EFFECTIVENESS OF EDUCATION AND TRAINING MANAGEMENT MODEL DEVELOPMENT OF E-LEARNING-BASED LEARNING VIDEOS TO IMPROVE TEACHER COMPETENCIES

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Abstract

This e-learning-based Education and Training is designed to equally improve the competence of various PAUD educators and the limited access to training, both in terms of time, cost, and geographically. In the implementation of education and training, they are faced with different characteristics of PAUD educators, such as differences in age groups and initial perceptions at the time of participating in the E-Learning-Based Learning Video Development Training and Education. This study aims to determine the effectiveness of the training management model for the development of e-learning based learning videos to improve teacher competence in making teaching materials in PP PAUD and Dikmas Central Java. The research method used is quantitative method and the type of research carried out is pre-experimental with the research sample, namely the basic education and training PAUD educators in the Semarang city area, amounting to 10 people. Based on the results of the study, it can be concluded that the use of the training management model for developing e-learning-based learning videos in improving teacher competence in making teaching materials in PP PAUD and Dikmas Central Java is effective.

Keywords: Education and Training, management model, e-learning, Learning Video.

PRELIMINARY

The important role of an educator in preparing children as the nation's next generation needs to be carried out from an early age, one of which is through the provision of education for early childhood, which is stated in the regulation of the Minister of National Education of the Republic of Indonesia No. 58 of 2009 concerning Standards for Early Childhood Education.

The success of Early Childhood Education cannot be separated from the role of Early Childhood Education educators, considering their main role in nurturing, caring for, educating and protecting children in an effort to maximize children's growth and

development. Therefore, educators need to be well prepared through the implementation of Education and training (Diklat) to increase competence for Early Childhood Education educators. because the role of educators is very significant in the learning process (Jones et al., 2006). Early Childhood Education Educators in carrying out their duties are highly expected that Early Childhood Education educators have competencies according to educational standards, namely pedagogic, personality, social and professional competencies Gordon & K.M, (2011), so that educators can meet the demands of the needs and development of society.

Various efforts have been made by the Indonesian government to improve the quality of educators and education personnel, especially for Early Childhood Education educators. According to Malaysia (2005) explains that Early Childhood Education Educators are professionals who plan, implement the learning process and assess learning outcomes as well as provide guidance, care, and protection of students. So that an early childhood education educator should carry out his duties after the competencies and qualifications are met. One of the efforts to improve the competence of early childhood education educators is through education and training. Devi & Shaik (2012) mentions that the training function allows human resources to bring out their potential. According to Dec Enzo & Robbins (2010, p. 190) states that training and development is one form of efforts to improve the quality of human resources.

The rapid development of information and communication technology today has had a very large positive impact on the progress of the world of education. One of them is Education and Training Service Institutions. The training model has also developed, especially during the Covid-19 pandemic. There has been a change in the transformation of training, from conventional forms of training to forms of training based on the use of technology. Transformation of training by utilizing technology applications with e-learning is the right choice. Therefore, training providers must make changes by utilizing technology applications for online distance learning (Murnaka et al., 2021; Paduppai et al., 2019, 2021).

PP PAUD and Dikmas Central Java is an institution that has the task of carrying out the development of models and quality of Early Childhood Education and Community Education. PAUD and Dikmas are efforts to support the expansion of access and improvement of the quality of education services for the community. Since 2012 PP PAUD and Dikmas Central Java have developed a program using an innovative approach through the use of Information and Communication Technology, namely the implementation of education and training through an Electronic Learning (e-learning) system. This e-learning was developed in an effort to increase the competence of educators in various areas of expertise competence, one of which is Early Childhood Education Educators.

The effectiveness of the implementation of education and training is reflected in the achievement of the objectives to be achieved, namely increasing knowledge, skills, and changing attitudes of participants to work better. Kirkpatrick & Kirkpatrick (2006) mention that in the assessment/measurement of the effectiveness of education and training there

are four levels, namely: 1) Reaction/Response; 2) Learning (Learning); 3) Behavior; and 4) Results (Results). The purpose of this study was to determine the effectiveness of the training management model for developing e-learning based learning videos to improve teacher competence in making teaching materials in PP PAUD and Dikmas Central Java.

