in the learning process.

Evaluation

Because evaluation is the final stage in learning media development, the media will be changed entirely based on feedback from previous validator results before being mass manufactured. One of the revisions that must be followed up immediately is the addition of tools in grammar. Grammar is a highly structured set of rules and governs the arrangement of various sentences, phrases, and words in English. The developed comic media did not necessarily move from printed to digital visual media. However, digital comic media must also be interactive so that students can measure their level of understanding (Daulay, 2018; Listyani, 2019). The digital comic media developed will be packaged like a web series; the higher the level, the more complex the story, so there will always be additional vocabulary at each level. Digital comic media is

developed as a complement or complement in the learning process, which will be clarified. Media is referred to as a compliment if the media is used to complement learning. Digital comic media was developed to contribute important information for students to understand better the use of mobile devices in education (Crompton & Burke, 2018). This digital comic media that was developed contains English courses packaged in an attractive way with displaying material content such as web series so that students can increase their level of understanding and be more curious and addicted to reading the comics. The aim is to make students unconsciously increase their vocabulary level and improve their communication skills.

Communication skills require structured and planned training in direct experience experienced by students (Nemiro, 2021; Sharov et al., 2019; Wood, 2021). Learning requires learning media that provide a stimulus to increase real imagination. Digital comic media can provide imagination that continues to develop according to students' cognitive abilities and connects existing knowledge with new knowledge (Samanci, 2010; Sheu & Chu, 2017; Siswoyo & G Mustokoweni, 2020; Tekle-Haimanot et al., 2016). In detail, developing digital comic media aims to improve students' communication skills. Communication skills are the ultimate goal of learning with various indicators planned during the research.

METHODS

Study Design

The ADDIE development model (analysis, design, development, implementation, and evaluation) will be used in the digital comic media development research (Pawana & Suharsono, 2016). The ADDIE model was chosen because of its easy-to-use systematics in developing digital comic media. In addition to choosing a development model, the media development process, especially in data collection and processing, also used mixed methods. The term "mixed methods" refers to qualitative and quantitative research methodologies. The research technique is a scientific method of gathering data for a specific purpose and using it (Sugiyono, 2014).



Figure 1. Development design

Research subject

The study was done at PGRI Adi Buana University, with a total sample of 32 students in English classes. The sample was chosen using the cluster sampling technique or selecting one class as a sample from two other classes.

Research instrument

Using a questionnaire instrument was to determine the feasibility of digital comic media used to measure the feasibility level of digital comic media development according to media experts and material experts. In comparison, the communication skills in English are determined by observation by assessing the capacity to make educated predictions, arrange arguments, formulate definitions, and draw broad generalizations.

Data analysis

Mixed analysis was used to analyze the data, with learning outcomes being tested using the independent sample t-test technique with a significance level of 0.05 using the SPSS 23 program for Windows. On the other hand, the media test was conducted using qualitative analysis and a questionnaire presented to the expert. The quantitative research method produces findings that can be achieved using statistics or other quantification (measurement). This qualitative study necessitates significant efforts, such as eliciting questions and methods from participants, obtaining detailed data, evaluating data inductively from specific themes to broad themes, and interpreting the results (Creswell, 2014).

RESULT AND DISCUSSION

The development of media in the English language course produces a product in the form of digital comic media, which contains various short dialogues that can be learned via smartphones anywhere and anytime. In addition, digital comic media also has additional tools to test students' ability to understand the material studied and playable tools for lyrics and songs to improve the ability to pronounce vocabulary correctly. Figures 2, 3, and 4 are the development of digital comic media in English courses.



