THE EFFECTIVENESS OF INTERACTIVE MULTIMEDIA-BASED LEARNING METHODS TO INCREASE THE MOTIVATION OF ELEMENTARY SCHOOL TEACHERS IN THE JSIT KULONPROGO ENVIRONMENT

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ABSTRACT

Teachers' motivation in developing multimedia in primary-secondary school teachers who are members of the Kulonprogo integrated Islamic school network is still low. The purpose of this study is to see if there is a significant effect on teacher motivation after providing interactive multimedia training to teachers. Multimedia training includes providing material about interactive multimedia, making multimedia by teachers, mentoring, demonstrations and producing interactive multimedia products from elementary junior high schools. The research method used is a pre-experiment design involving 25 primary-secondary school teachers who are members of the Kulonprogo integrated Islamic school network. The sampling technique used is purposive sampling and uses the Wilcoxon test in data analysis. Activities will be carried out using offline and online methods using a theoretical and practical approach. Theoretical material and practical assistance are carried out in the Kapanewon Kulonprogo area. The implementation of activities will be reflected through an evaluation of the participants' understanding of the material, seen from the performance, work results, program implementation evaluation questionnaire. Training is carried out offline and online. Offline training was held at the Yogyakarta State University Hall, Wates Campus offline and online through the zoomeeting application. The results of the implementation of this training based on the pre-post questionnaire obtained an increase in pre-post results from an average of 58.2 to an average of 69.52. While the results of data processing using SPSS obtained Sig Value. <0.05, this shows that there is a significant effect on teacher motivation before and after the provision of training in making interactive multimedia for teachers. The conclusion of the research is that there is a positive influence on teacher motivation before and after the provision of interactive multimedia training to elementary and junior high school teachers who are members of an integrated Islamic school network in Kulonprogo Regency, Yogyakarta Special Region.

Keywords: interactive multimedia; learning; motivation

INTRODUCTION

The development of Science and Technology today must be recognized as growing very rapidly. The advancement of science and technology brings influence in various aspects of human life. Almost in all fields of activity carried out by humans-

including as a medium in education.[1,2] Primary education, secondary education, and post-secondary education are highly dependent on the teaching and learning process. Education depend heavily on the teaching and learning process to carry out the mission to be achieved.[3,4] Media can foster motivation, interest and learning outcomes of elementary school students.[5,6] Optimizing thematic learning requires varied learning media that can help students understand abstract concepts. Media that utilizes the development of science and technology and can be used in learning in elementary schools today is interactive multimedia. Interactive multimedia can create meaningful learning for elementary school students.[7,8,9]

Interactive multimedia is a computer-assisted learning resource to support learning.[10,11] Multimedia comes from the word multi which means many and media which means a tool to convey messages so that it means conveying messages using many

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[1] Suratno Suratno et al., "What Is the Effect of Learning Models and Interests on Study Results?," *Jurnal Cakrawala Pendidikan* 42, no. 3 (September 29, 2023): 804–14, https://doi.org/10.21831/cp.v42i3.52342.

[2] Mai Neo et al., "Enhancing Students' Online Learning Experiences with Artificial Intelligence (AI): The MERLIN Project," *IJTech - International Journal of Technology* 13, no. 5 (October 19, 2022): 1023–34, https://doi.org/10.14716/ijtech.v13i5.5843.

[3] Albi Anggito, Pratiwi Pujiastuti, and Dhiniaty Gularso, "The Effect of Video Project-Based Learning on Students' Critical Thinking Skills during the Covid-19 Pandemic," *AL-ISHLAH: Jurnal Pendidikan* 13, no. 3 (November 23, 2021): 1858–67, https://doi.org/10.35445/alishlah.v13i3.772.

[4] Anuraga Jayanegara, Asrori Mukhtarom, and Ismail Marzuki, "Innovative Learning Methods of Islamic Education Subject in Indonesia: A Meta-Analysis," *International Journal of Evaluation and Research in Education (IJERE)* 13, no. 2 (April 1, 2024): 1148, https://doi.org/10.11591/ijere.v13i2.26364.

[5] Muhammad Fahmi Saifudin, Susilaningsih Susilaningsih, and Agus Wedi, "Pengembangan Multimedia Interaktif Materi Sumber Energi Untuk Memudahkan Belajar Siswa SD," *JKTP: Jurnal Kajian Teknologi Pendidikan* 3, no. 1 (February 10, 2020): 68–77, https://doi.org/10.17977/um038v3i12019p068.

