Jurnal Teknologi Informasi dan Pendidikan
Volume 15, No. 1, Maret 2022
https://doi.org/10.24036/tip.v15i1

P.ISSN: 2086 – 4981
E.ISSN: 2620 – 6390
tip.ppj.unp.id

Validity Test of Motion Graphics Media as A Wide Area Network Learning Media

Panyahuti[1*]✉
[1]Department of Informatics Engineering, Institut Teknologi Pagaralam, Indonesia
**Corresponding Author: p.matondang@gmail.com*

Article Information

Article history:

No. 572
Rec. March 28, 2022
Rev. April 07, 2022
Acc. April 15, 2022
Pub. April 25, 2022
Page. 21 – 27

Keywords:

- *Motion Graphics*
- *Wide Area Network*
- *Validity Test*
- *Learning Media*

ABSTRACT

The world of education currently uses many benefits in the form of technology such as computer equipment to assist in delivering material. One of them is motion graphics video. The aims of this study are to (1) Determine the validity of motion graphics video as a learning medium for Wide Area Network materials. (2) Know the practicality of video motion graphics as a learning medium in Wide Area Network materials. This type of research is Research and Development (R&D) with a Four D (4D) approach model consisting of Define, Design, Develop, and Disseminate. From the study results, it can be said that (1) video motion graphics on Wide Area Network materials that have been developed meet the criteria. The data from the video motion graphics validity test results show the aiken'V value in the expert test results obtained an average media validity in the display aspect of 0.807 in the correct category, the average media validity value in the format aspect media of 0.83 in the right type, the moderate validity of the material on the aspect of media presentation is 0.817 in the correct category. The results of the development of motion graphic videos have been suitable for use or valid as learning media

1. INTRODUCTION

The computer network is not something new this time. Almost in every company, college, and school, there is a computer network to facilitate the flow of information in the area. Along with the development of computer networks globally, many schools have sprung up that teach about computer network engineering (TKJ), primarily vocational high schools. Various materials about networks are trained more precisely than in other public schools, such as wiring, network infrastructure devices, network topology, types of networks, basic network concepts, routing, etc. In delivering the material, not everything can be appropriately conveyed and optimally. There must be shortcomings or obstacles in

every delivery of the material. For example, it isn't easy to understand when learning routing about how routers work because the way routers work cannot be seen with the eyes of tools, so the learning is abstract.

The use of learning media can be utilized in conveying information and materials by the teacher to attract more students' interest in learning. The learning process can run well, and the learning objectives can be implemented [1],[2]. Then Purwono [3] explains that learning media has an essential role in determining the quality of the teaching and learning process. Learning media can also make learning more exciting and fun. Learning media are all things that can stimulate thoughts, channel feelings, channel message, and students' willingness to acquire knowledge. The author concludes that learning media is a tool that conveys learning material. So, the tools in question can be pictures, videos, electronic devices, and sound that can facilitate the delivery of information and learning media to students.

Learning media contains messages as learning stimulants and can foster student learning motivation in achieving learning goals [4], [5], [6]. Learning media is used terms to help the student's learning process in learning so that it is expected to improve the learning outcomes achieved. The benefits of learning media, namely the way the delivery of learning material becomes more interactive, learning is more attractive, learning time can be shortened, the quality of learning outcomes increases, learning can be done anytime and anywhere, student attitudes towards what is being learned and the learning process is improved, and the role of teachers can change to something more positive. Learning media can be done optimally if the teacher can use and choose the media according to its purpose and function. The use of animation media can increase students' activities, interests, and learning outcomes [7], [8]". One of the animation media is motion graphics. In this case, researchers carry out teaching and learning activities by utilizing video motion graphics media.

Motion graphics are an alternative to video shows that are now widely used in various media, such as the internet, and even delivering learning materials. Motion graphics are pieces of time-based visual media that combine film and graphic design[9]. Motion graphics combine video and animation to create the illusion of motion or transformation [10], [11]. Animation is one form of moving visuals that can be useful for explaining material that is difficult to convey conventionally [12],[13]. Motion graphics combine graphic images from video and animation that create the illusion of motion or transformation [14] [15]. Motion graphics contain motion graphics that include design elements such as shape, appearance, size, direction, and texture in them, which are intentionally moved or given movement so that they look dynamic and are displayed through audio-visual media [16].