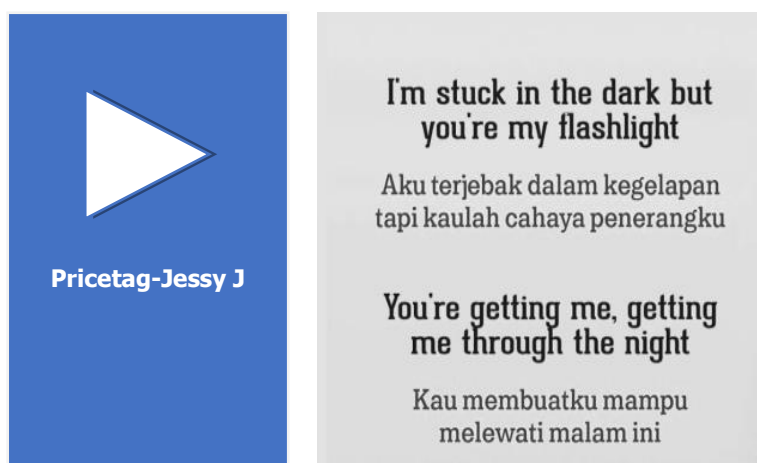
Source: Researcher's Data

Figure 2. Digital comic content



Source: Researcher's Data

Figure 3. Exercises



Source: Researcher's Data

Figure 4. Lyrics and Songs

Media Test Results

The development of media in the English language course results in a digital comic media product. Following the development of the product, a product trial was carried out by mailing questionnaires to a variety of respondents, including media specialists, material experts, and students. Product trials were carried out with educators in the experimental class, but before arriving at students, product trials would first be carried out with media and material experts. The results from media experts will be used as evaluation material to develop the product to a better level. After the reviews from media experts are out, the next step is to try out the material experts.

Table 1. Description of the media validity test

Media expert					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Worthy	3	60.0	60.0	60.0
	Very suitable	2	40.0	40.0	100.0
	Total	5	100.0	100.0	

Media expert testing is carried out to determine the feasibility through several instrumentations: ease of use of media, clarity of instructions for using media, media packaging, the accuracy of media with material, and clarity of language use. The test results show that at each assessment point, 60% of the media expert's assessments state that the results of developing digital comic media are suitable for use as learning media. At the same time, 40% of the media expert's assessments state that it is appropriate to be used as learning media. The results are presented in [Figure 5](#).

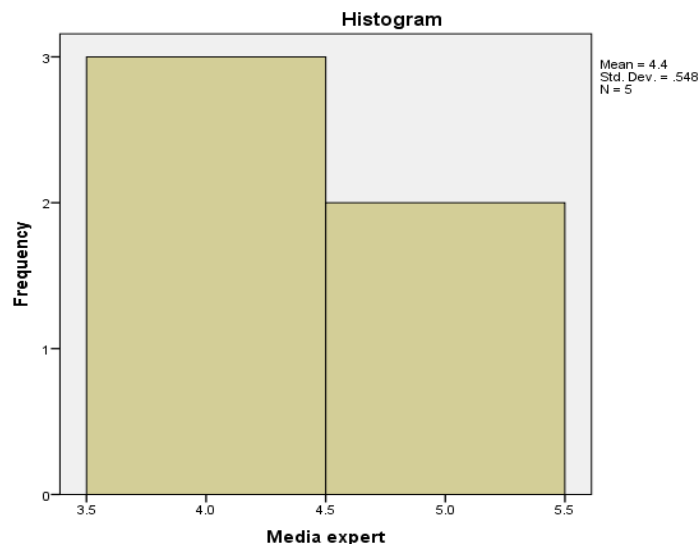


Figure 5. Histogram of media experts

Specialists in media are also technology experts, particularly in educational media. Before being tested on students in the experimental and control classes, trials on media experts and material experts were conducted to determine the level of practicality and attractiveness of the generated media. Media development is proclaimed very practicable to be used in the learning process based on data analysis received from media professionals. The material specialist could be an English material expert or a teacher who teaches English courses.

Table 2. Material Expert Test Results

Material expert					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Worthy	2	40.0	40.0	40.0
	Very suitable	3	60.0	60.0	100.0
	Total	5	100.0	100.0	

Material expert testing is carried out with five assessment indicators: material coherence, the suitability of the material with the purpose, the suitability of the use of language with the material, the depth of the material, and the suitability of the material with the characteristics of the respondent. According to media experts, two categories met the feasibility of developing digital comic media as learning media with a percentage of 40%. Meanwhile, it was very suitable or appropriate in the three categories as English learning media with learning outcomes in communication skills in English. More details are presented in the following figure.