RESEARCH METHODS

The method used in this study is a quantitative method. This study uses a pre-experimental type of research with a One Group Posttest Only Design type of design. The research design can be described as follows (Sugiyono, 2016).
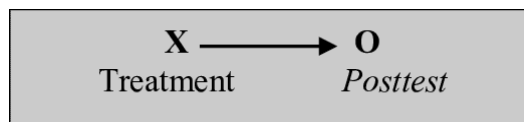
$$X \longrightarrow O$$

Treatment   *Posttest*

Figure 1. Research design

The sample in this study were early childhood education educators in the city of Semarang, totaling 12 people and coming from 2 different Community Learning Activity Centers. The instruments used in the study were questionnaires and tests. The meeting was held 4 times. The first meeting was used to present the storyboard material; The second meeting was used for storyboarding by participants; the third meeting is used to explain the making of teaching videos; the fourth meeting of making learning videos by participants

RESULTS AND DISCUSSION

This research was conducted on early childhood education teachers throughout the city of Semarang, which was attended by 12 early childhood education teachers. Teachers who want to take part in education and training activities are asked to register themselves first via the Google form link (https://bit.ly/3GXCo8G) or by scanning the following QR code.
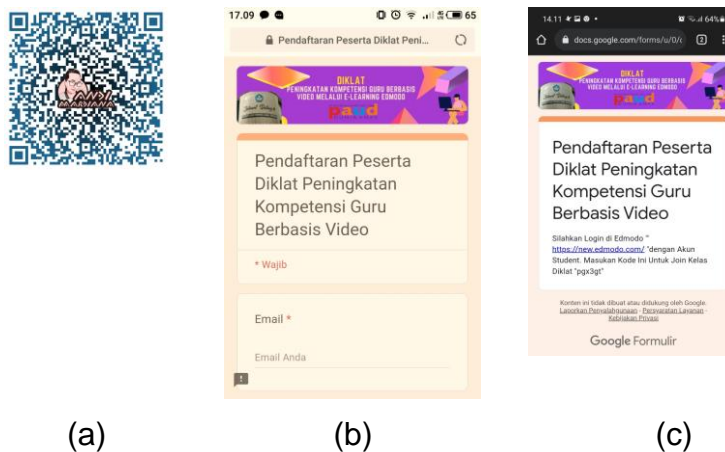

(a)   (b)   (c)

Figure 2 (a) QR Code ; (b) Registration of Education and Training; (c) Code of Education and Training Class

The implementation of research activities is carried out in a hybrid way (offline and online). The activity began with a presentation about the Edmodo open course. The introduction of the Edmodo platform, which is an open course, is used as an E-learning medium in video-based teacher competency development training. The following is an example of research activity documentation.

Figure 2 Research Participants

The Edmodo platform was chosen because Edmodo is an open course that allows everyone to join and participate in training activities.
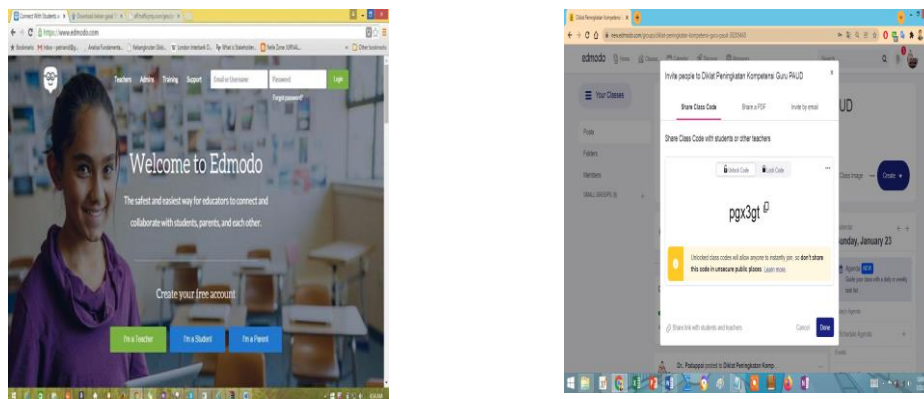

