# The implementation of graphic motion-based communication technology material learning videos for 3rd grade elementary students

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## ARTICLE INFO

## ABSTRACT

Motion graphic-based learning videos are a digital learning medium that clarifies material, increases student learning independence, can be accessed quickly, and is not limited in time. This study aimed to determine the implementation and feasibility of motion graphic-based learning videos on the material 'Communication Technology' for third-grade students of Luqmanul Hakim Integrated Islamic Elementary School, Bandung City. This research uses the Design and Development (D&D) model. This research went through five stages, namely (1) problem identification, (2) Determining goals and solutions, (3) Product design and development, (4) Trials, and (5) Communication. Data collection techniques used were interviews and questionnaires. Two experts are involved in this study: material and media experts. The sampling technique used is saturated sampling. Namely, the total number of grade 3 students is 24 students. The validation results by the material experts showed a percentage of 100% with the qualification "Very Good." In comparison, the results of the confirmation by the media experts showed a rate of 98%, and the effects of student assessments showed that the percentage showed 92.4% with the qualification "Very Good." Based on the results of validation by experts and reviews by teachers and students, it can be concluded that motion graphic-based learning videos are appropriate for use as learning media.

## INTRODUCTION

The rapid advancement of technology has a profound impact on human life, particularly in the realms of daily living and education (Jamun, 2018; Lestari, 2018; Maghfiroh, 2020). Technology plays a pivotal role in providing innovations that facilitate the achievement of educational objectives through instructional media. The ongoing COVID-19 pandemic in Indonesia, which has persisted since the beginning of 2020, has transformed traditionally face-to-face Teaching and Learning Activities (KBM) into online learning experiences. Consequently, educators must possess the skills to develop instructional media that are easily comprehensible by students, whether in face-to-face or

online learning settings. The role of instructional media is of paramount importance in supporting the learning process as it serves as a tool to clarify the subject matter, as a means to present challenges that students can investigate during their learning journey, and as a learning resource for students to engage with independently (Mustika, 2015).

One of the efforts to enhance students' self-directed learning is by utilizing digital learning media (Alperi, 2019; Maurisa & Rahayu, 2021; Permansah & Murwaningsih, 2018). Educators can harness various types of digital learning media to support learning activities for optimal outcomes, including interactive learning applications, augmented reality, virtual reality, game-based learning, and digital animation videos such as motion graphics. Primary school (SD) students often need help comprehending more complex learning contexts through conventional methods (Efendi et al., 2020). Moreover, elementary school students tend to be drawn to dynamic and highly engaging content driven by their innate curiosity (Sukarini & Manuaba, 2021). Consequently, digital learning media suitable for delivering instructional content in primary schools are motion graphic-based instructional videos. According to Betancourt (2012), a film theory expert, motion graphics is one of the animation media types that combines audio elements to convey a sense of movement, particularly in multimedia outputs (Bermana, 2020; Kharishma et al., 2018; Pratama et al., 2022; Soenarjo, 2014).

The issues encountered in this research, based on interviews with third-grade thematic teachers at the Luqmanul Hakim Integrated Islamic Elementary School in Bandung City during the online learning process, revolve around challenges related to internet connectivity and cognitive disparities among students. These mental disparities manifest as reduced student concentration during the learning process, necessitating repetitive questioning and reminders to ensure comprehension of the material being presented. Furthermore, these cognitive disparities are also attributed to a lack of student motivation and limited access to engaging informational resources. These issues align with the challenges identified in the studies conducted by Annisa et al. (2023), Samosir & Boiliu (2021), and Sainab et al. (2022) concerning online learning, including (a) inadequate communication tools such as smartphones and computers, and internet packages, (b) teachers not fully proficient in IT and facing limitations in monitoring students, (c) students struggling to maintain total concentration during learning, and (d) parents' lack of supervision over their children's learning, coupled with limited collaboration between teachers and parents.

