



# Android-Based E-Comic: An Adaptive Solution to Grow Students' Life Skills in Enforcing Post Covid-19 Health Protocol

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**Abstract.** After the Covid-19 pandemic, all life systems, and cultures, especially in the educational sector, changed. The changes happened not only in the learning system and model that applied blended learning but also in students' habits to avoid the spread of Covid-19. The habits here included the use of hand sanitizer, hand washing, and the use of a mask. Nowadays, various sectors, including education, have entered the post-covid-19 endemic period. Nowadays, the challenge is ensuring that each student at school can consistently grow their care on clean living culture and consciously become accustomed to it, consistently washing hands, wearing a mask, and using hand sanitizer. Elementary school students are susceptible to being massively infected by the virus, so they should continuously receive integrative and systematic understanding through information media. One of the information media mostly used by students is comics. The comic is a literation media combing text and picture which presents a particular message that can be quickly understood so that it is effectively delivered. Comics can increase students' interest in reading, especially if designed digitally. The study developed and integrated e-comic into Android for students. The use of comics, a familiar media for students, effectively embeds the concept, understanding, and positive habit on elementary school students to live peacefully with the Covid-19. Growing students' habits to be aware of wearing a mask, washing hands, keeping a distance, and obeying the health protocol at school can be facilitated using e-comic, which grows students' life skills in avoiding the spread of Covid-19.

**Keywords:** E-Comic · Android · Life Skill · Covid-19

## 1 Introduction

Nowadays, the life order in many aspects after the Covid-19 pandemic experienced many changes, including in education. After the Covid-19 pandemic, the learning system in educational units (elementary, secondary, and high schools) has changed and developed to adapt to the demand to use technology in education. The use of information technology-based learning media has massively developed. One information media

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that can be used for learning is the comic. In some studies, comics can contribute to intermediate the delivery of a message in the comic effectively. The comic's strength is that it combines text and figures in delivering information with an easily understandable story [1]. Giving comics to elementary school students is highly proper as, according to Piaget, 6–12-year-old kids are in the concrete operational stage. In this phase, they have already matured to use their reasoning or logical thinking through visualization [2]. In the cognitive growth phase, elementary school students operate their visual potential. Messages integrated into the comic contain life skills about how they should behave healthily, obey the regulation to wear a mask, wash hands, and provide hand sanitizer in the post Covid-19 pandemic era.

What is a life skill? A life skill is applied by someone to properly and responsibly solve a problem. Life skill consists of a set of skills obtained from learning or experience to solve daily problems [3], including creative thinking, critical thinking, metacognitive thinking, communication, collaboration, information literacy, digital literacy, citizenship, work, and career, and individual and social responsibility [4, 5].

It is strongly believed that life skill habituates elementary school students to solve a problem consciously. Some problem highly correlated with preventing the spread of Covid-19 is how to make them obey the regulation to wear a mask, wash hands, and use hand sanitizer at home, school, or public places. Habituating elementary school students to obey the health protocol, like wearing a mask, is necessary to grow healthy living culture to prevent the spread of Covid-19. The habituation can be mediated using media familiar to the students.

Comic, including e-comic, is believed to be effective in transforming a message. E-comic delivers the content digitally. The conversation built in the comic flows linearly and stimulated the readers' curiosity. It is because the comic is designed to combine texts and figures. Comic designed for elementary school students (both low and high classes) effectively stimulates curiosity due to its visual media. The comic is highly effective in being applied to elementary and secondary schools. Besides its unique design and plot, comics can attract students to focus more and enjoy the learning process since elementary school students are easily attracted by visual media [6].

To support the habituation of elementary school students with healthy life like regularly washing hands, wearing a mask, not exchanging eating tools at school, and eating healthily, it is important to develop the e-comic application as the information media to prevent the spread of Covid-19 which emphasize life skills. Through e-comic media, the life skill values are presented smartly and visually to illustrate how to do interaction at home and school. Home and school are selected as the event locus as both are intensive places for children to interact.

E-comic is a dynamic medium to deliver information because it can be read anytime and anywhere as long as it is connected to the internet. E-comic combines the power of text, which intrinsically informs the life skills of Covid-19 spread prevention, and the power of pictures which visualize a story made narratively. Textual narrations are combined with pictures to ease students' understanding of the message in the text. Thus, the plot is easily understood and remembered [7]. In this study, e-comic is a life skill information media containing life skill values including 1) Attitude and character;

2) Maintaining health and balanced diet; 3) Communication and collaboration; 4) Self-regulation; 5) Creativity and innovation; 6) Self-awareness; 7) *Cyberbullying*; 8) Coping Skill; 9) Digital literacy, and 10) Problem-solving.

