



Interactive Media Design to Increase Elementary School Children's Motivation in Post-Pandemic Learning

Edwinna Analia Christiani, R.R. Ratna Amalia Rahayu and
Gangga Saputra

EasyChair preprints are intended for rapid dissemination of research results and are integrated with the rest of EasyChair.

July 17, 2023

Interactive Media Design to Increase Elementary School Children's Motivation in Post-Pandemic Learning

Edwinna Analia Christianti¹, R.R. Ratna Amalia Rahayu², Gangga Saputra³

^{1,2,3} Visual Communication Design Department, School of Design, Bina Nusantara University

Paskal Hyper Square, Jl. Pasir Kaliki No.25-27, Ciroyom, Kec. Andir, Kota Bandung, Jawa Barat 40181

Email : edwinna.christianti@binus.ac.id, ratna.amalia@binus.edu, gangga.saputra@binus.ac.id

Abstract— In the post-pandemic period, one of the obstacles faced by teachers is the decreased motivation of students in learning. The result is a low level of student learning desire. Effective and fun learning media can increase student motivation in learning and make it easier for students to understand the material. This study uses qualitative methods with interviews and direct observation. The results of the research are used as the basis for designing interactive media in the form of card games to increase student learning motivation as well as being a fun, educative, and interactive learning medium. The creative approach used is to use 3 outputs, namely: card games as an important medium in this game which will be supported by e-books and video tutorials. The use of technology is also implemented by displaying a QR code that can be accessed for information about this card game.

Keywords—interactive media, card game, learning motivation

I. INTRODUCTION

After face-to-face learning was reinstated by the government, teachers and parents faced many obstacles. From the results of the interviews conducted, one of the problems faced is the condition of student learning motivation which tends to decrease after the pandemic. . In the past, when learning was done face-to-face, children felt cared for or supervised directly and clearly, so that the level of desire to learn was relatively more awake. This is different from the current post-pandemic conditions, where awareness of the desire to learn has decreased. One of the main functions of learning media is as a teaching aid which also influences motivation, conditions, and the learning environment [1]. With monotonous learning media, it will lead to boredom and reduce the enthusiasm of students in learning. From the results of observations that have been made by the author at SDK 3 Bina Bakti Bandung, the writer can find out that the learning media used by SDK 3 Bina Bakti Bandung only use existing media in the form of infocus, shows in the form of videos taken from Youtube, and presentations.

II. METHODOLOGY

The research method that the author uses is to use qualitative methods by conducting direct interviews and in-class observations. From the results of interviews that the author has conducted with teachers at SDK 3 Bina Bakti

Bandung, the curriculum used at SDK 3 Bina Bakti when they dared to use the emergency curriculum, while the curriculum currently used is the independent learning curriculum. The problem itself is that students' learning motivation tends to decline after the pandemic. For media learning aids that are used only use infocus and a laptop to display presentations and videos. As for the observations that the writer has made, the writer sees that the students in class 2 of SDK 3 Bina Bakti look happy when learning to use learning media using the Quizizz application. from the media the game that the teacher has done, the writer can conclude that the game can be the right media to build enthusiasm and motivation of students as well as being an effective and interactive learning media. For the results of observations made in class 4 SDK 3 Bina Bakti Bandung, they were very enthusiastic when asked who had the most correct questions in answering questions? and who already understands the material? But answer what the child gives is inversely proportional to the results obtained. This is proven many children when asked by the teacher with similar questions could not answer.

From the results of the interviews and observations that the authors conducted, it can be concluded that effective, interactive, and fun learning media will make it easier for students to understand the material presented while at the same time increasing student motivation in learning.

III. THEORITICAL REVIEW

Interactive Learning Media – Learning media according to Mudlofir & Rusydiyah [2] is an intermediary for messages from the sender to the recipient so that in the form of print and non-recipients have learning motivation for satisfying learning outcomes. In the Big Indonesian Dictionary (KBBI), the meaning of interactive is the nature of mutual action; inter-relationship; mutually active. According to Saluky [8], the purpose of learning with interactive learning media is to facilitate the learning process and foster teacher creativity and innovation in designing the learning process. Seeing the description above, interactive learning media has many benefits for students, so that it can lead to good interactions between teachers and students or students with other students. The interaction that will occur makes the class atmosphere more lively and not boring.