The researchers' observations found that, in the learning process, teachers still use teaching materials in the form of printed books. In addition, teachers also use videos as teaching materials. Some of these videos were developed by teachers, and some were adopted from other people's videos via youtube and videos available online. The videos

P.ISSN: 2086 – 4981
E.ISSN: 2620 – 6390
tip.ppj.unp.ac.id

made by the teacher are still monotonous, so the learning process is less attractive. Teachers should make video teaching materials that are more interactive according to students' characteristics in their class to attract students' attention to learning. The importance of video motion graphics for abstract learning so that accurate visualization is needed to explain to students the content of the material on a broad-based network. By using video motion graphics, students catch learning faster, and it is easier to understand the material presented.

Based on the explanation above, researchers are interested in developing learning media packaged in one package in the form of material, video animation/motion graphics which aims to be used as valuable teaching materials in the learning process so that students have an interest in learning the material, using motion video. In graphics, students can more easily capture the content of learning messages. Broad-based network material is delivered in motion graphics video that displays moving images with audio combined and visually presents phenomena. That way, students will be more interested in carrying out learning activities.

2. RESEARCH METHOD

The development model used in this study is the Four D (4D) model. This 4D model consists of four stages of development: definition, design, development, distribution, or adaptation to the 4D model: characterization, design, development, and distribution. The first stage is the discovery (definition) phase, which includes background analysis and problem-specific steps [17][14]. The second phase is the design phase. The learning tools are designed in this phase, and the product's initial form (prototype) is created. The third stage is development, which includes product verification. This stage leads to product development and is carried out in two steps: expert evaluation and revision and development testing. The fourth phase is the dissemination phase. This is done to promote the development product so that it can be accepted by either an individual, a group, or a user of the system. The data analysis technique used for validation on this learning medium uses the AikensV formula. The formula for calculating the Aiken-V validity factor is:

$$V = \Sigma s/[n(c-1)] \quad (1)$$

s = r-1o
1o = Low validity score (in this case = 1)
c = The highest validity rating score (in this case = 4)
r = Number given by an evaluator
n = Number of Validators (Evaluators).

Jurnal Teknologi Informasi dan Pendidikan
Volume 15, No. 1, Maret 2022
https://doi.org/10.24036/tip.v15i1

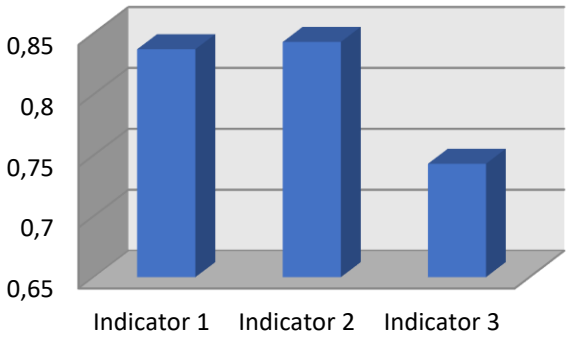
3. RESULTS AND DISCUSSION

The data from the video motion graphics validity test results in the following figure show the aiken'V value in the expert test results obtained an average media validity on the display aspect of 0.807 in the correct category, the average value of media validity on the Media Format aspect of 0.83 invalid types, the average value of material validity in the element of media presentation is 0.817 in the correct category. The results of the development of motion graphics videos have been feasible to use or valid as learning media. Display Aspect Validity

The validator chosen to validate the display aspect of this motion graphics video media is an expert in learning media. The results of the assessment obtained from the media validator regarding whether or not the learning media are valid can be seen in the following table:

Table 1. Display Aspect Validity

Indicator	Aiken's V	Description
Indicator 1	0,837	Valid
Indicator 2	0,843	Valid
Indicator 3	0,743	Valid
average	0,807	Valid



The chart shows that the evaluation of the display surface of the motion graphics video is practical with the V value of AIken 0.807. In the first indicator, the Aikens V value is 0.837, and there are good categories. The second indicator with an Aiken V score of 0.843 in the correct type, and the third indicator with an Aiken V score of 0.743 in the right category, so the average score of the display aspect score of the motion graphics video is 0.807.

