



# Development of Learning Media Using the Powtoon Application for Effective Communication Courses

Asharul Fahyudi<sup>1\*</sup>, Zefan Adiputra Golo<sup>1</sup>, Elise Garmelia<sup>1</sup>

<sup>1</sup>Semarang Ministry of Health Polytechnic, Medical Record and Health Information Department, Semarang, Indonesia

Received: October 30, 2022  
Revised: December 20, 2022  
Accepted: December 24, 2022  
Published: December 31, 2022

Corresponding Author:  
Asharul Fahyudi  
[4sharul@gmail.com](mailto:4sharul@gmail.com)

© 2022 The Authors. This open access article is distributed under a (CC-BY License)



DOI: [10.29303/jppipa.v8i6.2495](https://doi.org/10.29303/jppipa.v8i6.2495)

**Abstract:** Communication between health workers and patients is still a major problem in health services. Learning media is needed that can be used by students of medical records and health information to improve effective communication. The purpose of this research is to develop effective communication learning video media using the Powtoon application. This research method uses the ADDIE product development model. Validation of the development of learning video media through learning media expert tests and expert tests for Effective Communication subject matter. Test the effectiveness of learning media through pre-test and post-test on 70 students. The results of the learning media expert test from 4 learning videos averaged 95.42% (very feasible) and the lecture material test from Effective Communication course lecturers averaged 95.90 (very feasible). The results of the analysis of the pre-test average value of 78 and the post-test average value of 92.71. Through Paired t-test: Result = 0.000. Meaning: There is a difference between before and after treatment (learning using videos). Reason: The p-value < 0.05 (95% confidence).

**Keywords:** Learning videos; Effective communication; Medical record

## Introduction

The development of Information Technology (IT) and communication in Indonesia has a long history. Developments in the field of information technology go hand in hand with human civilization from time to time. According to D'Aloisio (1998) in the 90s, the concept of multimedia is an integration of more than one media, text, graphics, sound, video, and animation, where students can control the delivery of various media elements (Hasrah, 2019).

The use of Information Technology as a learning medium is already a requirement. Even though the design of IT-based media requires special expertise, it does not mean that the media is avoided and abandoned. IT-based learning media can be in the form of the internet, intranet, mobile phone, and CD Room/Flash Disk (Muhson, 2010).

Good and correct communication is an important point that every health worker must have (Arumsari et al., 2017). Through communication, it is hoped that

people can understand what the sender of the message is saying properly and correctly. The basic concept of communication itself is an idea and design that is structured so that a process of conveying information or messages from one person to another can be structured and can be easily understood and can provide input or feedback that is good and as expected (Nisak, 2020).

Effective communication is highly dependent on one's skills in sending and receiving messages (Indrajaya, 2015). Effective communication allows one to exchange information, ideas, beliefs, feelings, and attitudes between two people or groups whose results are in accordance with expectations (Sari, 2016).

Health is a very important aspect in human life, as evidenced by the various ways people do to get excellent health services. Communication in the hospital environment is believed to be the main capital for improving the quality of services that will be offered to consumers (Setiyani, 2020).

If there is a misunderstanding or interpretation of the contents of the message conveyed, it can be said that

the communication that has occurred is ineffective (Sari, 2016). Hardjana's opinion, (2003) process and the similarity of meaning or perception are very important in the communication process (Hele & Maela, 2018).

Decree of the Minister of Health of the Republic of Indonesia Number: HK.01.07/Menkes/312/2020 concerning Professional Standards for Medical Recording and Health Information (PMIK) PMIK staff must have seven basic competencies, one of which is effective communication competency (Setiyani, 2020).

Most of the learning content in lectures is still explained orally, so there is a need for the development of multimedia in the form of interactive learning media that utilizes audio-visual elements. The results of research by Susanto (2018) from 142 student as respondents tend to choose a combined video as the video that gives the most student interest in lectures via Youtube.

The use of inappropriate methods can lead to boredom, lack of understanding, and monotony so students are less motivated to learn. Learning complex procedure texts which usually only use a scientific approach has indeed made students active but less able to develop students' social skills which can later be useful in social life (Dewi et al., 2018).

Learning media as one of the components in the teaching and learning process is very necessary, considering that the position of this media is not just a teaching aid, but an integral part of learning. Apart from being able to replace some teachers who present material (message distributors), the media also has unique potential, which can help students learn (Pertiwi & Irfan, 2021).