Thematic learning is one of the concepts introduced in the 2013 Curriculum. The implementation of the 2013 Curriculum for Elementary Schools/Madrasah Ibtidaiyah, as outlined in Minister of Education and Culture Regulation No. 67 of 2013, employs an integrated thematic approach from grades I to IV. Therefore, thematic learning should be taught with the utmost care to ensure that students comprehend the materials presented and establish a foundational knowledge base for their subsequent academic journey. To optimize the learning process and outcomes in thematic learning, the use of engaging instructional media such as motion graphic-based instructional videos is essential. Saputra and Wibawa (2020) in their literature review, found that motion graphic-based instructional videos have a positive impact on student learning outcomes. Rusdiansyah and Leonard (2021) conducted a similar study in the field of mathematics. Their research indicated that students exhibit increased interest when using motion graphic-based Android learning media during the learning process. This enhances student engagement and facilitates a better understanding of the presented material. Additionally, students can access and learn from this medium at their convenience, resulting in overall test scores averaging 95%, categorized as "Excellent," in the trial assessments.

Another study conducted by Efendi et al. (2020) at SDN Pandanrejo 1 found that students needed more motivation during learning and struggled to comprehend the presented course material. This had a detrimental impact on students' learning outcomes, which were below the Minimum Competence Criteria (KKM). After implementing motion graphic-based instructional videos, the researchers conducted post-tests with 43 students from SDN Pandanrejo 1, and the results showed an achievement rate of 81.39% against the KKM. It can be concluded that the media developed by the researchers effectively improved student learning outcomes and falls into the category of practical instructional tools for teaching. Additionally, a study conducted by Sitio et al. (2022) aimed at developing Bible story-based instructional media for Sunday school children using motion graphics. Their research revealed that media created with motion graphics effectively conveyed content, easily

understandable, visually, and auditorily engagingly, thus enhancing the efficiency of direct learning time.

Nugraha (2022) developed digital media based on motion graphics for the subject of Social Studies in primary schools. Their research indicated that students needed motion graphics-based videos to access digital media. Their developmental findings concluded that motion graphic-based digital media is indeed suitable and effective as a digital learning tool. Furthermore, Rafif et al.'s (2021) study discovered that the media used for graphic design subjects needed to be more suboptimal. The prevailing media consisted of PowerPoint presentations or modules featuring extensive text without supporting images or animations. This led to students needing to pay more attention during the teacher's explanations, potentially affecting their long-term retention of the material. Motion graphic-based instructional videos were developed to address this issue, which captured the students' attention and facilitated a better understanding of the subject concepts. The movement graphic-based instructional videos produced was deemed highly suitable, with a suitability rating of 94.67%, falling into the "excellent" category.

Therefore, to utilize motion graphic-based instructional videos, it is essential to undergo a media feasibility assessment process to ensure their effectiveness in the learning process. The objectives of this research are to outline the stages in designing motion graphic-based instructional videos for the subject of Communication Technology for third-grade students at the Luqmanul Hakim Integrated Islamic Elementary School in Bandung City and assess the suitability of these videos for instructional purposes. I hope this research can be a reference source for creating high-quality and effective motion graphic-based instructional videos. The emphasis on the Communication Technology subject is intended to provide students with knowledge about the evolution of communication technology throughout history. The theoretical contribution of this research lies in expanding the scholarly understanding of developing motion graphic-based instructional media. On a practical level, the findings of this research can serve as a guide and reference for developing information technology instructional media through motion graphic videos.

## METHOD

This research employs the Design and Development (D&D) model, also known as the design and development model. It encompasses activities such as designing, developing, and evaluating the produced product with the intention of establishing empirical foundations for product development. The steps involved in this model include problem identification, setting objectives, product design and development, product testing, evaluation of test results, and communication of the test results. The research focuses on the 'Communication Technology' subject for third-grade students at the Luqmanul Hakim Integrated Islamic Elementary School in Bandung City during the second semester of the 2022 academic year, conducted in May 2022. The population in this study comprises all 24 third-grade students at the Luqmanul Hakim Integrated Islamic Elementary School in Bandung City. A saturated sampling technique was used, meaning the entire population was included as samples, resulting in a sample size of 24 students. The data collected for this research is primarily sourced from interviews and questionnaires administered to thematic teachers to obtain validation related to the created motion graphic video. In the questionnaire section, responses to questions are measured using a rating scale for analysis purposes. The scale used is a Likert scale with scores 1 (Strongly Disagree), 2 (Disagree), 3 (Slightly Disagree), 4 (Agree), and 5 (Strongly Agree).