[6] Sura I. Mohammed Ali et al., "Machine Learning for Text Document Classification-Efficient Classification Approach," *IAES International Journal of Artificial Intelligence (IJ-AI)* 13, no. 1 (March 1, 2024): 703–10, https://doi.org/10.11591/ijai.v13.i1.pp703-710.

[7] Ahmad Habib, I. Made Astra, and Erry Utomo, "Pemanfaatan Multimedia Interaktif: Pengembangan Media Pembelajaran Berbasis Pjbl (Project Based Learning)," *PROSIDING SEMINAR DAN DISKUSI PENDIDIKAN DASAR*, October 26, 2020, https://journal.unj.ac.id/unj/index.php/psdpd/article/view/17796.

[8] Duratul Ain Tholibon et al., "The Factors of Students' Involvement on Student-Centered Learning Method," *International Journal of Evaluation and Research in Education (IJERE)* 11, no. 4 (December 1, 2022): 1637–46, https://doi.org/10.11591/ijere.v11i4.22314.

[9] Choiril Anwar et al., "TPACK Framework Into TEFL for Meaningful-Effective EFL Learning and Teaching at Indonesian Context," *Journal of Higher Education Theory and Practice* 24, no. 3 (February 25, 2024), https://doi.org/10.33423/jhetp.v24i3.6831.

[10] Saifudin, Susilaningsih, and Wedi, "Pengembangan Multimedia Interaktif Materi Sumber Energi Untuk Memudahkan Belajar Siswa SD."

[11] Steffi Domagk, Ruth N. Schwartz, and Jan L. Plass, "Interactivity in Multimedia Learning: An Integrated Model," *Computers in Human Behavior*, Advancing Educational Research on Computer-supported Collaborative Learning (CSCL) through the use of gStudy CSCL Tools, 26, no. 5 (September 1, 2010): 1024–33, https://doi.org/10.1016/j.chb.2010.03.003.

tools.[12,13] Interactive multimedia according to Pratomo is a combination of text, graphics, sound, video and animation that can produce an interactive media. In line with Haryanto & Fitriana, multimedia is a combination of video, audio, graphics, and text in a computer-based multilevel production that can be experienced interactively.[14,15]

The use of interactive multimedia is considered to be able to provide material understanding to students.[16] Interactive multimedia contains information that is organized and connected to one another into an interrelated series.[17,18] This opinion is confirmed by Armansyah et al., mentioned that interactive multimedia is a solution for students to learn material compared to monotonous textbooks/e-books.[19,20] Interactive multimedia is used to clarify abstract material/concepts into concreteness by utilizing tools that can be used

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[12] Farzana Sharmin Pamela Islam, "The Use of Multimedia and Its Impact on Bangladeshi EFL Learners at Tertiary Level," *International Journal of Language Education*, March 30, 2020, 150–57, https://doi.org/10.26858/ijole.v4i2.12150.

[13] Dingding Haerudin et al., "Inventorying Authentic Teaching Materials on Youtube for Listening Learning Plan of Pupuh in Elementary School," *Jurnal Cakrawala Pendidikan* 42, no. 2 (May 31, 2023): 549–64, https://doi.org/10.21831/cp.v42i2.46233.

[14] Haryanto Haryanto and Bagas Friana, "Aplikasi Permainan Edukatif Mengaji Berbasis Multimedia Interaktif," *Jutis (Jurnal Teknik Informatika)* 6, no. 1 (2018): 8–16, https://doi.org/10.33592/jutis.Vol6.Iss1.36.

[15] Hugo Luis Moncayo Cueva et al., "Utilizing Emerging Technology Trends and Artificial Intelligence in Higher Education," *Journal of Higher Education Theory and Practice* 24, no. 3 (February 29, 2024), https://doi.org/10.33423/jhetp.v24i3.6847.

[16] Suwarna Dwijonagoro and Suparno Suparno, "Pranatacara Learning: Modeling, Mind Mapping, E-Learning, or Hybrid Learning?," *Jurnal Cakrawala Pendidikan* 38, no. 1 (February 19, 2019): 156–73, https://doi.org/10.21831/cp.v38i1.23034.

[17] Kadaruddin, *Mahir Desain Slide Presentasi Dan Multimedia Pembelajaran Berbasis Powerpoint* (Deepublish, 2018).

[18] Ghadah Al-Ofisan and Areej Al-Wabil, "Human Factors in the Design of Interactive Multimedia Art Installations (IMAIs)," *Procedia Manufacturing*, 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015) and the Affiliated Conferences, AHFE 2015, 3 (January 1, 2015): 4572–77, https://doi.org/10.1016/j.promfg.2015.07.474.