*Life skill* values above are presented through digital interactive dialogue so that students, as readers, feel involved in the story. The story is begun by mentioning the goals of each theme of the comic and continues with the interactive dialog on each topic. The story in the e-comic starts by introducing the characters' attitudes in the dialogue about how to face the Covid-19 pandemic and endemic, especially when students are at home or school. The behavior here refers to the response to the way the students learn at school during the Covid-19 pandemic and endemic. Then, self-regulation is highly necessary for students when they should synergize themselves with the learning environment, interact, and independently solve problems.

Face-to-face learning in Covid-19 pandemic and endemic needs self-regulation. For elementary school students, self-regulation will help them to study face to face in Covid-19 pandemic era. Parents can educate their children at home to manage themselves, make a positive decisions, and act positively to obey the health protocol. Some important aspects that parents should embed to their children are regularly washing hands, not making physical contact, and avoiding sneezing in front of their friends.

## 2 Discussions

### 2.1 Life Skill Educations

A *life skill* is solving problems properly and responsibly in managing personal issues. Life skill refers to a positive attitude, including the combination of knowledge, attitude, behavior, and values in applying the skills positively to achieve a particular goal [8]. Thus, life skill is considered a set of abilities that can support someone in developing well-being and competencies in facing daily life [9, 10].

Life skill education is believed to empower the young generation to act responsibly and effectively, be initiative, easy to adapt, control stress and emotion, be independent, and be disciplined [11]. According to WHO, there are ten life skills: 1) Self-awareness, 2) Critical thinking, 3) decision making, 4) effective communication, 5) coping with stress, 6) empathy, 7) creative thinking, 8) problem solving, 9) Interpersonal relationship and 10) Coping with emotion [3]. While the life skills needed in the 21<sup>st</sup> century belong to two core domains, namely: 1) the ability to learn and innovate; 2) digital literacy; 3) carrier life skills [12, 13].

The ability to learn and innovate consists of skills like critical thinking, problem-solving, communication and collaboration, creativity, and innovation. Digital literacy skill consists of information literacy, media literacy, and communication technology. Carrier life skills consist of flexibility and adaptability, initiative and self-regulation, social and multicultural interaction, and productivity and accountability [14–17].

### 2.2 Android-Based E-comic: An Effective Solution to Embed Life Skills in Students in Covid-19 Pandemic and Endemic

This paper is a part of the research and development of life skill education applications which are rich in values like 1) attitude and character; 2) maintaining a healthy



**Fig. 1.** E-comic application

and balanced diet; 3) communication and collaboration; 4) self-regulation; 5) creativity and innovation; 6) self-awareness; 7) cyberbullying; 8) coping skill; 9) digital literacy, and 10) problem-solving. The values are presented through a digital comic (e-comic) installed and operated using a handphone after being downloaded via the play store. The application is named Mobile Smart Parenting Teacher (MSPT) Digital Book containing digital comics and animated videos presenting dialogues about life skill education (Fig. 1).

Digital comic (e-comic) is a solution to stimulate students' curiosity about digital comic content [18, 19]. The use of digital comics indicated the development of digital comic media as a learning media to distribute information to educate and support students in learning [20–23].

Digital comic (e-comic) combines texts and pictures presented in the box containing all story series (Hobri et al., 2019) [24]. Generally, elementary school students like illustrations presented in e-comics to be motivated and attracted to read the comic further [25]. E-comic is a media graphic containing messages presented through a story [26]. The question is why a digital comic is selected to mediate life skill values to prevent the spread of Covid-19. The reason is that the comic is educative and can deliver a message clearly and communicatively. Thus it can attract students' attention. Also, the comic's design, character, text, and plot are easy to understand and remember [7, 27].

The digital e-comic developed in the earlier study has been used in many elementary schools and we found that it is quite flexible in application. The Android-based life skill e-comic contains ten life skill themes which are briefly discussed below:

### 2.2.1 Attitude and Character

Students at home or school need a strong attitude and character in facing Covid-19 pandemic and endemic. Here, attitude is defined as the feeling about something or how the learning method at school responds to the Covid-19 pandemic and endemic situation.