For further analysis, researchers utilized the descriptive analysis method developed by Sugiyono (2019) which involves equation in Formula 1.

$$P = \frac{F}{N} \, x \, 100 \tag{1}$$

Description:
P: Percentage
F: Respondent Frequency
N: Number of data/samples

The results of these calculations are subsequently employed as the foundation for assessing the feasibility of implementing motion graphic-based instructional videos. The decision-making criteria for feasibility see Table 1.

Table 1. Likert Scale Feasibility Percentage

| Percentage | Description |
|---|---|
| 81%-100% | Excellent |
| 61%-80% | Good |
| 41%-60% | Satisfactory |
| 21%-40% | Poor |
| 1%-20% | Very Poor |

## RESULTS AND DISCUSSION

### Results

The research on the creation of motion graphic-based instructional videos aims to generate a product that can solve the challenges encountered during the learning process, particularly within the thematic subject of Communication Technology. Motion graphic-based instructional videos are designed for third-grade elementary school students, explicitly addressing the thematic content of Theme 7, "Technological Advancements," Subtheme 3, "Communication Technology." The present-day generation of children directly experiences the recent advancements in technology. It is essential to recognize that communication tools are not inherently easy to use in today's context; there is a process of technological development orchestrated by experts that has made them user-friendly. Therefore, it is crucial to deliver instructional content on the evolution of communication technology to students, enabling them to comprehend the historical development of technology from the past to the present.

Figure 1 is a visualization of the motion graphic-based instructional video on Communication Technology that has been tested with 24 students and two teachers in the third-grade class at Luqmanul Hakim Integrated Islamic Elementary School in Bandung City.



Figure 1. Visualization of motion graphic-based learning video

The results of the motion graphic-based instructional video trial on Communication Technology material, assessed by two expert teachers specializing in the subject matter and media, are presented in Table 3 and Table 4. The assessment results are as follows:

Table 3. Effects of Teacher Assessment of Content

| Question Codes | 1 | 2 | 3 | 4 | 5 | 6 | Total |
|---|---|---|---|---|---|---|---|
| Teacher 1 | 5 | 5 | 5 | 5 | 5 | 5 | 30 |
| Teacher 2 | 5 | 5 | 5 | 5 | 5 | 5 | 30 |
| **Total Score Obtained** | | | | | | | **60** |
| **Total Score Maximum** | | | | | | | **60** |

Source: Data processed 2022

Based on Table 3 above, we obtained the values F=60 and N=60. Thus, the percentage score using equation 1.

$$P = \frac{60}{60} \, x \, 100 = 100\%.$$

Based on these results, it can be concluded that the teacher's assessment of the content of the motion graphic-based instructional video is 100%. This score indicates that the content of the instructional video is "Excellent." Next, the media quality within the instructional video was evaluated. The results of this assessment are presented in Table 4.

Table 4. Results of Teacher Assessment of Media Quality

| Question Codes | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Teacher 1 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 43 |
| Teacher 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 45 |
| **Total Score Obtained** | | | | | | | | | | **88** |
| **Total Score Maximum** | | | | | | | | | | **90** |

Source: Data processed 2022

Based on Table 4 above, we obtained the values F=88 and N=90. Thus, the percentage score using equation 1 is as follows:

$$P = \frac{88}{90} \, x \, 100 = 98\%$$

Based on these results, it can be concluded that the teacher's assessment of the media quality in the motion graphic-based instructional video is 98%. This score indicates that the media quality in the instructional video is "Excellent." After validation by subject matter and media experts, the next step was to assess the students as the subjects of the motion graphic-based instructional video implementation. This assessment is presented in Table 5 and Table 6.