Figure 3. Open Course Edmodo

Edmodo is an E-learning platform that can be used as a vehicle for efficient communication and discussion for instructors and training participants. Through Edmodo, training participants with one another can easily interact and discuss with direct monitoring from the instructor.
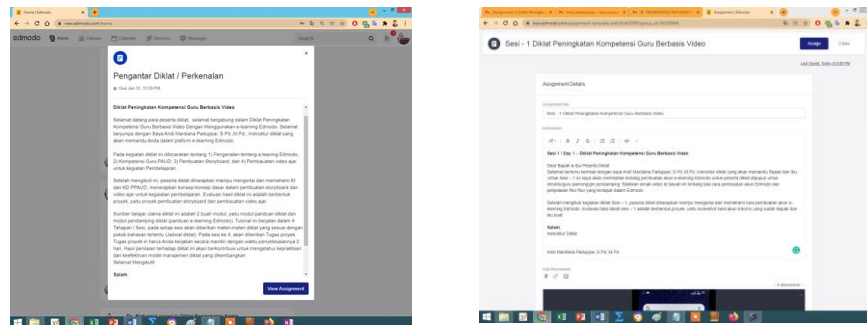
Figure 4. Stages of Each Activity in Edmodo

In this activity, the instructor after introducing Edmo do and how to use it, the instructor uses the Edmo do to provide instructions, motivation, appreciation, and assignments to training participants. Training participants pay attention and perform demonstrations instructed by the instructor
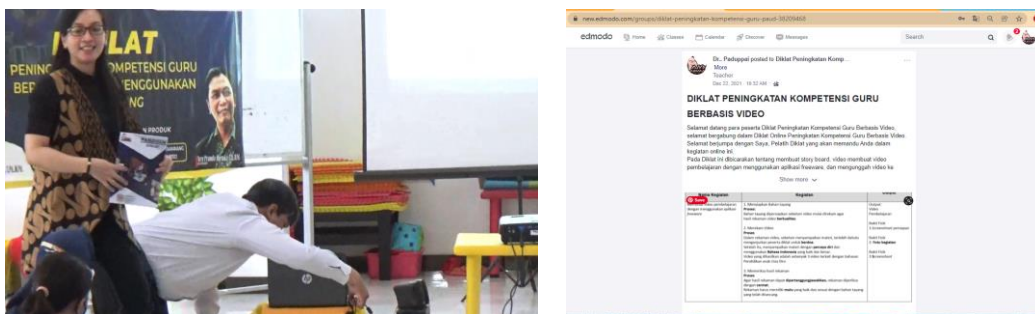
Figure 5. Presentation of Procedures for Using the Edmodo Education and Training Application

The final task of training in improving teacher competence is in the form of a project. The assignments given to the training participants are making storyboards and making videos for learning activities. Examples of assignments to training participants and the results of submitting assignments from training participants to training instructors are as shown in figure 5. Participants who complete all stages of training and get a score above the passing garde (passing grade 70.00) will be declared passed.