[19] Firdausy Armansyah, Sulton Sulton, and Sulthoni Sulthoni, "Multimedia Interaktif Sebagai Media Visualisasi Dasar-Dasar Animasi," *JKTP: Jurnal Kajian Teknologi Pendidikan* 2, no. 3 (August 31, 2019): 224–29, https://doi.org/10.17977/um038v2i32019p224.

[20] Budsaba Kanoksilapatham and Todsapon Suranakkharin, "Enhancing Thai Elementary Students' English and Maintaining Thainess Using Localized Materials: Two Putative Confronting Forces," *Studies in English Language and Education* 8, no. 3 (September 16, 2021): 1006–25, https://doi.org/10.24815/siele.v8i3.19988.

for learning.[21,22] Providing interactive multimedia can improve concept understanding in elementary school students.[23]

Interactive multimedia is one of the learning media that can be applied by elementary schools to help students learn actively, besides that interactive multimedia can be used as an alternative media to overcome learning quality problems in schools.[24,25] In reality, not all teachers utilize science and technology in the learning process, including some teachers at JSIT Kulonprogo. Learning media is one of the factors that can make learning more enjoyable and meaningful[26]. In addition, the use of media will make learning more interesting so that it can foster student interest in learning.[27]

The results of an interview with the Head of JSIT Kulonprogo Mr. W in September 2022 regarding the use of interactive multimedia stated that: The average teacher is still a textbook in the thematic learning process, Teachers rarely use media in thematic learning, Teachers use media that is one-way, Teachers have not been skilled in making a combination of text, animation, graphics, audio, and thematic learning videos, Teachers have not been skilled in making interactive multimedia, Teachers have never made interactive multimedia in thematic learning directly and indirectly this affects children's interest in learning when receiving material. Teacher motivation in utilizing multimedia is still low. Whereas motivation has the function of providing the direction of an action

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[21] Nukke Deliany, Asep Hidayat, and Yeti Nurhayati, "Penerapan Multimedia Interaktif Untuk Meningkatkan Pemahaman Konsep IPA Peserta Didik Di Sekolah Dasar," *EDUCARE*, December 31, 2019, 90–97, https://doi.org/10.36555/educare.v17i2.247.

[22] Sebastiaan de Klerk, Theo J. H. M. Eggen, and Bernard P. Veldkamp, "A Methodology for Applying Students' Interactive Task Performance Scores from a Multimedia-Based Performance Assessment in a Bayesian Network," *Computers in Human Behavior* 60 (July 1, 2016): 264–79, https://doi.org/10.1016/j.chb.2016.02.071.

[23] sufairoh, "Pendekatan Saintifik Dan Model Pembelajaran," *Bahastra* 5, no. 3 (2016): 125, https://doi.org/10.26555/bahastra.v37i1.5641.

[24] Maharani Putri Kumalasani, "Kepraktisan Penggunaan Multimedia Interaktif Pada Pembelajaran Tematik Kelas IV SD," *Jurnal Bidang Pendidikan Dasar* 2, no. 1A (April 25, 2018): 1–11, https://doi.org/10.21067/jbpd.v2i1A.2345.

[25] Jurike V. Moniaga et al., "Map-Type Modelling and Analysis of Children Stunting Case Data in Indonesia with Interactive Multimedia Method," *Procedia Computer Science*, The 4th International Conference on Computer Science and Computational Intelligence (ICCSCI 2019) : Enabling Collaboration to Escalate Impact of Research Results for Society, 157 (January 1, 2019): 530–36, https://doi.org/10.1016/j.procs.2019.09.010.

[26] Nada Savitri Nawangsari et al., "Sapen Radio and TV Programs as Supporting Media During Covid-19 Distance Learning" (5th International Conference on Current Issues in Education (ICCIE 2021), Atlantis Press, 2022), 377–82, https://doi.org/10.2991/assehr.k.220129.069.

[27] Albi Anggito et al., "Effectiveness of Multicultural-Based Comic to Improve Learning Achievement and Tolerance Characters in Elementary School" (5th International Conference on Current Issues in Education (ICCIE 2021), Atlantis Press, 2022), 275–80, https://doi.org/10.2991/assehr.k.220129.050.

that is carried out as an effort to achieve goals.[28,29] Furthermore, Mr. W. said that teachers have different educational backgrounds, tend to carry out textbook-based learning, and their skills in using media are still limited. This of course results in less varied and less optimal learning. Thus, it is necessary to increase the motivation of teachers in the JSIT environment in implementing interactive multimedia-based learning in the classroom.