Video is an electronic signal-processing technology including images, motion, and sound (Laksono et al., 2021). Video is an audio-visual medium that describes objects moving together. Videos can provide information, explain processes, explain complex concepts, teach skills, and influence attitudes (Alamsyah et al., 2018).

According to Setiyani (2020) argue that it is important for health professionals to have well-developed communication skills, speak clearly and fluently, use patient-friendly terminology, and be able to listen to patients. Pawlikowska (2010) also explained that good communication skills from health professionals have also been shown to be associated with better patient empowerment (Skarbaliene et al., 2019).

Effective communication will provide clear and understandable information to patients, patient families, and other medical personnel so that it will reduce errors in providing information and can increase the degree of patient safety through effective interpersonal relationships (Syahputri, 2019).

Seeing the importance of effective communication for health workers, D-III students of the Medical Record and Health Information Study Program (RMIK) of the Semarang Ministry of Health Polytechnic need to be provided with effective communication lecture material from various good sources as study references. One of the existing learning resources is the Effective Communication course books. Video media for learning effective communication in health service environments such as hospitals, health centers, or clinics is something new and has not been made by many lecturers.

Patient satisfaction is one of the first indicators of a hospital's standards and is a measure of service quality. Low patient satisfaction will have an impact on hospital visits and employee attitudes towards patients will also have an impact on patient satisfaction where patient needs will increase from time to time, as well as demands for the quality of services provided (Qamarina and Sari, 2021).

Communicating effectively means that communicators and communicants both have the same understanding of a message. Therefore, in foreign languages, people call it "*the communication is in tune*", where the communicators and communicants involved in the communication both understand the message being communicated (Zuwirna, 2016).

There are several types of free online video editing applications. One of the free online video editing applications that can be accessed at any time is the Powtoon application which can be accessed through the website <https://www.powtoon.com>. The Powtoon application is an online-based video animation tool that is quite easy to use and can be used by lecturers and students to facilitate lectures (Qurrotaini et al., 2020).

## Method

This research is development research using the ADDIE product development model. Tegeh and Kirna (2013) argued that the selection of the ADDIE model was based on the consideration that this model was developed systematically and is based on a theoretical foundation of learning design (Wisada et al., 2019). The ADDIE model consists of five steps, namely: analysis, design, development, implementation, and evaluation.

Validation of the development of learning videos through expert tests, namely learning media experts and experts in Effective Communication subject matter. Test the effectiveness of learning media through pre-test and post-test on 70 students of the RMIK D III Study Program who are taking the Effective Communication course.

The data analysis technique used in this study is a quantitative data analysis technique. The valuation data obtained from the validator was analyzed descriptively and qualitatively and used as a reference for revising the

product, so as to produce a feasible product. According to Arikunto (2009: 35), the feasibility category of learning media is based on criteria such as table 1 (Ernawati, 2017).

**Table 1.** Media Eligibility Criteria

Score in percent (%)	Eligibility Category
< 21	Very Ineligible
21 - 40	Not Eligible
41 - 60	Enough Eligible
61 - 80	Eligible
81 - 100	Very Eligible

## Result and Discussion

The results of the research based on the ADDIE model consist of five-step, namely:

### Analyze

Information gathering and literature study are carried out by conducting a literature review on learning, learning media, and Powtoon to study the theoretical foundations that underlie the development of interactive video media as a learning tool. (Laksono et al., 2021).

The results of research by Garmelia et al. (2021) show that there are 10 people (21.7% PJRM) who have low work effectiveness. The Effective Communication competency area is in the capable category of 60.9% (Garmelia et al., 2021).

Activities in the analysis phase include job analysis, analysis of student characteristics, and needs analysis. The work analysis of the results of observations that have been carried out shows that the lecture method is still used by lecturers and only uses books as teaching materials where little of the material presented is not understood by students.

Analysis of the characteristics of level II students of the D-III Study Program RMIK Poltekkes Kemenkes Semarang in 2022 a total of 143 students. The age range of students is 17-20 years.

Needs analysis based on data from job analysis and student characteristics obtained, understanding of the material is the main problem, it is necessary to have media that make learning fun and can help improve understanding of the material. The media is embodied in effective communication learning video media.

### Design

According to Reiser (2002), learning design is in the form of a series of procedures as a system for developing education and training programs in a consistent and tested manner. Learning design is also a complicated but creative, active, and repetitive process. Reiser's definition means a system, training, namely education in organizations, as well as processes that are tested and

can be reviewed for their application (Nurdyansyah, 2019).