Figure 6. Examples of Assignment Activities and Submission of Education and Training Tasks

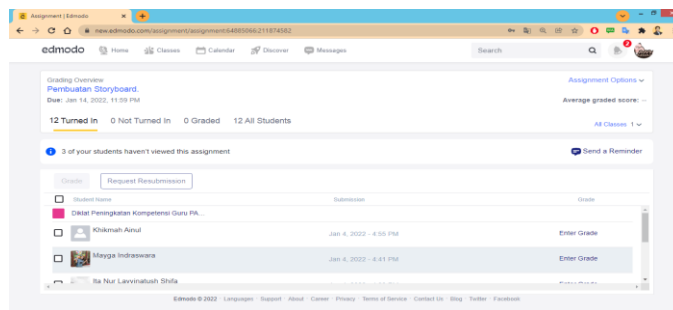The following are the responses of the training participants to: 1) the implementation of the training; 2) the training module (covering the feasibility of presenting and content of the module); 3) training videos; 4) the effectiveness of the training results

1. The response of the training participants to the implementation of the training.

Table 1 Responses of Training Participants to the Training Trial

Rating	Item indicator	Average	
		Item	Indicator
A. Training Materials	1. The training materials that I follow are in accordance with work needs	4.77	4.77
	2. The training materials that I follow are in accordance with the objectives of the training	4.69	
	3. The training material that I attended was delivered in an interesting way and discussed in depth	4.77	
	4. The training materials that I participate in can provide benefits in terms of knowledge and skills in my field of work	4.77	
	5. The training materials that I follow can be accepted and applied easily	4.85	
	6. The training material that I attended was delivered in a clear and systematic manner	4.77	
B. Training Method	7. The training that I follow uses the appropriate training method with the topic being discussed	4.92	4.79
	8. Implementation of the training that I follow is in accordance with the schedule that has been set and on time	4.69	
	9. The education and training committee has the readiness to help the training participants	4.77	
C. Training Instructor	10. The training instructor mastered the material presented	4.85	4.86
	11. The training instructor can interact well with the training participants	4.77	

Rating	Item indicator	Average	
		Item	**Indicator**
	12. The training instructor provides the opportunity for the training participants to ask questions	4.92	
	13. The training instructor delivers the training material clearly, coherently, and easily understood	4.69	
	14. The training instructor that I follow can master the material being taught	4.92	
	15. The training instructor that I follow can encourage me and other participants to be active in training activities	4.85	
	16. The language used during the delivery of the training material uses language that is easy to understand	4.92	
	17. The training instructor is always ready to help the training participants during the training	4.92	

2) The response of the training participants to the training module (covering the feasibility of the presentation and content of the module);

Table 1 Feasibility of Education and Training Module Contents by Training Trial Participants

Indicator	Rating Items	Total Score	Average	Average of Each Indicator
Module Size	1. The size of the module corresponds to the display.	57	4.38	4.38
	2. Size conformity with the content of the module.	57	4.38	

Indicator	Rating Items	Total Score	Average	Average of Each Indicator
Cover Design	3. The appearance of the layout elements on the front, back and back covers harmoniously has rhythm and unity and is consistent.	58	4.46	4.46
Module (Cover)	4. The color of the elements of the layout is harmonious and clarifies the function.	57	4.38	4.40
	5. The letters used are attractive and easy to read.	56	4.31	
	6. Do not use too many typeface combinations.	58	4.46	
	7. Module cover illustration (shape, color, size, proportion of objects according to reality).	58	4.46	
Content Design	8. Consistency of placement of layout elements is consistent based on the pattern and clarity of separation between paragraphs.	54	4.15	4.15
Module	9. Harmonious layout elements (print area and proportional margin).	56	4.31	4.14
	10. Elements of layout which include the title of learning activities, subtitles of learning activities, and page/folio numbers are presented in full.	54	4.15	
	11. Placement of decoration/illustration as a background does not interfere with the title, text, and page numbers.	53	4.08	

Indicator	Rating Items	Total Score	Average	Average of Each Indicator
	12. Content illustration is able to reveal the meaning of the object.	51	3.92	
	13. The illustrations of the content presented are accurate, proportional, creative, and dynamic in accordance with reality.	55	4.23	

Table 2 Feasibility of Presentation of the Education and Training Module by Participants of the Training Trial