The low understanding and assistance for teachers to be able to innovate learning media, especially interactive multimedia-based, makes teachers rarely develop their own media according to the needs of each class they teach. The lack of teacher innovation in developing media according to student needs often makes learning monotonous and students quickly feel bored in learning.[30,31] This low motivation to innovate is what makes this mentoring important. By having the ability to innovate and make their own interactive multimedia, it is hoped that teachers will be more motivated in developing it. This will certainly have an impact on increasing student motivation in learning if teachers use interactive multimedia that is in accordance with the needs of students in the class.[32,33]

The novelty in this research is to see the extent of the role of multimedia in increasing the motivation of teachers who are members of the Integrated Islamic School Network in Kulonprogo, Yogyakarta Special Region. This research does not only involve one level of education, but involves kindergarten, elementary school, and junior high school levels. In addition, the schools studied were in the Integrated Islamic School

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[28] Lisa Retnasari, Yayuk Hidayah, and Dianasari, "Urgensi Bahan Ajar Materi Pembelajaran PPKn SD Untuk Membangun Kompetensi Pedagogik Calon Guru Sekolah Dasar," *Jurnal Cakrawala Pendas* 6, no. 2 (July 31, 2020), https://doi.org/10.31949/jcp.v6i2.2186.

[29] Ummu Aiman, Sunimbar Sunimbar, and Farhan Suhada, "Implementasi Model Problem Based Learning Dengan Suplemen Peta Pikiran Meningkatkan Literasi Sains Peserta Didik Kelas IV SD Inpres Roja 2 Kota Ende.," *Seminar Nasional Paedagoria* 2, no. 0 (August 4, 2022): 166–72.

[30] Amelia Putri Wulandari et al., "Pentingnya Media Pembelajaran Dalam Proses Belajar Mengajar," *Journal on Education* 5, no. 2 (January 22, 2023): 3928–36, https://doi.org/10.31004/joe.v5i2.1074.

[31] Fazzlijan Mohamed Adnan Khan and Mona Masood, "Potential of Interactive Multimedia Learning Courseware Using Three Different Strategies in the Learning of Biology for Matriculation Students in Malaysia," *Procedia - Social and Behavioral Sciences*, 5th World Conference on Educational Sciences, 116 (February 21, 2014): 2521–25, https://doi.org/10.1016/j.sbspro.2014.01.604.

[32] Haiying Dong et al., "The Effectiveness of Using Interactive Visual Multimedia Technology Intervention in Improving the Literacy Skills of Children in Rural China," *Learning and Motivation* 86 (May 1, 2024): 101964, https://doi.org/10.1016/j.lmot.2024.101964.

[33] Siti Zuraida Maaruf and Saedah Siraj, "The State of Technology and the Arts - Interactive Multimedia in Enhancing Culturally Responsive Pedagogy," *Procedia - Social and Behavioral Sciences*, 13th International Educational Technology Conference, 103 (November 26, 2013): 1171–80, https://doi.org/10.1016/j.sbspro.2013.10.444.

Network (JSIT) unit which is still very rarely held assistance and research related to improving teachers' abilities in developing interactive multimedia.

RESEARCH METHODS

This research uses a type of quantitative research with the Pre-Experimental Design method. Some forms of pre-experimental design are one-shot case study, one group pretest-postest, and intact group comparison.[34] This study will use a one group pretest-postest design which is a study by comparing the situation before treatment and the situation after treatment with 25 teachers. The research design with one group pretest-postest is as follows.

$$O_1 \quad X \quad O_2$$
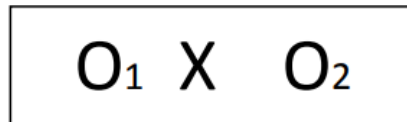
Description:

O1 = Pretest score (before treatment)

X = Treatment

O2 = Posttest score (after being treated)

In this design the test is given twice, namely before and after treatment. The sampling technique used in the study was purposive sampling. As a result, 25 teachers who are members of the Integrated Islamic School Network (JSIT) in Kapanewon Kulonprogo, Yogyakarta Special Region which was held in July-September 2022 will participate in this research. There are two instruments used, namely the interview instrument and the teacher motivation questionnaire instrument. The interview instrument is used to underpin the background and initial study in this research, while the teacher motivation questionnaire is used to find out whether there is an effect of mentoring teachers in developing multimedia on teacher motivation. The following is a lattice of interview instruments and questionnaires of teacher motivation in developing multimedia.

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[34] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif Dan R&D* (Bandung: Alfabeta, 2016).