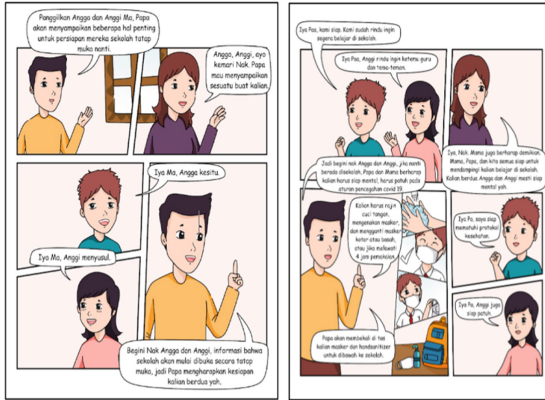


Fig. 2. E-comic attitude and character

How do the teachers, parents, and students behave properly in learning activities but still obey the health protocol? One day, the attitude will fossilize in the actors when the attitude is habituated. Parents and children will be collaboratively disciplined to obey the health protocol to avoid the spread of Covid-19 when they the following face to face learning at school. Dialogs about attitude and character are shown in the story of parents giving positive messages to the children to obey the health protocol. In contrast, the children state that they are ready to obey the rules like wearing masks are highlighted in the e-comic (Fig. 2).

**2.2.2 Communication and Collaboration**

Communication and collaboration refer to the concepts of mutual understanding, agreeing to actively help each other in implementing a positive attitude to prevent the spread of Covid-19 virus. The positive attitude can be in the forms of “I will ...” and “I will not ...” indicating a strong commitment to building positive interactive relations among many parties during limited face-to-face learning. Also, the phrase “I will not ...” means a commitment not to perform any activities breaking the protocol of Covid-19 virus spread prevention, like hanging out, which triggers mobility (Fig. 3).

**2.2.3 Self Regulation**

Self-regulation is the ability to regulate ourselves to synergize in the learning environment, interact, and make a decision independently in solving personal problems. Face-to-face learning in Covid-19 pandemic era needs self-regulation. Elementary school students with good self-regulation will help them learn face-to-face during the Covid-19 pandemic. Parents can educate their children at home to continuously regulate themselves, make a positive decisions, and act positively to follow the health protocol. Some important points parents should embed to their kids are regularly washing hands, avoiding physical contact, avoiding sneezing in front of other students, washing hands with clean water and soap, and using hand sanitizer (Fig. 4).

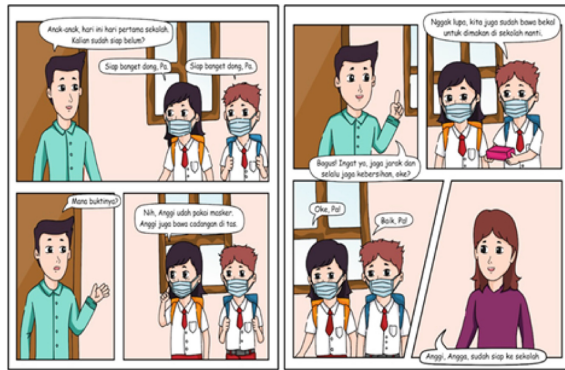


Fig. 3. E-Comic communication and collaboration

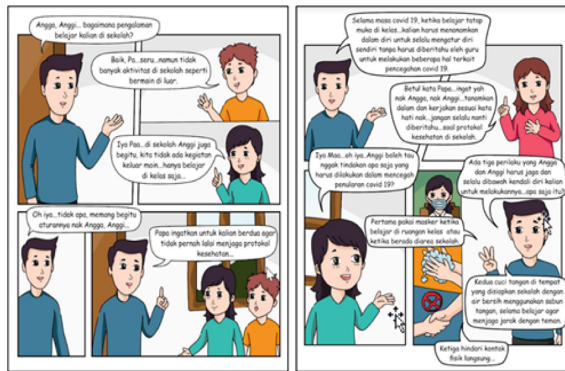


Fig. 4. E-comic self regulation

2.2.4 Self Awareness

Self-awareness is the ability to control feeling converted into positive actions. The positive actions in MSPT refer to the attitudes to prevent the spread of Covid-19 among students, teachers, children, and parents when they run activities at school in the limited scenario. Good self-awareness is shown by the positive personal response when facing a problem and the willingness to solve it. The main challenge faced by parents and teachers in the limited face to face learning is how to educate children and act politely to raise their awareness always to obey the health protocol of Covid-19 spread prevention (Fig. 5).

2.2.5 Creativity and Innovation

Creativity and innovation are two learning goals. Creativity is the learning strategies shown by students through new acts in the pandemic era, which results in good learning competence. Innovation is the students' ability to give creative solutions to a learning problem. The problem in learning is not only about the achievement of competence



Fig. 5. E-comic self awareness



Fig. 6. E-comic creativity and innovation

indicators or materials the students learn, but it is also related to the problems about the limitation to move to do further exploration like the learning duration is limited, the interaction is limited, which leads to the limitation on learning creativity and strategies that teachers can apply (Fig. 6).