Indicator	Rating Items	Total Score	Average	Average of Each Indicator	Indicator
Content Feasibility Aspect					
A. The suitability of the material with KD	1. Completeness of materials	55	4.23	4.15	4.20
	2. The breadth of the material	54	4.15		
	3. Material depth	53	4.08		
B. Material Accuracy	4. Concept and definition accuracy	56	4.31	4.22	
	5. Accuracy of data and facts	56	4.31		
	6. Sample and case accuracy	55	4.23		
	7. Accuracy of drawings and illustrations	54	4.15		
	8. Accuracy of terms	53	4.08		

Indicator	Rating Items	Total Score	Average	Average of Each Indicator	Indicator
C. Up-to-date materials	9. Pictures, diagrams and illustrations in everyday life	54	4.15	4.19	
	10.Using examples of cases found in everyday life	55	4.23		
D. Encourage Curiosity	11. Encourage curiosity	56	4.31	4.23	
	12.Create the ability to ask questions	54	4.15		
Aspects of Feasibility of Presentation					
A. Presentation Techniques	13. Material collapse	55	4.23	4.23	
B. Presentation Support	14. Introduction	56	4.31	4.31	
	15. Bibliography	56	4.31		
C. Presentation of Education and Training	16. Involvement of training participants	57	4.38	4.38	4.31
D. Coherence and Coherence of Thoughts	17. Linkages between activities / sub activities / paragraph	57	4.38	4.31	
	18. Integrity of meaning in activities / sub activities / paragraphs	55	4.23		
Language Eligibility Aspect					
E. Straightforward	19. Sentence Structure Accuracy	56	4.31	4.15	4.12

Indicator	Rating Items	Total Score	Average	Average of Each Indicator	Indicator
	20. Sentence Effectiveness	55	4.23		
	21. Terminology	51	3.92		
F. Dialogic and Interactive	22. Able to motivate training participants	55	4.23		
G. Compliance with Language Rules	23. Grammatical accuracy	53	4.08	4.08	
	24. Spelling Accuracy	51	3.92		

3) The response of the training participants to the training video.

Table 3 Feasibility of Presentation of Training Videos by Training Trial Participants

Indicator	Rating Items	Total Score	Average	Average of Each Indicator
A. Functions and Benefits	1. Able to clarify and make it easier for me to receive training messages	57	4.38	
	2. My interest and motivation grew after attending the training	56	4.31	4.35
	3. I understand more about the training material	58	4.46	

Indicator	Rating Items	Total Score	Average	Average of Each Indicator
	4. I got an idea regarding PAUD material after watching the Education and Training video	57	4.38	
	5. The presentation in this video makes it easier for me to be able to do independent learning	55	4.23	
B. Visual Media Aspects	6. Selection of attractive colors, backgrounds, text, images and animations.	53	4.08	4.29
	7. Image size is appropriate (ideal)	57	4.38	
	8. The picture of the material can be seen clearly	54	4.15	
	9. Image lighting is correct	57	4.38	
	10. Image movement speed is appropriate and easy to capture	56	4.31	
	11. Presentation of this video can facilitate independent learning for me	58	4.46	
C. Audio Media Aspects	12. The rhythm of the voice presented by the narrator is in accordance with the needs of the training participants (Not too fast and not too slow)	56	4.31	4.50
	13. The narrator's voice is clear and informative	59	4.54	

Indicator	Rating Items	Total Score	Average	Average of Each Indicator
	14. The sound of the music matches the atmosphere and the image display	57	4.38	
	15. Proper use of background	62	4.77	
D. Language	16. The language used is easy to understand	60	4.62	4.65
	17. The language used is scientific and easy to understand	61	4.69	
E. Operational Presentation	18. The presentation of the material in this video is sequential	60	4.62	4.58

4. The response of the training participants to the implementation of the training.

To determine the effectiveness of the video-based teacher competency improvement training management model developed in this study, a product trial was carried out with a posttest only design trial design.