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Table 1
Interview grids for the initial study

No.	Item Statement
1	What learning media are often used in learning?
2	Have you ever used interactive multimedia in learning?
3	Have you ever developed your own interactive multimedia according to students' needs?
4	What are your difficulties in developing interactive multimedia?
5	Do you need assistance in creating your own interactive multimedia?

Source: Personal Documents

Table 2
Teacher motivation grids in developing multimedia

No.	Item Statement
1	I use interactive multimedia in the learning process
2	I already have my own IT-based media used for teaching
3	I am eager to prepare IT-based learning media
4	I am helped by the presence of the internet as a teaching medium
5	I am familiar with interactive multimedia
6	I can create interactive multimedia in the learning process
7	I can develop interactive multimedia in the form of evaluation questions
8	I can make learning fun by using interactive multimedia
9	I think mastering multimedia is important for an elementary school teacher.
10	I can teach creatively using interactive multimedia
11	I am enthusiastic in learning to make interactive media even though there are books from the government
12	I think making interactive multimedia can be done by every elementary school teacher including me
13	It is satisfying to make students happy to use the interactive media I made
14	I believe I can combine several media in the learning process in the classroom
15	I can utilize several media in creating interactive powerpoints
16	I can create an Interactive Learning Multimedia outline or draft well
17	I can utilize canva in interactive multimedia
18	I can mix and match the content and layout of the media created
19	I can utilize text, image shapes, photos, various colors and fonts, hyperlink functions, audio, video, and animation for my multimedia development
20	I developed interactive multimedia that facilitates children's visual, audio and kinesthetic learning styles

Source: Personal Documents

The instrument was first validated by an expert, Dr IR M.Pd. to check whether it had been compiled based on theory and standard wording. After being declared valid, the measurement of item validity uses the help of the SPSS 26 programme. Efforts to calculate the validity coefficient use the Product Moment Correlation formula, with the following formula.

$$r_{xy} = \frac{n\sum XY - (\sum X)(\sum Y)}{\sqrt{\{n\sum X^2 - (\sum X)^2\}\{n\sum Y^2 - (\sum Y)^2\}}}$$

Description:

r_{xy} = Correlation coefficient between variable X and variable Y

N = Number of subjects

X = Item score

Y = Total score

The item validation test used correlates the item score with the total item score. After that, 5% significance testing. If the value is positive with r count ≥ r table, then the item is valid. If r counts < r table, then the item is invalid.

The next step is the reliability test using Alfa Cronbach. Testing the reliability of the instrument will utilise the SPSS 26 programme. The Alfa Cronbach formula is as follows.

$$r_{11} = \left[\frac{k}{k-1}\right]\left[1 - \frac{\sum \sigma_b^2}{V_t^2}\right]$$

Description:

r_{11} = Instrument reliability
k = Number of questions or number of questions
$\sum \sigma_b^2$ = Number of item variants
V_t^2 = Total variance

The basis for decision making in the reliability test is if the Cronbach's Alpha value > r table, then the instrument is declared reliable, while if the Cronbach's Alpha value < r table, it is declared unreliable.

The reason for using non-parametric tests in analysing the data in this study is that in the pre-requisite tests, namely the normality and homogeneity tests, the data are declared abnormal and inhomogeneous, so a non-parametric test is needed, namely the Wilcoxon test. Wilcoxon signed-rank test is one of nonparametric tests which is used to test whether median equals some value in one sample case.[35,36] The test is based on

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[35] Jutharath Voraprateep, "Robustness of Wilcoxon Signed-Rank Test against the Assumption of Symmetry" (m_rs, University of Birmingham, 2013), https://etheses.bham.ac.uk/id/eprint/4607/.

[36] Asnawi Muslem et al., "YouTube Teaching Materials with Peer Support to Improve Students' Mastery of Subject Content Learning," *Studies in English Language and Education* 9, no. 2 (May 23, 2022): 651–66, https://doi.org/10.24815/siele.v9i2.25236.

signed-rank of observations that are drawn from a symmetric continuous distribution population with unknown median. A Wilcoxon signed rank test was conducted for each item to see if there was a significant increase in scores after the treatment. The Wilcoxon test will be assisted using the SPSS version 26 application to facilitate data analysis. The test criteria can be determined by looking at the significance value as follows. If the significance > 0.05 then H_0 is accepted. If significance < 0.05 then H_0 is rejected.