P.ISSN: 2086 – 4981
E.ISSN: 2620 – 6390
tip.ppj.unp.ac.id

3.1. Media Format Validity

At this validation stage, the selected validator is a validator who is competent in learning media. The validation results regarding the media format can be seen in the following table:

Table 2. Media Format Validity

Indicator	Aiken's V	Description
Navigation	0,87	Valid
Convenience	0,82	Valid
text	0,8	Valid
Appearance	0,83	Valid
average	0,83	Valid

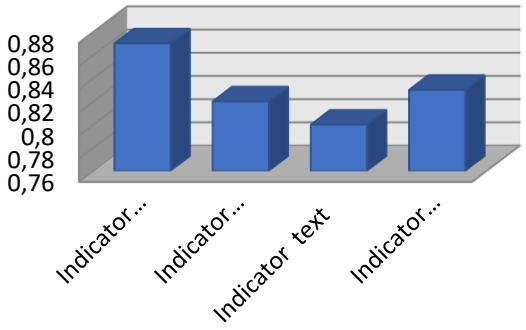


Figure 2. Media Format Validity

From the above data, it can be said that the design rating of motion graphics video is valid with AIken's V value of 0.83. For the first metric, the Aikens V value is 0.87, and there are correct categories. The second indicator with the Aikens V value is 0.82 in the right type. The needle with the Aikens V value is 0.8 in the right hand. The fourth indicator with the Aikens V value is 0.83 in the excellent indicator.

Media Presentation Validation

At the validation stage of media presentation, this motion graphics video media underwent several improvements based on suggestions from the validator, which can be seen in the following table :

Table 3. Media Presentation Validation

Indicator	Aiken's V	Description
Indicator 1	0,834	Valid
Indicator 2	0,8	Valid
average	0,817	Valid

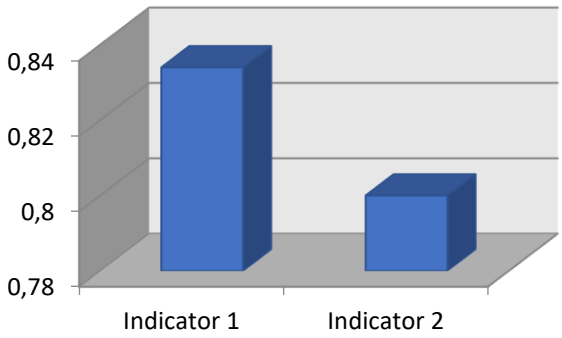


Figure 3. Media Presentation Validation

This chart shows that the assessment of the presentation of motion graphics video media is valid with the AIken's V score of 0.817. The first indicator, Aiken's V score, is 0.834 with a suitable category, and the second indicator, Aiken's V, is 0.8 with the right type. Based on the suggestions given by the validator, the media was revised, so that valid and appropriate learning media were obtained.

CONCLUSION

The form of development of the resulting motion graphics video media is a learning video whose contents consist of Wide Area Network learning materials and the exercises in the motion graphics video. The motion graphics video media developed are based on basic Network subjects' competency standards and essential competencies. The designed video motion graphics learning media is valid, practical, and effective to be used as an alternative learning media that can be used in essential network learning. Teachers and students are encouraged to continue to use these media to support schools in improving their learning outcomes and facilitating the use of learning tools that teachers need. In addition, it is also recommended for schools to make more use of technology and information and take advantage of the infrastructure that has been provided.

REFERENCES

[1] S. Adam, "Pemanfaatan media pembelajaran berbasis teknologi informasi bagi siswa kelas X SMA Ananda Batam," Comput. Based Inf. Syst. J., vol. 3, no. 2, 2015.
[2] I. D. Putu Nyeneng, A. Rahman Riyanda, and K. Herlina, "Feasibility Test for Android-Based Mobile Learning on High School Content," J. Pembelajaran Fis., 2019.
[3] S. Adam et al., "Penggunaan media audio-visual pada mata pelajaran ilmu pengetahuan alam di Sekolah Menengah Pertama Negeri 1 Pacitan," J. Teknol. Inf. dan Pendidik., vol. 2, no. 3, pp. 1940–1945, 2021.

