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Effect of Animation and Review Video Making (Arvima) in Non-Classical Learning Model on Independent Learning and Students' Learning Outcome

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***Abstract*---**The non-classical learning model used in this study was a jigsaw type cooperative learning model with the assignment treatment of making learning material video which is expected to make it easier in finding knowledge in teaching materials, with the creativity of students' forming skills. The purpose of this study are to determine: (a) the effect of animation video and review video making in non-classical learning model on the ability to learn independently of students of the chemistry education study program at USN Kolaka, (b) the effect of animation video and review video making in non-classical learning model on the ability of spatial independence of students in the chemistry education study program at USN Kolaka, and (c) the effect of animation video and review video making in non-classical learning model on the learning outcome of students in the chemistry education study program at USN Kolaka. This research was a quasi-experimental research (quasy experiment) with a posttest only research design. The research population was students in the IV and VI semester of Chemistry Education Study Program. The instrument used was a questionnaire of learning independence, spatial ability and learning outcome.

***Keywords*---**animation, independence, non-classical learning, review, video.

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Introduction

The challenge for lecturers is being able to complete assignments from the smart device they hold using various methods and strategies, evidence that the pandemic era teaches lecturers to see students' success from the quality of output. The era of learning between millennial students and educators who are digital technology immigrants in the pandemic era changed the face of education. The educators must realize that the knowledge conveyed can be accepted by students, to be developed to ensure the quality of student learning in achieving knowledge and shaping the students' skills is a challenge for educators who have adapted to the digital era (Admin, 2020). Learning plans must consider the pedagogical aspects by taking into account the competencies obtained by students, competence is the main component of professional standards, besides being a code of ethics as a regulation of professional behavior which is stipulated as a certain procedure and supervision system (Baan, 2012). Pedagogic competence includes understanding the insight or educational foundation, understanding the characteristics of students from the physical, moral, spiritual, social, cultural, emotional and intellectual aspects (Destiana & Utami, 2017).

The result of initial observation found that the online learning process is still teacher-centered, so that students' learning independence is a consideration in the distance learning process. In addition, the problem of unstable internet connection is a challenge in the distance learning process (PJJ). The solution offered is independent learning for students in utilizing technology, namely students are formed independently through the discovery of knowledge related to teaching materials (Cintia et al., 2018). The importance of increasing knowledge and skills is the reason for measuring students' learning independence. Spatial ability is one part of multiple intelligences which is seen as higher, especially in the era of technology 4.0. Spatial intelligence is intelligence in understanding images and colors. National education makes quality of learning outcome as output, achievement of learning outcome will be determined by the quality of learning process (Dhian Agung & Sumaryanto, 2018). Based on the description, this research is very important to be carried out to examine the effect of animation and review video making (arvima) in non-classical learning model on learning independence, spatial ability and students' learning outcome (Jancovici et al., 1996; Wang et al., 2004).

The ability to innovate and foster students' learning enthusiasm is one of the measurements of the quality of the learning process (Abdullah, 2017). The innovation in online learning by involving students in making videos, they are mobilized to seek and find the knowledge related to the teaching materials, so that it will last longer in students' memories (Ahmar et al., 2020). Learner-centered learning is one of the teaching approaches in the education to provide equal opportunities to the students (Marpaung & Azzajjad, 2020). Even though online learning takes place via the internet, students are expected to continue to develop higher-order thinking skills. Each lecturer can have their own consideration to choose which learning model is considered the most suitable to be held in students learning Shafira et al. (2020), assigning the students to make videos of learning materials will make it easier to find knowledge in teaching materials, with the creativity of students forming their skills. Video learning is an

audio-visual tool to be an attraction in the learning process, because understanding the teaching materials will be easier. The digital era is always interesting for students, the hobby of internet access will be more positive by making learning videos (Richardson & Wisheart, 1996; Blundell & MaCurdy, 1999).

Learning video media is a media that presents audio and visual that contains good learning messages include concepts, principles, procedures, theory of application of knowledge to help understanding of the materials (Agustiningsih, 2015). Learning video is a product of the development of science and technology (IPTEK). It is as an alternative to obtain maximum output and as a means of learning to use all the senses, especially the senses of sight and hearing, which can provide benefit for students in mastering teaching materials. Based on the explanation of the theory, it can be concluded that the learning video is an alternative media in conveying messages in the learning process to support the student learning process (Stineman et al., 1997; Jobe et al., 2001).

Learning independence will support the achievement of motivation in supporting the successful implementation of effective and efficient learning activities (Marpaung & Azzajjad, 2020). Independent learning is a process of driving the internal strength or encouragement of individuals to move their potential without any external pressure or influence (Salmah et al., 2020). The high independence of learning will be seen from the habits of the students. Learning independence will shape the character of the students to have high learning awareness and will have the ability to get used to being creative and always innovating human beings (Azzajjad et al., 2020).