The Effective Communication course (RMIK207) consists of 2 credits according to the 2019 curriculum at the D-III RMIK Poltekkes Kemenkes Semarang, there are 6 study materials. Of the 6 study materials, 4 lecture materials were selected to design learning videos needed by students in understanding material that was difficult to understand. The chosen lecture material is the theme of the material:

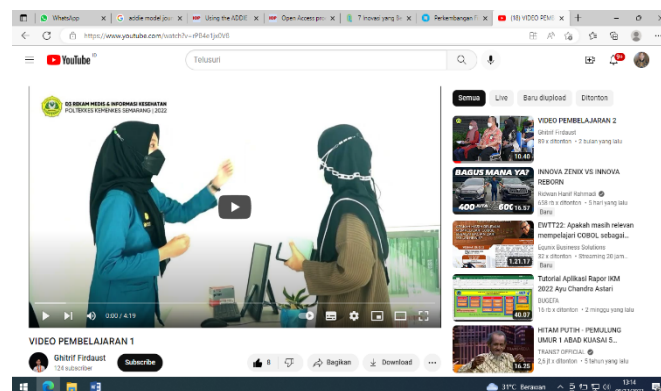
- 1) Communication in social contexts and cultural backgrounds.
- 2) Mass communication and the use of new media as a new medium of communication.
- 3) Communication in the context of health services.
- 4) Communication in the context of interpersonal relationships.

From the 4 lecture materials that have been chosen as learning themes/topics, then a video concept is created to determine the shooting location, video duration, and target audience. Continue to create a storyboard by making a video scenario, the characters involved, how the dialogue is going, how to shoot and what properties will be used.

### Development

The development stage is a video production activity from the continuation of the process of determining the theme, video concept, and storyboard that has been designed. Software that will be used in the production of learning video media for Effective Communication courses uses the Powtoon application as an online-based video animation tool and the CapCut application as supporting software for video editing. The video results that have been developed from the 4 themes of lecture material can be viewed at:

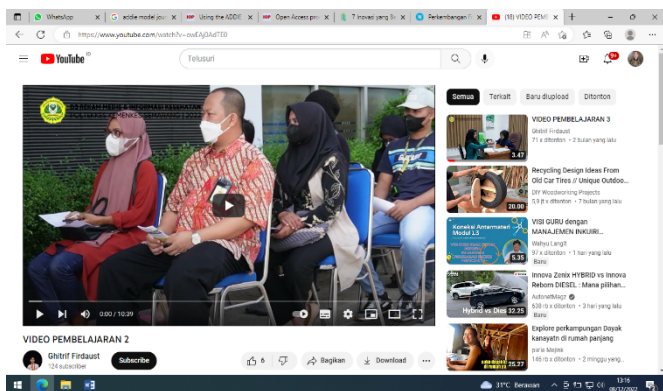
*Video material:* Communication in a social context and cultural background can be viewed via the link: <https://youtu.be/rPB4e1jx0V8>.



**Figure 1.** Communication in a Social and Cultural Context Cultural Background.

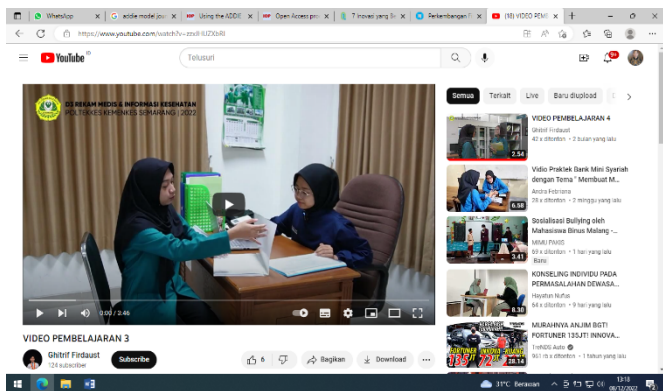


*Video material:* Mass communication and the use of new media as a new communication medium, can be viewed via the YouTube link below: <https://youtu.be/owEAj0AdTE0>.