Table 5. Student Assessment Results Based on Score

| Question Codes | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Students** | 110 | 117 | 110 | 116 | 105 | 115 | 113 | 105 | 109 | 112 | 114 | 105 | 116 | 107 | 110 | 1664 |
| **Total Score Obtained** | | | | | | | | | | | | | | | | **1664** |
| **Total Score Maximum** | | | | | | | | | | | | | | | | **1800** |

Source: Data processed 2022

Based on Table 5 above, we obtained the values F=1664 and N=1800. Thus, the percentage is as follows:

$$P = \frac{1664}{1800} \, x \, 100 = 92.4\% \, .t$$

Table 6. Student Assessment Results Based on Percentage

| Question Codes | % | Question Codes | % | Question Codes | % | Question Codes | % |
|---|---|---|---|---|---|---|---|
| 1 | 91.6 | 5 | 87.5 | 9 | 90.8 | 13 | 96.6 |
| 2 | 97.5 | 6 | 95.8 | 10 | 93.3 | 14 | 89.2 |
| 3 | 91.6 | 7 | 94.1 | 11 | 95 | 15 | 91.6 |
| 4 | 96.6 | 8 | 87.5 | 12 | 87.5 | **Average** | **92.4** |

The results presented in Table 6 are the outcomes of calculations for each of the 15 questions using equation 1. Therefore, the average score is needed to draw conclusions from this assessment. Based on the data in Table 6, the total percentage is 1.386.2%, and the total number of questions is 15. Consequently, the average score is calculated as follows:

$$Average = \frac{1.386.2\%}{15} = 92.4\%$$

Based on these results, it can be concluded that the student assessment of the motion graphic-based instructional video is 92.4%. This score indicates that the media quality in the instructional video is "Excellent."

**Discussion**

Creating motion graphic-based instructional videos for the thematic subject in the third-grade class at Luqmanul Hakim Integrated Islamic Elementary School in Bandung has proven to be highly beneficial in learning. This assertion is substantiated by the research findings, which indicate that both subject matter experts and media experts assessed the content of the instructional video at 100%, and the evaluation of media quality scored 98%. These scores collectively signify that the quality of the video presented is "Excellent," according to expert assessments. Furthermore, after testing the video with students, the implementation assessment yielded a score of 92.4%, categorizing it as "Excellent." The examinations conducted by teachers in the subject matter and media fields and by students collectively indicate that the motion graphic-based instructional video implemented in the third-grade class at Luqmanul Hakim Integrated Islamic Elementary School in Bandung is suitable for further development and implementation.

The success of the learning process using motion graphic-based instructional media is more comprehensive than this research. The findings of this study align with the research conducted by Rusdiansyah and Leonard (2021) in mathematics. Their study showed that using motion graphic-based instructional media increased students' interest in learning, with a trial implementation scoring 95% and falling under the "Excellent" category. Furthermore, research conducted by Rafif et al. (2021) in graphic design found that using motion graphic-based instructional media made students more interested and enhanced their understanding of the subject's concepts. The movement graphic-based instructional video they developed received a feasibility rating of 94.67%, categorizing it as "Excellent." Similar research conducted by Nugraha (2022) on social studies material in elementary schools found that digital media based on motion graphics is suitable and effective as a digital learning media. Additionally, research conducted by Sari (2021) demonstrated that the application of motion graphic animation in introducing Garuda Pancasila improved students' learning outcomes.

Motion graphic-based instructional media implementation extends beyond elementary schools and is also carried out at the higher education and secondary education levels. Sutrisman (2022) examined the application of motion graphics as Augmented Reality learning media. The study's findings revealed that the animated motion graphic videos provided easily comprehensible information, making them suitable for instructional purposes. Research conducted by Nugrohadi & Susilana (2018) found that implementing motion-visual instructional media effectively improved the cognitive learning outcomes of junior high school students in the subject of Social Studies. Additionally, Tertiasusman and Setyawan (2022) proved that using motion graphics in videos is effective.

## CONCLUSION

The assessments conducted by subject matter experts, media experts, and students collectively indicate that the motion graphic-based instructional video implemented in the third-grade class at Luqmanul Hakim Integrated Islamic Elementary School in Bandung is suitable for further development and implementation. This conclusion is supported by the findings of this research, which reveal that the expert's assessment of the content of the instructional video is 100%, and the assessment of media quality is 98%. Both of these scores indicate that the quality of the presented video is "Excellent," according to expert evaluations. Furthermore, after being tested with students, the implementation assessment yielded a score of 92.4%, falling into the "Excellent" category. The results of this research have implications for expanding scholarly insights into the development of motion graphic-based instructional media. On a practical level, the findings can serve as a reference and guide for developing information technology instructional media through motion graphic videos in elementary schools.

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