The concept of spatial thinking is interesting to be studied. Many students have difficulty in understanding objects or images. Spatial thinking is a cognitive skill that combines spatial concepts, representational tools, and reasoning processes. Perception of an object or image is influenced by the capacity of the ability to express a point of view on the object. In various disciplines, spatial ability is needed. It needs to be developed properly to support success in the learning environment (Syahputra, 2013). In the learning activity, changes in intellectual, emotional and attitude aspects (skills) will be seen in the form of learning outcome. Learning outcome is a person's ability, skill and attitude in solving problems. Learning can be realized if the students get good results from the process. The cognitive domain is concerned with intellectual learning outcome which consist of six applications, analysis, synthesis and evaluation (Zhang et al., 2007; Kandaswamy et al., 2010).

Method

This research was a quasi-experimental research (quasi experiment) with the following variables:

- The independent variable was animation video and video review making in non-classical learning model.
- The dependent variable was on learning independence and learning outcome.

The experimental class was taught by using animation video and review video making in a non-classical learning model, while the control class was taught using a non-classical learning model only. In measuring posttest, it was done through a learning independence questionnaire, and students' learning outcome. The data analysis techniques used were:

- Descriptive statistical analysis to describe the characteristics of the distribution of students' posttest scores in the experimental class and control class, including the highest, lowest, average and standard deviation scores.
- Inferential statistical analysis to test research hypotheses using the program SPSS for windows 20.

Result and Discussion

Based on the research result, it was obtained descriptive information and inferential analysis (data analysis) which then provide an overview of the effect of *animation and review video making (Arvima)* in non-classical learning model on learning independence, spatial ability, and students' learning outcome. The research was carried out at the Chemistry Education Study Program, University of Sembilanbelas November, Kolaka. The measurement of each variable is as follows:

Learning independence

The mental processes of students, one of which is an effort to build learning independence, the resilience of students in carrying out tasks during a pandemic is a challenge for educators. The shift of the offline learning system to online requires lecturers to teach students with different learning climate. Independent learning is a solution in responding to the challenges of the times in the COVID-19 era. The following are the result of descriptive statistical analysis of students' learning independence:

Table 1
Table of descriptive statistical analysis result of students' learning independence

Descriptive Statistics					
Measurement	N	Min	Max	Mean	Std. Dev.
Learning Independence of Experimental Class	20	96	120	105.80	5.662
Learning Independence of Control Class	20	89	100	94.85	3.183

Descriptive analysis for variable learning independence showed that the information learning independence in the experimental class and control class had a minimum score of 96 and 89, the maximum score of 120 and 100, the average score the mean was 105.80 and 94.85, and the standard deviation was 5,662 and 3,183. Prerequisite test result showed that the data fulfill the prerequisite test, so the test was processed using inferential statistics parametric unpaired sample t-test.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Kemandirian Belajar	Equal variances assumed	2.813	.102	7.539	38	.000	10.95000	1.45254	8.00949	13.89051
	Equal variances not assumed			7.539	29.920	.000	10.95000	1.45254	7.98319	13.91681

Figure 1. The result of learning independence inferential analysis

The results of the analysis test used the unpaired sample t-test showed a significance value of <0.05. It provided information that there is an effect of *animation and review video making (Arvima)* in non-classical learning model on students' learning independence. Learning independence of students, especially in online learning, needs to be supported by independent study habit supported by learning technology that trains the responsible attitudes and learning initiatives (Hidayat et al., 2020). This study involved students in making video and then doing *video making reviews* to achieve students' competence and more independent in learning. The results of independent learning will improve the learning quality of students in using their abilities to achieve good learning outcome (Laksana & Hadijah, 2019). Based on the result of the measurement and data analysis, the learning independence of students who were taught by *animation and review video making (Arvima)* in a non-classical learning model is better (Lee & Magnenat-Thalmann, 2000; Höffler & Leutner, 2007).

Learning outcome

Since the pandemic, several agencies have implemented *Work from Home (*WFH) or do the activities at home. Online learning (non-classical) is a solution for implementing the learning. It has shifted the role of teachers and parents in assisting the students in learning. Seeing the negative and positive effects that may occur, understanding the material plays a very important role in the formation of students' learning abilities (Khurriyati et al., 2021). Providing the treatment with *video making and the review* becomes a consideration for teaching students so that they can find knowledge and be more memorable in the learning process. Learning outcome is a determinant of students' abilities after participating in the learning process (Daniati et al., 2020). The result of the measurement of learning outcome data obtained descriptive analysis information, as follows:

Table 2
Table of descriptive analysis of learning outcome

Descriptive Statistics	N	Min	Max	Mean	Std. Dev.
Learning Outcome of Experimental Class	20	69	100	85.51	10.322
Learning Outcome of Control Class	20	47	98	69.89	17.448