In the post-test only design, the researcher knows the effectiveness of the training model developed. This is done by giving a final project in the form of a project to make storyboards and learning videos. This effectiveness can be seen from the completeness of the training participants who are able to achieve a value above the passing grade (80.00). The assessment of the results of the training participants' scores was obtained from the average score between the storyboard assignments and the learning videos made by the training participants. To test the effectiveness, it can be seen from the results of classical completeness of each training participant using the one sample t-test. Each training participant is said to be complete if he meets the classical completeness requirements according to Winkel (2007: 466) if 80% of the training participants reach a passing grade (passing grade 80).

The hypothesis to be tested is

$H_0 : \pi \leq \pi_o$, the proportion of training participants who achieved the passing grade had not yet exceeded 80%.

$H_1 : \pi > \pi_o$, the proportion of training participants who achieved passing has exceeded 80%.

Furthermore, these results are compared with the sig obtained with the test criteria of 5%. If Sig < then H0 is rejected as a result H1 is accepted, meaning that the completeness of the proportion exceeds 80% (Sudjana, 2005: 233).

Table 4. Limited Trial Training Trial

(Storyboard and Video Results Assessment)

No	Respondents	Average		Assessment of Each Training Participant
		StoryBoard	Videos	
1	Respondents _1	95.00	90.59	92.79
2	Respondents _2	95.00	90.59	92.79
3	Respondents _3	95.00	90.59	92.79
4	Respondents _4	86.67	90.59	88.63
5	Respondents _5	86.67	90.59	88.63
6	Respondents _6	86.67	90.59	88.63
7	Respondents _7	96.67	95.29	95.98
8	Respondents _8	96.67	95.29	95.98
9	Respondents _9	96.67	95.29	95.98
10	Respondents _10	88.33	80.00	84.17
11	Respondents _11	88.33	80.00	84.17
12	Respondents _12	96.67	94.12	95.39
13	Respondents _13	96.67	94.12	95.39
Average Score		92.69	90.59	91.64
Standard Deviation		4.49	5.13	4.36

From the table above, it is known that the number of respondents (training participants) = 12 participants. By using the one sample t-test through the SPSS program, the following results were obtained.

Table 5. Results of Analysis of the Effectiveness of Education and Training Tasks

One-Sample Test						
	Test Value = 80					
Note:	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Storyboard	10.193	12	.000	12.69385	9.9804	15.4073
Videos	7.446	12	.000	10.58846	7.4900	13.6869
Value Training	9.641	12	.000	11.64000	9.0095	14.2705

From the SPSS output test, it was obtained that the sig value for the training value = 0.000 <, this means that H0 is rejected and H1 is accepted, meaning that classical completeness exceeds 80% (Sudjana, 2005: 233). This means that the training participants are able to receive the training material well and are able to apply it well as well.

CONCLUSION

From the results of data analysis and discussion, it is known that the training management model for developing video-based learning videos using e-learning to improve teacher competence in making teaching materials in PP PAUD and DIKMAS Central Java is effective.

REFERENCES

Devi, R., & Shaik, N. (2012). Evaluating training & development effectiveness - A Measurement Model. *Asian Journal of Management Research*, *2*(1), 722.

Gordon, A. ., & K.M, B. (2011). *Beginning and Beyond, Foundation in Early Childhood Education*. Wadsworth Cengage Learning.

Jones, J., Jenkin, M., & Lord. (2006). *Developing Effective Teacher Performance*. Paul Chapman Publising.

Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). *Evaluating Training Programs: The Four Levels (3rd ed.)*. Berrett-Koehler Publishers, Inc.

Mulyasa, E. (2005). *Manajemen berbasis sekolah: konsep, strategi dan implementasi*. Depdiknas.

Murnaka, N. P., Rusdarti, Rustono, & Sudana, I. M. (2021). Determinant Of Teacher Performance. *NVEO-NATURAL VOLATILES & ESSENTIAL OIL*, *8*(5), 12249.

Paduppai, A. M., Hardyanto, W., Hermanto, A., & Yusuf, A. (2019). Pengembangan sistem informasi manajemen dalam peningkatan mutu layanan pendidikan dan android di era revolusi digital (Society 5.0 dan Revolusi Industri 4.0). *Prosiding Seminar Nasional Pascasarjana (PROSNAMPAS)*, 84–89.