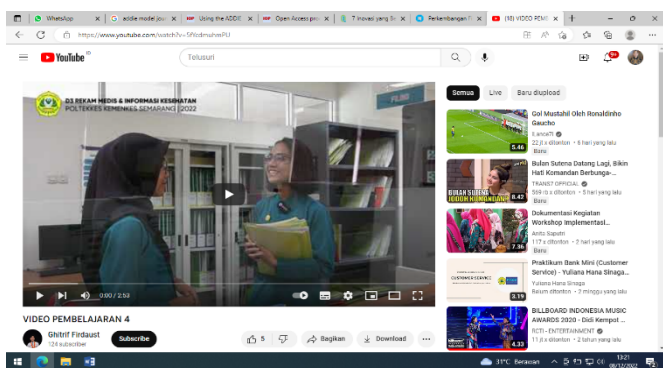
**Figure 2.** Mass communication and the use of new media as a new communication medium.

*Video material:* Communication in the context of health services, can be viewed via the YouTube link: <https://youtu.be/zzxJHUZXbRI>.



**Figure 3.** Communication in the context of health services.

*Video material:* Communication in the context of interpersonal relationships, can be viewed via the YouTube link: <https://youtu.be/5fYcdmuhMPU>.



**Figure 4.** Communication in the context of interpersonal relationships.

The results of this validation test by learning media experts and material experts for the Effective Communication course were in the form of responses and assessments, then the results of the data obtained were analyzed and product revisions were carried out according to the suggestions of experts. The results of the validation test for the development of instructional video media in more detail can be seen in table 2.

**Table 2.** Validation Results of Test Subject Expert

Test	Validation Results %	Information
Learning Media		
Video Material 1	93.50	Very Eligible
Video Material 2	96.80	Very Eligible
Video Material 3	95.80	Very Eligible
Video Material 4	95.60	Very Eligible
Average value	95.42	Very Eligible
Expert Lecture Material		
Video Material 1	94.60	Very Eligible
Video Material 2	95.50	Very Eligible
Video Material 3	96.70	Very Eligible
Video Material 4	96.80	Very Eligible
Average value	95.90	Very Eligible

*Implementation*

The implementation or application stage is carried out after the material learning video media has been validated by media experts and material experts. Furthermore, learning video media was tested on level II students who took Effective Communication courses as many as 143 students.

At the trial stage, it begins with giving pre-tests to students at the beginning of lectures, then when giving lecture material students are given video material for learning Effective Communication. Then at the end of the lecture session, students are given a post-test. Based on the results of the pre-test and post-test, only 70 students answered in full the 4-course materials that were tested with the characteristics of the respondents as shown in Table 3.

**Table 3.** Characteristics of Respondents

Variable	Frequency	Percent
Gender		
Male	11	15.7
Female	59	84.3
Total	70	100
Class		
2A	8	11.4
2B	13	18.6
2C	49	70.0
Total	70	100

**Table 4.** T test results

Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference		t	df	p
		Lower	Upper			
13.802	1.650	-18.005	-11.423	-8.920	69	0.000

Test results obtained Sig. (2-tailed): Probability value/p value Paired t test: Result = 0.000. Meaning: There is a difference between before and after treatment (learning using video). Reason: The p-value < 0.05 (95% confidence).

*Evaluation*

Evaluation of learning media is a process of assessing learning media based on predetermined criteria or objectives with the aim of making decisions on the object being evaluated (Warsita, 2019). At the evaluation stage, the researcher compared the results obtained at the trial stage of students, media experts, and experts on video media material for learning Effective Communication courses. Also, analyze the data obtained from students to find out opinions or responses regarding the video products made.

Learning media according to the Association for Educational Communications and Technology (AECT) is anything that is used to convey messages. Learning media is anything that is used to convey messages and can stimulate students' thoughts, feelings, concerns, and willingness to learn. Products in relation to education and learning can be in the form of curriculum, learning models, management systems, student worksheets, and learning media (Tegeh & Kirna, 2013).

This statement was also supported by Yudasmara and Purnami who argued that the media played a very important role as carriers of information from sources (lecturers) to recipients (students). The use of appropriate and interesting media will foster student interest, curiosity, motivation, and creativity, so it is very important to optimize the achievement of learning objectives (Yudasmara & Purnami, 2015).

Learning with the use of multimedia is essentially a process to be able to solve problems. This is necessary in the ability to analyze, find ways to overcome them and try the solutions that have been formulated (Marjuni & Harun, 2019). The development of effective communication learning video media is made according to the goals and objectives of communicating in hospitals. In a hospital, there are various professions; namely Medicine (General Practitioner, Specialist Doctor), Nursing (Clinical Nurse, Midwife), and other professions (Pharmacy, Analyst, Radiographer, PMIK, and others) that have the habits and background of each profession. In serving patients, each profession cannot work alone but must work together. To be able to work

together, good communication is needed among members of the health workers.