Card Game – In general, the notion of a card game is a game that uses cards as a playing tool, making it more practical and easy to play anywhere. Quoted Khairunnisak in Sari, Yunita

et al. , The use of card media in learning has several advantages, including: (1) easy to carry, (2) easy to make, (3) easy to present, (4) easy to store, (5) suitable for large and small groups, (6) can involve all students in the presentation, (7) can be used as a fun game, (8) increases interaction between students, (9) stimulates students' thinking skills, (10) increases student motivation [3]. Card games can make students more active in the learning process [4]. This card game theory can be used in making learning media in the form of games that can provide many advantages for students and teachers. In addition, card games are the right choice to be played in the classroom because they do not require a large area to play them and can be played for large or small groups so that interaction between players and teachers will be created. This card game can also be an interactive learning media that is easy to store and carry.

Child illustration– Illustration is a word that comes from the Dutch "Illustratie" which means a decoration with pictures. Quoted from Susanto in Augia Journal of Fine Arts Education Illustration is the art of drawing that is used to visually explain a purpose or purpose. Many illustrations are used as learning media for children, both in printed form and in the form of games so that they are of great interest to children because children like new [5]. The illustrations themselves have various variations, one of which is a cartoon illustration. In drawing for this card game, the author will use attractive cartoon illustrations that will be applied to the mascot, card and packaging designs. Cartoon illustrations are the choice taken because cartoons have cute, attractive and easy-to-remember forms for children

Child Color – According to Kusrianto in Santosa color has different properties and influences on psychology, depending on the type of color or what is known as color psychology [5]. Color selection for children is an important aspect because it can stimulate child development and have an effect on child psychological development. Children will prefer things that smell cheerful. So the use of colors that bring a sense of happiness and cheerfulness is very liked by children. Following are the functions of various colors according to Dian Permatasari, M.Psi (Psychologist).

- Red color

The red color gives the impression of enthusiasm so that it can stimulate thinking and increase energy. On the other hand, red can stimulate aggressiveness, causing children to concentrate less. There needs to be a neutralizer so that the red color is not too dominant.

- Yellow color

The yellow color gives a bright impression, the feel of a story so that it creates a feeling of joy, happiness, and at the same time motivates children. Yellow can also improve concentration, memory and intelligence.

- Orange color

Orange can improve communication skills, make children adaptable and sociable.

- Pink color

Pink can increase empathy and be feminine.

- Blue color

Blue has a calming effect, increases self-confidence, and can reduce anxiety and aggression.

- Green color

The green color gives children a cool, fresh and comfortable feeling. Green color can also help to improve the immune system and children's reading ability.

From the explanation above, color selection is also very important in the visual creation process because color can affect psychology in children. Based on the function/energy generated by each color, the authors will use bright colors such as red, yellow, blue and green as the main colors so that when children see the colors in the visuals they feel happy, excited and can motivate children.

Card Typography – According to Sihombing in Azhari [6], typography is a discipline of art a knowledge of letters. Meanwhile, according to the first step that needs to be known in learning typography is to understand the anatomy of letters. In card games, it is expected that the type of writing is simple and easy for children to read quickly. Because most children learn to read by spelling out each letter, and the sounds that result from learning/visuals until they can put them together to form words. Card games that use the printing process must print the quality of the letters, the color of the letters used, how the letters are arranged, the shape of the paragraphs and the length and short lines of a text. The choice of font type can also cause accessibility problems and make it unpleasant for people to read. Not only the size of the letters, the space/spacing for each word/sentence must be made sparse so that it doesn't seem congested and boring.

Card Layouts – In the language layout means layout. According to Rusdiana explains that layout is an attempt to compile, arrange or combine elements or elements of graphic communication (text, images and tables) [7]. In principle, the main purpose of the layout is to display image and text elements in order to be communicative in receiving the information presented. From the theory above, these principles and rules will become the author's boundaries and foundation in making card designs. The author will lay out card games so that they can be communicative and the information they want to convey can be conveyed.

Motion Graphic – Motion graphics come from the word motion or movement and graphics which means pictures. Generally, motion graphics or motion graphics are illustrations or images that move. According to film theorist Michael Betancourt, motion graphics are media that use video recording and/or animation technology to create the illusion of motion and are usually combined with audio for use in a multimedia output. The book Exploring Motion Graphics by Gallagher & Paldy states that all designs have visual placements that guide the audience into the message and help them understand the main information the design is trying to convey. The information that will be conveyed will be made more concise and simple so that the audience can easily understand and understand the information conveyed while at the same time attracting a lot of attention.