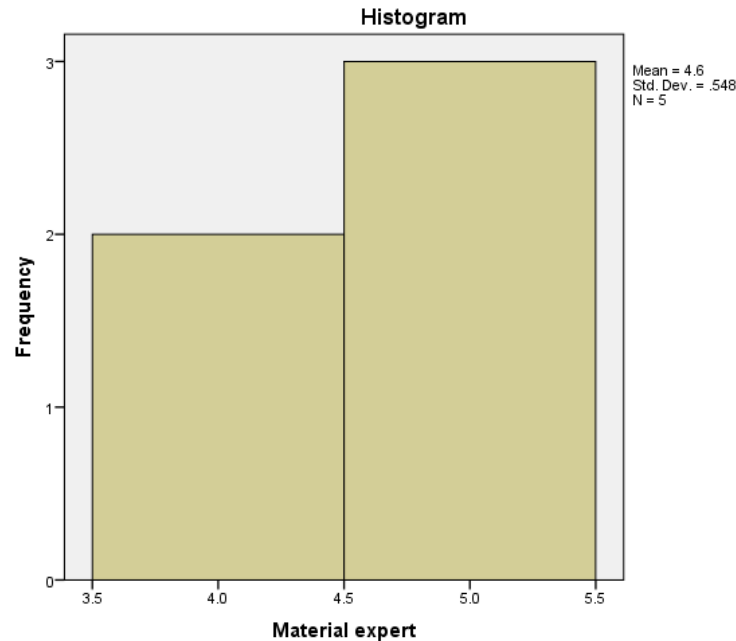


Figure 6. Histogram of material expert assessment

Meanwhile, material specialists proclaimed that the media is highly possible to apply in the learning process and boost students' autonomous abilities based on the data analysis with a presentation of 85 percent of media development. According to the results of trials in the experimental class, 93 percent of digital comic media development is practical and entertaining to build based on distributing questionnaires to students. Because digital comics are in great demand by students, these media can be mass-produced and can be directly applied in the learning process.

Application of digital comic media to communication skills

The use of development media in the form of digital comics is applied to learning in the classroom, and the following information was acquired as a result of implementing learning in the classroom using digital comic media.

Table 3. Learning Outcomes of Communication Skills

	Make guesses			Arranging arguments			Formulating a definition			Generalization		
	Good	Very good	Total	Good	Very good	Total	Good	Very good	Total	Good	Very good	Total
Frequency	15	17	32	14	18	32	15	17	32	16	16	32
Percent	42.9	48.6	91.4	40.0	51.4	91.4	42.9	48.6	91.4	45.7	45.7	91.4
Valid Percent	46.9	53.1	100.0	43.7	56.3	100.0	46.9	53.1	100.0	50.0	50.0	100.0
Cumulative Percent	46.9	100.0		43.8	100.0		46.9	100.0		50.0	100.0	

According to the research findings, 15 students made good predictions about what the digital comics they had learned signified, while the other 17 students made very good guesses. Fourteen students had good argument-making skills in the Arranging arguments category, and 18 students arranged arguments very well after reading digital comics. In the category of students' ability to formulate definitions, 15 students formulated a definition well, while 17 students did very well. In the category of making conclusions, 15 students concluded well, and also 16 other students concluded very well when they were asked to retell the digital comics they read.

Table 4. Correlation and Covariance Test Results

Correlations					
	Make guesses	Arranging arguments	Formulating a definition	Generalization	
Make guesses	Pearson Correlation	1			
	Sig. (2-tailed)				
	Sum of Squares and Cross-products	8.000			
Arranging arguments	Covariance	1.258			
	Pearson Correlation	1.188	1		
	Sig. (2-tailed)	.303			
Formulating a definition	Sum of Squares and Cross-products	1.500	7.969		
	Covariance	.948	.857		
	Pearson Correlation	.952	.071	1	
Generalization	Sig. (2-tailed)	.864	.899		
	Sum of Squares and Cross-products	2.000	.563	7.875	
	Covariance	.865	.018	.254	
	Pearson Correlation	.813	.722	.711	1
	Sig. (2-tailed)	.081	.507	.320	
	Sum of Squares and Cross-products	2.500	.969	1.438	7.969
	Covariance	.781	.731	1.046	1.257