RESULT AND DISCUSSION

Interactive multimedia training activities in increasing student interest in learning for elementary and junior high school teachers in the JSIT environment in Kulonprogo have been carried out. Activities carried out in the form of guided workshops followed by incentive assistance by the PIP3 LPMPP UNY team accompanied by Dr. ATL, M.Pd., Drs. MNR, M.Pd., F, M.Pd., and ANP, M.Pd. The training activities were carried out directly at UNY Wates Campus. The intensive assistance is carried out online (in the network) through zoom media. The training activities were attended by 25 teachers and accompanied by several UNY lecturers and several students involved. The following is a documentation of the training activities in the first stage which was carried out directly face-to-face.

First Stage of Training (November 18th, 2022) namely, The training activities began with the presentation of material by Dr ATL, M.Pd. regarding "Interactive Multimedia and its Types". Mr and Mrs teachers were also given the opportunity to convey what they knew about "Interactive Multimedia and its Types". The material presented included the definition of Interactive Multimedia, Types of Interactive Multimedia, and Advantages and Disadvantages of Interactive Multimedia.

The second session in the training phase of interactive multimedia in increasing student learning motivation for elementary and junior high school teachers in the JSIT environment in Yogyakarta was accompanied by Mr F, M.Pd., and Mr ANP, M.Pd. The activities in the second session were also guided by one of the students as the moderator. In this activity, Mr and Mrs teachers were given material on the example of practice making interactive multimedia using power point. Before direct practice, Mr and Mrs teachers listened to the presentation from Mr, F, M.Pd. Teachers were given the freedom

to design and develop interactive multimedia according to the material and class designation being taught.

Second Phase of Training (November 21th, 2022) namely, The second stage of interactive multimedia training was carried out online (online) using video conferencing in the form of zoom meetings. Coordination continues to be carried out by the organisers of training activities in the form of providing continuous information on the WhatsApp group platform. The second stage of advanced training is still attended by the teachers who participated in the first stage of training. It's just that the agenda carried out is the continuation of the design and development of interactive multimedia.

Third Stage of Training (November 23th, 2022), In the third stage, participants were given guidance in preparing guidelines for the interactive multimedia that had been developed. The activity was carried out on 23 November 2022 online through a zoom meeting. This advanced training activity was greeted enthusiastically by the trainees. Not only presentations, but Dr ATL, M.Pd., also opened a question and answer session related to the development of interactive multimedia as learning media and the preparation of guidelines.

Fourth Stage of Training (November, 29th, 2022), On the occasion of the last or fourth stage of training, Dr. ATL, M.Pd. socialised how to arrange IPR for interactive multimedia that had been developed by the teachers. Dr ATL M.Pd. showed the steps of IPR submission followed by the training participants.

The series of training activities ended with motivation provided by Dr ATL, M.Pd., regarding the importance of developing interactive multimedia that can help teachers in delivering subject matter while increasing students' interest in learning. Interactive learning media will certainly be a special attraction and make it easier to achieve learning objectives. Achieving learning objectives is the desire of all educators, thus it is important for educators to want to design and develop interactive multimedia, because interactive multimedia has great benefits for learning

During the activity, prescales and postscales were also given to see the extent of teacher motivation before and after the mentoring. The following are the results of Data Processing Scale Teacher Motivation in Developing Interactive Multimedia.

Table 3
Teacher Motivation Scale Pre-Post Results

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Pre-scale	57	56	58	57	66	56	60	54	58	53	60	59	57	55	58	59	61	62	59	55	65	62	54	58
Post-scale	57	73	71	80	64	68	74	75	66	72	70	73	73	68	72	70	67	68	67	67	59	68	69	70

Source : Personal Documents

Based on pre-post data analysis, the pre-post results were obtained from an average of 58.2 to an average of 69.52. Thus it can be seen that there is an increase before training and after training.

The data analysis used is the Wilcoxon Test using prescale and postscale data on teacher motivation in using multimedia in learning. The hypothesis in this study is as follows.

H_0: There is no significant effect on teacher motivation before and after providing interactive multimedia training for JSIT teachers in Kulonprogo District, Yogyakarta Special Region.

H_a: There is a significant effect on teacher motivation before and after providing interactive multimedia training for JSIT teachers in Kulonprogo District, Yogyakarta Special Region.

The following are the results of the Wilcoxon test on the pre and post data of the teacher motivation scale in using multimedia in learning.

Table 4
Wilcoxon Test Results

Test Statistics[a]	
	Posttest - Pretest
Z	-4.256[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.
Source: Personal Documents

Based on the table above, it shows that the significance value is <0.05, which means that the hypothesis (H_a) is accepted. Therefore, it can be concluded that there is a significant effect on teacher motivation before and after the provision of interactive

multimedia training for Integrated Islamic School Network teachers in Kulonprogo Regency, Yogyakarta Special Region.