From the explanation above, motion graphics are a supporting tool for this card game that can be used to convey important information in video form so that it is easy for students and teachers to understand while at the same time attracting attention.

E-books – According to Andikaningrum et al., a digital book, or also called an e-book, is a publication consisting of text, images, and sound and is published in digital form that can be read on computers or other electronic devices such as Android or tablets [8].E-books are in demand because of their

small size when compared to printed books, and also generally have a search feature, so that words in electronic books can be quickly searched and found [9].

The advantages of the E-Book are as follows:

- Can be directly ordered, downloaded and used immediately, this is different from printed books that must be purchased or ordered at bookstores.
- The second generation of electronic books has motion or color capabilities.
- Text can be automatically searched and cross-referenced using hyperlinks.
- Has light so it can be read in dark places.
- Have the ability to go to the last part that has been read.
- E-books have unlimited production so there is no term "out of print".

From the explanation above, e-books are modern media that can make it easier for readers because they can be enlarged or reduced, no need to bother carrying them, and can be downloaded at any time.

Development of schoolchildren (6-12 years) – The developmental stage of school-age children is in the age range of 6-12 years and is commonly referred to as middle childhood or latent period. One sign of the beginning of this school period is that children's attitudes towards the family are no longer egocentric but objective and empirical towards the outside world [10] Therefore, at this time, children already have an intellectual attitude, so this period is called the intellectual period. This is the age when children are ripe for learning. According to Afandi the readiness of children to enter elementary school is the skills that children already have to carry out their tasks academically in elementary schools, such as: the ability to observe objects, understand language/vocabulary, fine motor skills, concentration, memory, etc. [11] Thus it can be concluded that the development of school-age children (6-12 years) is the development of children when they enter the world of school and learning includes cognitive, physical, language, and socio-emotional. In this stage, children will be introduced to the world of learning and train children to be in a wider area of the environment.

Taxonomy – This taxonomy was first outlined by Benjamin S. Bloom in 1956 in a book *The Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook I: Cognitive Domain*. Bloom's taxonomy refers to groupings made for educational purposes. Bloom's taxonomy has three domains including 1) the cognitive domain, which includes memory or recognition of certain facts, procedural patterns, and concepts that enable the development of intellectual abilities and skills [21] affective domain, domains related to the development of feelings, attitudes, values and emotions, 3) psychomotor domains, domains related to manipulative activities or motor skills [22]

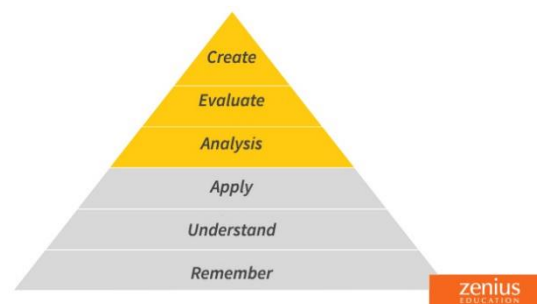


Figure 1 Blooms Taxonomic Classification

Source : <https://www.zenius.net/blog/soal-hots>

Based on the picture above, Blooms' taxonomy classification 3 initial classifications that students need to have as an early stage of learning:

1. Remember
Students can memorize basic facts, dates, events, people, places, concepts and patterns.
2. Understanding
Students can explain a concept using their own words.
3. Apply
Students can apply their knowledge to solve more complex problems.

From the explanation above, the target to be achieved through the card game that the author will make is that students can remember the learning material that has been explained by the teacher, then students can understand and digest the existing material, and it will be applied during the card game process as a form of evaluation about the extent to which students have understood the material that has been explained.