The quality of instructional video media, according to a review from learning media experts on Video Material 1: Communication in social contexts and cultural backgrounds can clarify material and a good picture, as evidenced by a Very Eligible rating (93.50%). Video Material 2: Mass communication and the use of new media as a new communication medium, get the percentage of Very Feasible (95.80%). Video Material 3: Communication in the context of health services, getting a Very Feasible percentage (95.60%). Video Material 4: Communication in the context of interpersonal relationships, get a very decent percentage of ratings (96.80%). According to learning media experts, the average value percentage of the 4 media videos is 95.42% in the category (Very Eligible). This means that the learning video media developed can clarify the material and provide a good picture.

The content and contents of the learning video material according to the expert review of the material for the Effective Communication course provide an assessment of Video Material 1: Communication in the social context and cultural background, stating the percentage of the assessment is Very Eligible (94.60%). Video Material 2: Mass communication and the use of new media as a new communication medium, stating the percentage of the assessment is Very Eligible (95.50%). Video Material 3: Communication in the context of health services, stating the percentage of Very Eligible (96.70%). Video Material 4: Communication in the context of interpersonal relations, stating the percentage of Very Eligible (96.80%). The average value of the 4 instructional video media according to lecture material experts is 95.90% in the category (Very Eligible). This means that the content and content learning video media developed can represent the theme or topic of Effective Communication course material.

To test the effectiveness of instructional video media on 70 students of the DIII RMIK Study Program, Poltekkes Kemenkes Semarang who took the pre-test and post-test, a t-test was carried out for correlated samples. The average student pre-test score was 78.00, and the average post-test score was 92.71. The results of the t-test were obtained by Sig. (2-tailed): Paired t-test probability/p value: Result = 0.000. Meaning: There is a difference between before and after treatment (learning using videos). Reason: The p-value < 0.05 (95% confidence).

**Conclusion**

The results of this study are to answer the research objectives and find solutions to several problems that exist in the effective communication course. The results of the learning media design expert test of four learning

videos of the average class are very feasible. The same thing in the lecture material test from lecturers in the Effective Communication course is also very feasible. The average pre-test score and the average post-test score showed a significant improvement. There is an increase in the value of learning outcomes in the Effective Communication course after students get effective communication learning videos. Therefore, it can be concluded that the use of learning video media using Powtoon is very effective for improving student learning outcomes.

## Acknowledgments

Researchers would like to thank the Poltekkes Kemenkes Semarang for funding this research, as well as the Department of Medical Records and Health Information.