P.ISSN: 2086 – 4981
E.ISSN: 2620 – 6390
tip.ppj.unp.ac.id

[4] F. Ariyani, G. E. Putrawan, A. R. Riyanda, A. R. Idris, L. Misliani, and R. Perdana, "Technology and minority language: an Android-based dictionary development for the Lampung language maintenance in Indonesia," Tapuya Lat. Am. Sci. Technol. Soc., vol. 5, no. 1, p. 2015088, 2022.
[5] S. Suryadi, "Peranan perkembangan teknologi informasi dan komunikasi dalam kegiatan pembelajaran dan perkembangan dunia pendidikan," Informatika, vol. 3, no. 3, pp. 9–19, 2015.
[6] A. R. Riyanda et al., "Augmented Reality Technology for 3D Photoelectric Simulation," J. Teknol. Inf. dan Pendidik., vol. 14, no. 3, pp. 35–40, 2021.
[7] M. A. Sunami and A. Aslam, "Pengaruh penggunaan media pembelajaran video animasi berbasis zoom meeting terhadap minat dan hasil belajar IPA siswa sekolah dasar," J. Basicedu, vol. 5, no. 4, pp. 1940–1945, 2021.
[8] A. Afrina, N. H. Adi, and others, "A Design of Practice Activities Cloudstorage, Promotion and Protocol," J. Teknol. Inf. dan Pendidik., vol. 14, no. 2, pp. 151–157, 2021.
[9] S. Chakraborty and M. G. Simoes, "Experimental evaluation of active filtering in a single-phase high-frequency AC microgrid," IEEE Trans. energy Convers., vol. 24, no. 3, pp. 673–682, 2009.
[10] S. A. Hosseini, H. A. Abyaneh, S. H. H. Sadeghi, F. Razavi, and A. Nasiri, "An overview of microgrid protection methods and the factors involved," Renew. Sustain. Energy Rev., vol. 64, pp. 174–186, 2016.
[11] A. T. Devega, N. H. Adi, M. A. Mawaddah, H. A. Shiddiqi, and others, "Design and Analysis of the Motion Graphic Publication Program Implementation as a Promotional Media for Batam TV," in 8th International Conference on Technical and Vocational Education and Training (ICTVET 2021), 2021, pp. 85–91.
[12] S. Ariyati and T. Misriati, "Perancangan animasi interaktif pembelajaran asmaul husna," J. Tek. Komput., vol. 2, no. 1, pp. 116–121, 2016.
[13] M. Algiffari, "Perancangan motion graphic (bumper in) dan video dokumenter permainan tradisional Jawa Barat (analisis deskriptif permainan tradisional pada Sanggar Seni Tikukur Majalengka)," J. Sketsa, vol. 2, no. 1, 2015.
[14] F. F. Ranuharja, I. P. Dewi, others, G. Ambiyar, A. D. S. Fadhilah, and Y. Indarta, "Feasibility Test Assessment of LENTERA as Learning Source Media," Res. Tech. Vocat. Educ. Train., vol. 1, no. 1, pp. 41–49, 2022.
[15] S. Chen, N. Tai, C. Fan, J. Liu, and S. Hong, "Sequence-component-based current differential protection for transmission lines connected with IIGs," IET Gener. Transm. & Distrib., vol. 12, no. 12, pp. 3086–3096, 2018.
[16] G. Ganefri, F. Prasetya, F. Ranuharja, B. R. Fajri, and A. D. Samala, "DEVELOPMENT OF DIGITAL MULTIMEDIA LEARNING CONTENT MINI SERVER LENTERA," J. Teknol. Inf. dan Pendidik., 2021.
[17] Sugiyono, Metodologi Penelitian Kuantitatif, Kualitatif, dan R&D. 2016.