Motivation to learn – Motivation is a mental impulse that drives human behavior on the basis of needs. According to Ihsana El Khuluqo states "Motivation is a process to activate motives/powers into actions or behavior to meet needs and achieve certain goals." [12] In learning, motivation becomes a very important aspect and is needed to arouse students' enthusiasm for learning. According to Sadirman the notion of motivation in learning activities is the overall driving force within students that generates learning activities, which guarantees the continuity of learning activities and provides direction to learning activities, so that the goals desired by the learning subject can be achieved. [13]

In addition, according to Vania Winarsih, the importance of motivation for students is to [14]:

- Advise the position at the beginning of learning, process, and final results
- Inform about the power of learning effort
- Directing learning activities
- Encouraging enthusiasm for learning
- Awareness about the irrational course of study and work

From the explanation above, motivation is a very important aspect in learning but is often difficult to measure. Motivation in learning is needed in carrying out learning activities in order to achieve maximum student learning outcomes. Efforts to increase motivation have been made at SDK 3 Bina Bakti by giving encouragement, words of encouragement, and using learning media as a tool. However, the use of less

varied learning media can make students feel bored and reduce student motivation in learning.

IV. DISCUSSION

This section contains the discussion and design process that the author has done. From the beginning of the visual breakdown process to coming up with a visual solution for this final project or finish.

A. Color-mood

The colors that the author will use in designing this card game. These colors were chosen according to color psychologists which are suitable for elementary school-age children, namely colors that are colorful and bright so that they can trigger children's curiosity and create a feeling of happiness.



Figure 2 Color-Mood
Source: Pinterest

B. Character Design

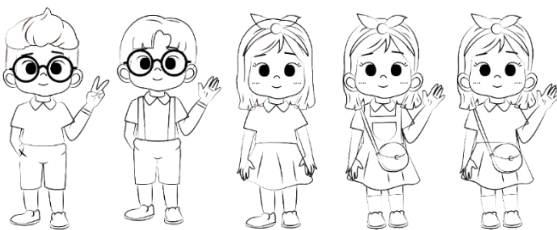


Figure 3 Sketch Character Design



Figure 4 Noura and Kalan's character design process

The main characters in the Funday card game are Kalan and Noura, they are both representative images of elementary school students. The writer takes the name Kalan from the Galician language which means warrior and strong person. While the name Noura comes from Arabic which means very fond of science and passionate. The characters Kalan and

Noura represent the characters of elementary school students who have a high competitive spirit, like to learn while playing and like to work in a group. The character design was carried out by the author based on the research results that have been attached in Chapter 2. The characters of Kalan and Noura are described according to elementary school students who wear red and white uniforms. Each character is equipped with its own characteristics. For Noura's character, she is depicted wearing a blue bag with a ribbon above her head. Meanwhile, Kalan's character is depicted wearing blue glasses, a tie on his uniform collar and a wrist watch. For the depiction of gestures that show the joy and enthusiasm of elementary school children.

C. Card Game Design



Figure 5 The first Funday card design

This card design was made by the author with a simple concept and using character gestures as the main design that is displayed from the card designs made. For the color selection itself, the author uses colors that are in accordance with child psychology. In this card game there are 52 cards divided into 4 point categories, namely: 36 green cards with +1 points, 10 blue cards with +2 points, 4 yellow cards with +4 points, and 2 red cards with help. or +5 if saved until the end of the game.

D. Funday's Logo



Figure 6 Funday's logo design process

The Funday logo was created with a simple, fun, and dynamic logo concept. These 3 keywords were chosen by the author because they describe the character of

elementary school children who are still innocent, fun, and active.

E. Video tutorials



Figure 7 Storyboard

Before entering into the production process, the author makes a storyboard in advance to detail what content he wants to discuss and explain. For the explanation process, voice over will be used which will be given an effect to make the sound look more cheerful and children's.

F. E-book



Figure 8 E-book design

The e-book that the author designed is intended for teachers to know the roles and benefits of playing Funday cards.

G. Funday Card Packaging



Figure 9 Blue Print Funday Packaging

This box is made with a size of 12.1cm x 8.2cm x 4.2cm. The picture above shows a blue print framework for box packaging. The Blue Print was made to make it easier for the printing process on the Funday box packaging.

H. Testing Process



Figure 10 Documentation during the Funday card trial process

On May 16, 2023, the author conducted a Funday card game trial for children in grades 2 and 4 of SDK 3 Bina Bakti, which the author has observed and discussed in chapter 2. In this trial, the author was given the opportunity for 1 lesson hour to be able to practice the game this in front of the class. During that 1 hour, children can play as many as 15 questions. Children really enjoy learning media like this and they can't wait to try this game in other subjects. However, from the results of these observations, the authors see that there are some deficiencies in the number of cards that have been tested. This deficiency can be seen from the too many +1 cards that make children on the one hand feel less motivated in playing and there is no guide for the teacher if playing this game only 15 questions or more.