## References

- Alamsyah, R., Toenlio, A. J. E., & Husna, A. (2018). Development of Broadcasting Learning Videos for Television Program Production Materials for Educational Technology Students, State University of Malang. *Journal of Educational Technology Studies*, 1(3), 229–236. Retrieved from <http://journal2.um.ac.id/index.php/jktp/article/view/4563>
- Arumsari, D. P., Emaliyawati, E., & Sriati, A. (2017). Barriers to Effective Communication between Nurses and Patient Families in the Nurse's Perspective. *Indonesian Journal of Nursing Education*, 2(2), 104. <https://doi.org/10.17509/jpki.v2i2.4745>
- Dewi, P. C., Hudiyono, Y., & Mulawarman, W. G. (2018). Development of Instructional Materials for Writing Complex Procedural Texts Using the Discovery Learning Model Using Audio Visual (Video) Media in Class XI of SMA Negeri 1 Samarinda. *DIGLOSIA: Journal of Language, Literature and Teaching Studies*, 1(2), 101–112. <https://doi.org/10.30872/diglosia.v1i2.pp101-112>
- Ernawati, I. (2017). Feasibility Test of Interactive Learning Media in Server Administration Subjects. *Elinvo (Electronics, Informatics, and Vocational Education)*, 2(2), 204–210. <https://doi.org/10.21831/elinvo.v2i2.17315>
- Garmelia, E., Lestari, S., & Golo, Z. A. (2021). Review of the Work Effectiveness of the Person in Charge of the Medical Records (PJR) in the Treatment Ward in Accordance with the Competence of Medical Records and Health Information (PMIK). *Indonesian Journal of Health Information Management (JMiki)*, 9(1), 5. Retrieved from <https://jmiki.apfirmik.or.id/index.php/jmiki/article/view/324>
- Hasrah, H. (2019). Utilization of Communication and Information Technology in PKN Learning. *Phinisi Integration Review*, 2(2), 238. <https://doi.org/10.26858/pir.v2i2.10002>
- Hele, A. P., & Maela, N. F. S. (2018). Service Improvement Based on Organizational Communication Strategy at Luwu Hospital. *Journal of Professional Communication*, 2(1), 39–54. <https://doi.org/10.25139/jkp.v2i1.910>
- Indrajaya, T. (2015). *The Importance of Listening Skills in Creating Effective Communication*. 6(2), 256–264.
- Laksono, D., Sidik Iriansyah, H., & Oktaviana, E. (2021). *Proceedings of the National Seminar on Education of STKIP Kusuma Negara II Development of Powtoon Interactive Video Learning Media in Science Subjects Ecosystem Component Material*. 225–233. Retrieved from <https://www.powtoon.com/>
- Marjuni, A., & Harun, H. (2019). The Use of Online Multimedia in Learning. *Idaarah: Journal of Education Management*, 3(2), 194. <https://doi.org/10.24252/idaarah.v3i2.10015>
- Muhson, A. (2010). Development of Information Technology-Based Learning Media. *Journal of Indonesian Accounting Education*, 8(2). <https://doi.org/10.21831/jpai.v8i2.949>
- Nisak, U. K. (2020). *Textbook of Medical Record Communication and Health Information Management*.
- Nurdyansyah. (2019). *Innovative Learning Media* (Pandi Rais (ed.); First, A). UMSIDA Press Sidoarjo.
- Pertiwi, E., & Irfan, D. (2021). Development of Web-Based Learning Media in Class X TKJ Computer Systems Subject at SMK Negeri 1 Painan. *INTECOMS: Journal of Information Technology and Computer Science*, 4(2), 202–208. <https://doi.org/10.31539/intecomsv4i2.2735>
- Qamarina N., & Sari T. P. KIB (2021). *Correlation between Verbal and Non-Verbal Communication on BPJS Outpatient Patient Satisfaction at the Health Center in Bengkalis Regency*. 01, 171–182.
- Qurrotaini, L., Sari, T. W., & Sudi, V. H. (2020). The Effectiveness of Using Powtoon-Based Video Media in Online Learning. *Proceedings of the UMJ LPPM Research Seminar*, E-ISSN: 27, 7. Retrieved from <https://jurnal.umj.ac.id/index.php/semnaslit/article/view/7869/4682>
- Sari, A. W. (2016). The Importance of Listening Skills in Creating Effective Communication. *EduTech Journal*, 2(1), 1–10.
- Setiyani, M. S. (2020). *Decree of the Minister of Health of the Republic of Indonesia No. HK.01.07/Menkes/312/2020 concerning Professional Standards for Medical Records and Health Information*. 1–9.
- Skarbaliene, A., Skarbalius, E., & Gedrimė, L. (2019). Effective Communication In The Healthcare Settings: Are The Graduates Ready For It?

- Management (Croatia)*, 24(Special Issue), 137-147.  
<https://doi.org/10.30924/mjcmi.24.si.9>
- Susanto, H. (2018). Designing YouTube-Based Communication Skills Course Videos. *Seminaristics*, 4(3), 310-316.
- Syahputri, R. (2019). *Benefits of Effective Communication in Implementing Patient Safety Policy*. 1-8.
- Tegeh, I. M., & Kirna, I. M. (2013). Development of Educational Research Method Teaching Materials with the ADDIE Model. *Journal of IKA*, 11(1), 16.  
Retrieved from <https://ejournal.undiksha.ac.id/index.php/IKA/article/view/1145>
- Warsita, B. (2019). Evaluation of Learning Media as Quality Control. *Technodic Journal*, 17(1), 092-101.  
<https://doi.org/10.32550/teknodik.v17i4.581>
- Wisada, P. D., Sudarma, I. K., & Yuda, S. A. I. W. I. (2019). Development of Character Education Oriented Learning Video Media. *Journal of Education Technology*, 3(3), 140.  
<https://doi.org/10.23887/jet.v3i3.21735>
- Yudasmar, G. A., & Purnami, D. (2015). Development of Biology Interactive Learning Media to Improve Student Learning Outcomes in Middle School. *Journal of Education and Teaching*, 48(1-3), 1-8.  
<https://doi.org/10.23887/jppundiksha.v48i1-3.6923>
- Zuwirna. (2016). Effective Communication. *Padang State University*, 1(1), 1-8.