Table 4 shows that the development of digital comic media is carried out using the Structural Equation Model to test the statistics of a series of relationships that are relatively difficult to measure simultaneously. It was found that all indicator variables (Making assumptions, Arranging arguments, Formulation of Definitions, and Generalizations) obtained a significant value of person correlation > 0.5 . The results of all assessment instruments are valid, so digital comic media is feasible to use. The covariance results also show results > 0.5 , which indicates that comics media improves communication skills with a close relationship between variables that support the influence of media use on learning outcomes of communication skills in English.

According to media experts, the development of digital comic media as a result of research with indicators of ease of use of media is declared to be very feasible in the category of clarity of instructions for using media is declared eligible with a proper predicate. The media packaging category gets a decent score. In contrast, the accuracy of media with material gets a very decent score, and clarity of the use of language received a decent rating. Learning media can improve learning outcomes (Degeng, 2008a; Suryanto et al., 2021). During the Covid-19 pandemic, learning media in the form of digital comics makes it easier for teachers and students to participate in the learning process, as well as for parents of students to accompany their children to study at home (Botella et al., 2018; Saputra & Pasha, 2021). The results of the material expert validation obtained information on the indicators of material collapse and the suitability of the material to get a proper assessment. The suitability of the use of language with the material, the depth of the material, and the suitability of the material with the characteristics of the respondents received a very decent assessment. Overall, according to the expert, the development of digital comic media is valid and suitable for use in learning English. The correct material and media will develop students' creativity and reasoning in interpreting the material presented, which will impact their mastery of the material (Menon et al., 2019; Saputra & Pasha, 2021).

The result of developing comics media after being applied to learning English is that students' communication skills show that 53.1% of students can guess very well, and 46.9% of students can guess very well. It proves that digital media can increase their creativity in guessing the practice of communicating in front of the class. The ability of students to prepare arguments, 56.3% can do very well, while 43.7% can work on arguments well. The purpose of digital comics is to provide clear instructions about the learning process to improve motivation and creativity in learning implementation (Eryadini, 2021; Suri et al., 2021; Sutarum et al., 2021). For students' ability to do Formulate definitions, 53.1% did very well, and 46.9% did well. Communication abilities are influenced by the ability to develop definitions after viewing digital comics. Communication abilities are influenced by the ability to develop definitions after viewing digital comics. The ability to define what is in comic media from sentences and images in digital comic media is a high-level skill through direct observation of digital comic media.

The study results related to generalization ability obtained information that 50% can generalize very well and 50% can generalize well. The ability to conclude material requires regular practice, and appropriate media can improve the ability to make generalizations. The result is, of course, able to improve their communication skills in English by retelling what they know about the contents of the digital comic. (Daulay, 2018; Febriansyah et al., 2020). Comics are media consisting of fictional and non-fiction ideas conveyed through visual images to explain the course of a story. Generalizing requires skills to understand digital comics well. The generalization process is carried out after various studies of digital comic media expressed by the story behind digital comic media.

The use of digital comic media can improve communication skills in English. This communication ability can be known by improving the ability to guess, formulate arguments, formulate definitions, and generalize. Digital comic media makes each student's imagination develop in forming arguments, as well as redefining what they know about the messages contained in digital comic media (Ntobuo et al., 2018; Sari et al., 2019; Wiegerová & Navrátilová, 2017). The four basic skills in communication require repeated practice so that students can develop these skills with real hands-on experience. These four indicators of communication skills are also helpful in solving the various problems surrounding them. The use of digital comic media is undoubtedly one of the learning strategies that can be chosen to improve language skills in general.

CONCLUSION

The development of digital comic media for English courses using the ADDIE development model according to the assessment of media experts and material experts meets the rules of media development to get a very decent average predicate. Results. The application of digital comic media can improve communication skills in English very well. The communication skills in English are seen in the ability to make guesses, formulate arguments, formulate definitions, and generalize with excellent results. Digital comic media can give them a lot of imagination and creativity in English communication. The use of digital comic media in a planned and structured manner can improve language skills in general.

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