I. Card Design Revision

Based on the results of observations, the authors reduced the number of +1 card designs and replaced them by increasing the number of +2, +4, and +5 cards. By increasing the number of cards +2, +4, and +5 children can enjoy Funday card games even more.



Figure 11 Card Design after testing

The number of each card after the design revision is : green color cards will be printed in 24 cards, blue cards will be printed into 16 cards, yellow cards will be printed into 8 cards, and red card will be printed into 4 cards

V. RESULT

The final design design is the final design design that the author did after conducting trials at SDK 3 Bina Bakti.

A. Card Game

From the results of observations and input, the author finally reduced the number of cards to 45 cards because in 1 lesson duration, students could only play 15 cards. And the number of sequential subjects that students experience during a week is 3 hours of the same subject. Apart from that, there are also changes in the visuals on the cards so that the visuals are not monotonous and varied.



Figure 12 Card game final design

After the visual changes to the cards, the author also changed the number of cards in each category to: green cards have 7 designs to be printed into 21 cards, blue cards have 6 designs to be printed to be 12 cards, yellow cards have 3 designs to be printed as 9 cards, and the red card has 1 design which will be printed into 3 cards.

B. E-book and Physical Book

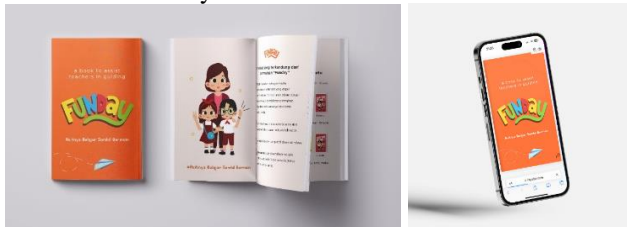


Figure 13 Display of physical books and e-book Funday

In the contents of this e-book, there has been an additional author regarding the number of cards that the teacher can play if the number of Funday cards is not played is 45 questions. In addition, this book will be made in 2 versions, namely: physical and digital versions.

C. Video Tutorials

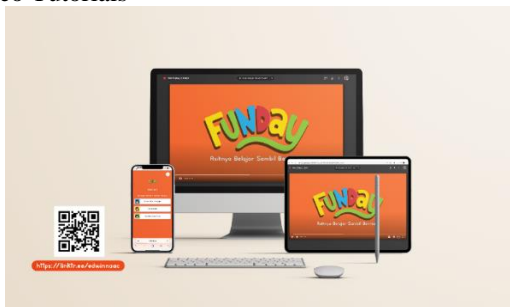


Figure 14 Display of video tutorial

This video tutorial can later be accessed by teachers to be shown to students before the Funday games start. To access this video, scan the barcode that is already available in the Funday packaging box. The duration of the video itself is 2 minutes 27 seconds.

D. Power Point Template



Figure 15 Power Point Template

This power point template was created by the author as a supporting medium for Funday games. This template is used by the teacher to display the questions that will be asked.

E. Funday Card Packaging



Figure 16 Funday Card Packaging

This packaging is made using greyboard and glossy art paper. On the box there is an identity for Funday games and important information related to how to play, e-books, etc. To read this information, the author includes it via the barcode link available on the inside of the box packaging.

VI. CONCLUSION

Face-to-face learning re-provided post-pandemic brings many obstacles that must be faced by teachers and parents. Wrong one obstacle faced at SDK 3 Bina Bakti Bandung is the condition of motivation reduced student learning. Where in the past when learning was done face to face, children feel cared for or supervised directly and clearly, so the level of desire to learn is relatively more awake. This is different from the post condition during a pandemic like today, awareness of the desire to learn has decreased. That effort can be done to increase the motivation to learn what students can do by using alternative learning media that is fun, interactive, and not boring. As a form of effort to increase student motivation, the author makes alternative learning media in the form of card games. The author chose the game this card because the card is the most simple media, easy to carry and easy to store. In the process of making learning media in the form of a game this card, the author will make 3 output media, namely: card games as media important in this game that will be supported with e-books and video tutorials. The video tutorial that the author makes will contain how to play the game this card, while the e-book serves as a medium that can be read by students sellers about the benefits and roles to play during this game going on. Lastly, the writer hopes that the media is in the form of card game learning This can increase student motivation in learning as well as being a medium fun, educative, and interactive learning.