A learning process requires components that support the success of the learning itself. One important component that provides an increase in the quality of learning is learning media that has been adapted to the objectives and needs of learning activities.[37,38] Learning media is part of the instructional system in learning which is inseparable from learning materials.[39] Where learning media is able to encourage students' understanding of learning material through various types of media.

In general, learning media can be adjusted to the purpose of using media in learning activities. Teachers can choose the type of media used to support the delivery of more quality material.[40,41] However, along with the development of technology, various types of learning media can be collaborated or combined into a unified learning media.[42] The combination of various types of learning media can increase students' understanding of learning materials.

The combination of various types of media can also be called multimedia. Multimedia comes from two basic words, namely "Multi" and "Media". "Multi" means a lot, while "Media" means medium.[43] From these two words, it can be taken that the meaning of multimedia is an intermediary tool that has many components in it. According to Surjono, multimedia is a combination of media used to convey messages or information, such as text, images, sound, and video. Multimedia refers to the inclusion of

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[37] Berit Misund Dahl, Frøydis Vasset, and Marianne Frilund, "Students' Approaches to Scientific Essay Writing as an Educational Method in Higher Education: A Mixed Methods Study," *Social Sciences & Humanities Open* 7, no. 1 (January 1, 2023): 100389, https://doi.org/10.1016/j.ssaho.2022.100389.

[38] Francisca M. Ivone, George M. Jacobs, and Willy A. Renandya, "Far Apart, yet Close Together: Cooperative Learning in Online Education," *Studies in English Language and Education* 7, no. 2 (September 3, 2020): 271–89, https://doi.org/10.24815/siele.v7i2.17285.

[39] Muhammad Istiqlal, "Pengembangan Multimedia Interaktif Dalam Pembelajaran Matematika," *JIPMat* 2, no. 1 (July 21, 2017), https://doi.org/10.26877/jipmat.v2i1.1480.

[40] Hui Li et al., "Exploring Factors Influencing Young Children's Learning from Storybooks: Interactive and Multimedia Features," *Journal of Experimental Child Psychology* 233 (September 1, 2023): 105680, https://doi.org/10.1016/j.jecp.2023.105680.

[41] Cynthia J. Brame, "Effective Educational Videos: Principles and Guidelines for Maximizing Student Learning from Video Content," *CBE—Life Sciences Education* 15, no. 4 (December 2016): es6, https://doi.org/10.1187/cbe.16-03-0125.

[42] Andreas Rio Adriyanto et al., "Design and Multimedia Learning Principles on Mooc Indonesiax," *Jurnal Cakrawala Pendidikan* 40, no. 1 (February 17, 2021): 92–106, https://doi.org/10.21831/cp.v40i1.34699.

[43] Masoumeh Sadat Abtahi, "Interactive Multimedia Learning Object (IMLO) for Dyslexic Children," *Procedia - Social and Behavioral Sciences*, Cyprus International Conference on Educational Research (CY-ICER-2012)North Cyprus, US08-10 February, 2012, 47 (January 1, 2012): 1206–10, https://doi.org/10.1016/j.sbspro.2012.06.801.

various audio and video components in instructional and training materials.[44] Quoted in Elsom Cook states that multimedia is the integration of multiple communication channels into a coordinated communicative experience with a lack of mention of the original interpretation language.[45]

Interactive multimedia has advantages in accordance with the intended use of the multimedia created. Interactive multimedia development has various advantages over other media, because it is innovative.[46] Multimedia is an important in education without technology it affects the learning process.[47] The following are the advantages of interactive multimedia developed by Kusumawati et al: clarify material with interesting images and animations to help students learn more easily, train skills with various activities to try after learning the material, Motivate students with various forms of praise accompanied by pictures, and attractive animations, and give users the freedom to choose the material they want. Want with navigation buttons.

As for the research resultsTapilouw & Setiawan (2017) shows that interactive multimedia has the ability to motivate students. Interactive multimedia motivates students to relearn the subject matter even after the learning is over.[48] This is evident from the results of retention or storage in memory of more than 100%. Learning with interactive multimedia technology allows learners to be independent and active in their learning, which is not possible in a classical classroom where learning is dominated by the teacher. From the two research results on interactive multimedia, it can be concluded that the use of interactive multimedia has advantages in learning, where students are more motivated to learn, able to learn independently and actively, able to customize the activities desired by the user, and students remember learning material more easily. Therefore, teachers

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[44] Mars Caroline Wibowo, "Multimedia Interaktif," *Penerbit Yayasan Prima Agus Teknik*, 2021, 1–361.