Creativity in limited face-to-face learning is limited. However, it does not mean that teachers cannot create a space for students to innovate their learning. Teachers can prepare individual or group worksheets as long as they can be controlled and students have the high self-awareness to obey the health protocol to prevent the spread of Covid-19. Parents can contribute to ensuring that the learning at school can run optimally by supporting them to follow the creative activities based on the learning scenario designed by the teacher. The teacher's role in this session will be dominant because the conversation is mostly carried out at school. The learning activities performed by teachers and students are illustrated through a simple scenario that can be implemented in real face-to-face learning. Teachers can implement case study, which allows students to understand a problem and give a solution. Contextual learning material interrelated with the pandemic situation can widen the students' change to be more adaptive to the learning issues experienced during the pandemic era.





Fig. 7. E-Comic cyberbullying

**2.2.6 Cyberbullying**

In limited face-to-face learning, some students may post pictures of their friends not wearing masks. While in fact, the students only put off their masks for some seconds. To avoid it, children should be educated about the empathy and skills of using social media. Cyberbullying is carried out by posting improper acts or content which describe a condition that can hurt the feeling of the actors and is conducted more than once (there is a tendency to do it repeatedly). Cyberbullying can hurt someone feeling so that they will feel uncomfortable. Parents or teachers can educate children or students not to post pictures or videos or make up a narration (text) on social media. Students or children can be educated at home before they go to school, and at school, teachers can supervise and make reportage mechanisms when there is cyberbullying (Fig. 7).

**2.2.7 Coping Skill**

Stress is a condition faced by someone in a particular condition due to a particular cause. In the pandemic era, parents, teachers, and students can face stress for a long time due to unstable physical and mental conditions. It seems imposible that students or children and parents did not experience stress in the pandemic era. Even in entering the face to face learning phase, parents, teachers, and students can feel stress. They were doubt if some students would not obey the health protocol (Fig. 8).

Coping skill strategies are implemented to manage ourselves to keep calm while facing some conditions like the Covid-19 pandemic had not ended, the limited face-to-face learning had been started, parents were worry to let their children to school, and the supervision on the implementation of health protocol is taken over by the school. Parents were worry to face the condition.

**2.2.8 Digital Literacy**

Digital literacy describes the ability to process information based on its purpose, which is from and shared to worldwide (internet) through networks like social media (WahatsApp, Facebook, Instagram, or Twitter). Digital literacy here means parents and children should





Fig. 8. E-Comic coping skill

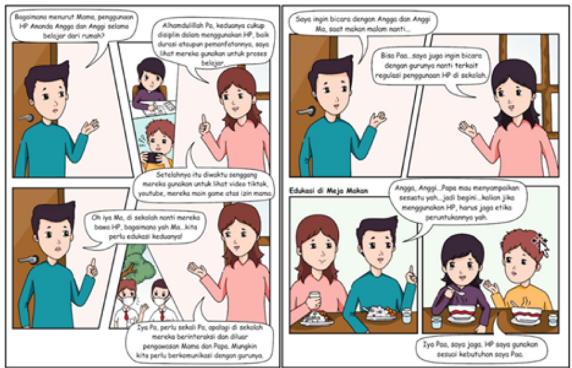


Fig. 9. E-Comic digital literacy

understand the management of media usage. Students should only see, read or download digital media that can support the learning activities (Fig. 9).

Besides that, parents should educate their children to wisely select media content that can be consumed daily. In limited face to fa learning, parents should educate their children not to share hoax information and be smarter in using social media. Being smart here means that students can prevent themselves from forwarding news before checking its validity, including news about Covid-19.

### 3 Conclusions

We presented some parts of the Life Skill Education comic that we have developed. The full version can be downloaded in Play Store MSPT Digital Book. The best practice of the use of the e-comic can educate children by easing them to remember the strategies to obey the health protocol to prevent the spread of Covid-19. This action will be habituated and finally permanently attached to them and become a positive tradition or culture in social interaction both at school and at home. Life skill values that should be implemented in real life, which are visualized in the comic, include: 1) Attitude and character; 2)

Maintaining health and a balanced diet; 3) communication and collaboration; 4) self-regulation; 5) creativity and innovation; 6) self-awareness; 7) *Cyberbullying*; 8) Coping Skill; 9) Digital literacy; and 10) Problem solving.

The digital comic can be used to mediate information. Using digital comics to deliver information like skill values by uploading it to play store with an android platform that can be installed on a handphone is effective in achieving goals and improving students' interest and attention so that they will be easier to understand the life skills. As a visual medium, comic present life skill story plots which is educative and interesting for elementary school students because it contains interrelated conversation that can stimulate teachers and students to be curious to read the continuation of the story.

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