REFERENCE

- [1] Febrita, Y. and Ulfah, M. (2019) *Peranan Media Pembelajaran untuk Meningkatkan Motivasi Belajar Siswa : Jurnal Diskusi Panel Nasional Pendidikan Matematika Pendidikan Dan Kebudayaan*, 5.
- [2] Mudlofir, A., & Rusydiyah, E. F. (2019). *Desain Pembelajaran Inovatif*. Depok : PT. RajaGrafindo.
- [3] Saluky. (2016). Pengembangan Bahan Ajar Matematika Berbasis WEB dengan Menggunakan WordPress. *Jurnal EduMa*, 5(1).
- [4] Sari, Y., Solehah, G. H., & Mashuri, M. T. (2018). Pengaruh Penggunaan media Permainan Kartu Uno Pada Materi Senyawa Hidrokarbon TERHADAP

Hasil Belajar siswa. *Jurnal Vidya Karya* , 33(1), 36.

DOI: <https://doi.org/10.20527/jvk.v33i1.5391>

- [5] Bankole, I. S. (2018). Deploying Card Games as Tools in Learning Chemistry Concepts in Nigerian Classrooms. *Journal of Chemical Society of Nigeria*, 43(3), 325–335.
- [6] Sayudi, D., Syakir, & Mujiyono. (2019). Ilustrasi Buku dengan Pendekatan Personifikatif Sebagai Media Pengenangan Kerusakan Lingkungan Hidup Bagi Anak. *Journal of Arts Education*, 6(2).
- [7] Santosa, Ngurah Adhi. Kajian Bentuk Dan Unsur Desain Pada Poster WWF “Be Responsible Out There”. *Jurnal STD Bali*. Vol. IV No. 1 ISSN 23556218. 2016.
- [8] Sihombing, Danton. (2017). Tipografi dalam Desain Grafis. Jakarta: PT Gramedia Pustaka Utama.
- [9] A. Rusdiana. (2018). Kewirausahaan Teori dan Praktik (2nd ed.). CV. Pustaka Setia.
- [10] Andikaningrum, L., Damayanti, Wi., & Dewi, C. (2014). Efektivitas E-Book Berbasis Multimedia Menggunakan Flip Book Maker sebagai Media Pembelajaran dalam Meningkatkan Keaktifan Belajar Siswa (Studi Kasus pada Mata Pelajaran TIK Kelas XI SMA Kristen Satya Wacana Salatiga) . *Jurnal Fakultas Teknologi Informasi*.
- [11] Widodo. 2016. “Pengantar E-Book”. Disampaikan dalam Bimbingan Teknik bagi Petugas Pengelola Perpustakaan Sekolah, yang diselenggarakan oleh Kantor Perpustakaan dan Kearsipan kabupaten Madiun, di Graha Eka Kapti Lantai II Pusat Pemerintahan Kabupaten Madiun di Mejayan. Diakses dalam <https://library.uns.ac.id/wpcontent/uploads/2016/04/EBOOK.pdf>.
- [12] Sabani, F. (2019). Perkembangan Anak-anak Selama Masa Sekolah Dasar (6-7 Tahun. *Jurnal Kependidikan*, 8(2), 91.
- [13] Mariyati, L. I. (2019). Inteligensi dan Kesiapan Anak Masuk Sekolah Dasar. *Jurnal Psikologi*, 1(1), 3. Huda, Miftahul. 2013. Model-model Pengajaran dan Pembelajaran. Yogyakarta: Pustaka Pelajar.
- [14] Huda, Miftahul. 2013. Model-model Pengajaran dan Pembelajaran. Yogyakarta: Pustaka Pelajar
- [15] Degeng, Nyoman, S. 2013. Ilmu Pembelajaran: Klasifikasi Variabel untuk Pengembangan Teori dan Penelitian. Bandung: Aras Media
- [16] El Khuluqo, I. (2017). *Belajar Dan Pembelajaran*. Yogyakarta: Pustaka Pembelajaran.
- [17] A.M., Sadirman. (2018). *Interaksi & Motivasi Belajar Mengajar*. Depok : Rajagrafindo Persada (Rajawali Pers).
- [18] Emda, A. (2017). Kedudukan motivasi Belajar Siswa dalam pembelajaran. *Jurnal Lantanida*, 5(2), 180. DOI : <https://doi.org/10.22373/lj.v5i2.2838>