Paduppai, A. M., Hardyanto, W., Hermanto, A., & Yusuf, A. (2021). The Role Of Massive Open Online Courses (MOOC) In Training During The Covid-19 Pandemi. *Turkish Journal of Physiotherapy and Rehabilitation*, *XX*(X).

Sugiyono. (2016). *Metode Penelitian Kuantitatif kualitatif dan R&D. *. Alfabeta.

Devi, R., & Shaik, N. (2012). Evaluating training & development effectiveness - A Measurement Model. *Asian Journal of Management Research*, *2*(1), 722.

Gordon, A. ., & K.M, B. (2011). *Beginning and Beyond, Foundation in Early Childhood Education*. Wadsworth Cengage Learning.

Jones, J., Jenkin, M., & Lord. (2006). *Developing Effective Teacher Performance*. Paul Chapman Publising.

Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). *Evaluating Training Programs: The Four Levels (3rd ed.)*. Berrett-Koehler Publishers, Inc.

Mulyasa, E. (2005). *Manajemen berbasis sekolah: konsep, strategi dan implementasi*. Depdiknas.

Murnaka, N. P., Rusdarti, Rustono, & Sudana, I. M. (2021). Determinant Of Teacher Performance. *NVEO-NATURAL VOLATILES & ESSENTIAL OIL*, *8*(5), 12249.

Paduppai, A. M., Hardyanto, W., Hermanto, A., & Yusuf, A. (2019). Pengembangan sistem informasi manajemen dalam peningkatan mutu layanan pendidikan dan android di era revolusi digital (Society 5.0 dan Revolusi Industri 4.0). *Prosiding Seminar Nasional Pascasarjana (PROSNAMPAS)*, 84–89.

Paduppai, A. M., Hardyanto, W., Hermanto, A., & Yusuf, A. (2021). The Role Of Massive Open Online Courses (MOOC) In Training During The Covid-19 Pandemi. *Turkish Journal of Physiotherapy and Rehabilitation*, *XX*(X).

Sugiyono. (2016). *Metode Penelitian Kuantitatif kualitatif dan R&D.* . Alfabeta.

Devi, R., & Shaik, N. (2012). Evaluating training & development effectiveness - A Measurement Model. *Asian Journal of Management Research*, *2*(1), 722.

Gordon, A. ., & K.M, B. (2011). *Beginning and Beyond, Foundation in Early Childhood Education*. Wadsworth Cengage Learning.

Jones, J., Jenkin, M., & Lord. (2006). *Developing Effective Teacher Performance*. Paul Chapman Publising.

Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). *Evaluating Training Programs: The Four Levels (3rd ed.)*. Berrett-Koehler Publishers, Inc.

Mulyasa, E. (2005). *Manajemen berbasis sekolah: konsep, strategi dan implementasi*. Depdiknas.

Murnaka, N. P., Rusdarti, Rustono, & Sudana, I. M. (2021). Determinant Of Teacher Performance. *NVEO-NATURAL VOLATILES & ESSENTIAL OIL*, *8*(5), 12249.

Paduppai, A. M., Hardyanto, W., Hermanto, A., & Yusuf, A. (2019). Pengembangan sistem informasi manajemen dalam peningkatan mutu layanan pendidikan dan android di era revolusi digital (Society 5.0 dan Revolusi Industri 4.0). *Prosiding Seminar Nasional Pascasarjana (PROSNAMPAS)*, 84–89.

Paduppai, A. M., Hardyanto, W., Hermanto, A., & Yusuf, A. (2021). The Role Of Massive Open Online Courses (MOOC) In Training During The Covid-19 Pandemi. *Turkish Journal of Physiotherapy and Rehabilitation*, *XX*(X).

Sugiyono. (2016). *Metode Penelitian Kuantitatif kualitatif dan R&D.* . Alfabeta.