[45] Surjono H. D., *Multimedia Pembelajaran Interaktif: Konsep Dan Pengembangan* (Yogyakarta: UNY Press, 2017).

[46] Lilis Diah Kusumawati, NFn Sugito, and Ali Mustadi, "Kelayakan Multimedia Pembelajaran Interaktif Dalam Memotivasi Siswa Belajar Matematika," *Kwangsan: Jurnal Teknologi Pendidikan* 9, no. 1 (July 1, 2021): 31, https://doi.org/10.31800/jtp.kw.v9n1.p31--51.

[47] A Vijayalakshmi, "Role of Multimedia on Motivation and Knowledge Retention," no. 0886 (n.d.).

[48] Fransisca Tapilouw and Wawan Setiawan, "Meningkatkan Pemahaman Dan Retensi Siswa Melalui Pembelajaran Berbasis Teknologi Multimedia Interaktif," *Jurnal Pendidikan Teknologi Dan Komunikasi* 1, no. 2 (2008).

need to utilise modern technology in preparing the communication process for meaningful learning for students.[49]

Therefore, researchers conducted interactive multimedia training aimed at elementary and junior high school teachers in the Integrated Islamic School Network (JSIT) in Kulonprogo Regency, Yogyakarta. This training aims to increase the motivation of teachers in creating and implementing learning with the help of interactive multimedia. Teacher motivation in carrying out their duties is very important for the smooth and successful teaching and learning process in order to realize the educational goals as expected. [50] Furthermore, teachers will carry out their duties optimally, full of responsibility, full of confidence, earnestly without waiting for orders, and like their work, and are able to reflect on their experience and technical abilities to achieve their work goals and productivity. [51] Thus, teachers must be able to fulfill the learning components with good quality in order to achieve the desired learning objectives.[52]

The results of the teacher motivation assessment scale in developing interactive multimedia carried out in this activity also show positive things. Based on the Wilcoxon test, it is interpreted that there is a positive influence on teacher motivation in developing interactive multimedia before and after the training. In addition, some teachers are also grateful and will strive to be able to provide a variety of learning with more interesting through the use of interactive multimedia to their students in the classroom.

CONCLUSION

Training on making interactive multimedia in thematic learning for teachers at JSIT elementary and junior high schools in Kulonprogo. Multimedia training includes providing material on interactive multimedia, making multimedia by teachers, mentoring, demonstrations and producing interactive multimedia products from SD-SMP. The

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[49] Anggito et al., "Effectiveness of Multicultural-Based Comic to Improve Learning Achievement and Tolerance Characters in Elementary School."

[50] Risda Herawati Simarmata, "Upaya Peningkatan Motivasi Kerja Guru Sekolah Dasar," *Jurnal Bahana Manajemen Pendidikan* 2, no. 1 (March 4, 2020): 654–60, https://doi.org/10.24036/bmp.v2i1.3810.

[51] Enesa Ratmilia and Sukirno Sukirno, "Motivasi Kerja Guru Sekolah Dasar Ditinjau Dari Karakteristik Demografi," *Premiere Educandum : Jurnal Pendidikan Dasar dan Pembelajaran* 9, no. 1 (June 21, 2019): 64–72, https://doi.org/10.25273/pe.v9i1.4311.

[52] Rintis Rizkia Pangestika and Galih Yansaputra, "Pengembangan Multimedia Interaktif Terintegrasi Budaya Lokal Purworejo Pada Subtema Keberagaman Budaya Bangsaku," *Jurnal Cakrawala Pendas* 7, no. 1 (January 31, 2021), https://doi.org/10.31949/jcp.v7i1.2465.

purpose of this training activity is to increase teacher motivation in making interactive multimedia in learning for teachers at JSIT in Kulonprogo so that student interest in learning increases. Activities will be carried out using offline and online methods using a theoretical and practical approach. Training is carried out offline and online. Offline training was held at the UNY Wates Campus Hall offline and online through the zoomeeting application. The results of the implementation of this training based on the pre-post questionnaire obtained an increase in pre-post results from an average of 58.2 to an average of 69.52. While the results of data processing using SPSS obtained Sig Value. <0.05, this shows that there is a significant effect on teacher motivation before and after the provision of training in making interactive multimedia for teachers in Kulonprogo Regency, Yogyakarta Special Region. The contribution of the research is to present the results of research related to the effect of providing training to JSIT teachers to increase their motivation to use multimedia in classroom learning.

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