The result of descriptive analysis showed that the experimental class and control class data were minimum scores 69 and 47, maximum scores was 100 and 98, average scores was 85.51 and 69.89, and standard deviation of 10,322 and 17,448. The result of the prerequisite test measurement obtained information that the learning outcome data had fulfilled, then data analysis was carried out using parametric testing. The following is a table of inferential analysis of student learning outcome.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Hasil Belajar	Equal variances assumed	9.848	.003	3.447	38	.001	15.62500	4.53314	6.44815	24.80185
	Equal variances not assumed			3.447	30.847	.002	15.62500	4.53314	6.37775	24.87225

Figure 2. Inferential analysis of students' learning outcome

The result of the analysis test used the unpaired sample t-test showed a significance value of <0.05. It provided information that there is an effect of *animation and review video making (Arvima)* in non-classical learning model on student learning outcome. The result of the measurement and data analysis indicated that the students who were taught by *showed animation and review video making (Arvima)* in non-classical learning model are better. The result of the description of the two variables, *animation and review video making (Arvima)* in non-classical learning model plays a role in shaping students' learning independence, students have self-confidence because they have found their own information related to learning materials by visualizing through technology *video making*, students are able to work alone (doing, completing and being satisfied with the result obtained in the learning process), students are able to appreciate the time shown by the ability to use free time for *video making* responsibly, be responsible by having a commitment to the task as a student, have a competitive desire shown from *animation and review video making* forms the character of the

ability to compete to advance, and be able to make decisions to achieve learning objectives in accordance with the lecture materials (Talosa et al., 2021; Atmowardoyo & Sakkir, 2021).

Students' ability to answer questions based on taxonomic levels (learning outcomes) can be achieved by involving cognitive levels of remembering (C1), understanding (C2), applying (C3), analyzing (C4), evaluating (C5) and creating (C6). The competencies needed in carrying out the task of educating are the moral responsibility of the lecturer; students' competencies become *outputs* in producing the *performance.* These abilities are inherent in students and cannot be separated from the learning process that has been carried out. The competence of lecturers that become the ability or ability to manage learning is a challenge that is not easy. It takes evaluation and reflection to realize a good education management (Gani et al., 2018; Suarez et al., 2019).

The active role of students in the online learning process (non-classical) is needed to create a comfortable and effective learning climate, student enthusiasm in mental strengthening and cognitive abilities will affect the output. Students' mental readiness cannot be separated from independence in the classroom process; cognitive readiness (competence) becomes the basis for diagnosing learning difficulties and a continuous process in building students' understanding of teaching materials. Processing information properly will familiarize the students with more systematic thinking (Pingge & Wangid, 2016).

Conclusion

The result of the analysis of learning independence used the unpaired sample t-test showed a significance value of <0.05 It provided the information that there is an effect of animation and review video making (Arvima) in non-classical learning model on student learning independence. The result of the analysis of learning outcome used the unpaired sample t-test showed a significance value <0.05 which providing the information that there is an effect of animation and review video making (Arvima) in non-classical learning model on students' learning outcome (Widana et al., 2020; Amori, 2021).

The result of the description of the three variables then animation and review video making (Arvima) in non-classical learning model play a role in shaping students' learning independence. Students have self-confidence because they have found their own information related to the learning materials by visualizing through video making technology, students are able to work alone (do, complete and are satisfied with the result obtained in the learning process), students are able to appreciate the time shown by the ability to use spare time for video making responsibly, responsible by having a commitment to the task as a student, having a competitive desire shown from animation and review video making characterize the ability to compete to advance, and be able to make decisions to achieve learning objectives in accordance with the lecture materials.

References

Abdullah, R. (2017). Pembelajaran dalam perspektif kreativitas guru dalam pemanfaatan media pembelajaran. *Lantanida Journal*, *4*(1), 35-49.

Admin. (2020). Peran Pendidik: Transformasi, Adaptasi Dan Metamorfosis Dunia Pendidikan Di Masa Pandemi Covid-19. Universitas Tanjungpura.

Agustiningsih, A. (2015). Video sebagai alternatif media pembelajaran dalam rangka mendukung keberhasilan penerapan kurikulum 2013 di sekolah dasar. *PEDAGOGIA: Jurnal Pendidikan*, *4*(1), 50-58.

Ahmar, D. S., Azzajjad, M. F., & Syahrir, M. (2020). Students' Representation Ability in Chemistry. *Journal of Applied Science, Engineering, Technology, and Education*, *2*(2), 181-187.

Amori, H. (2021). Linguistics for language learning and research. *Macrolinguistics and Microlinguistics*, *2*(1), 28–36. Retrieved from https://mami.nyc/index.php/journal/article/view/13

Atmowardoyo, H., & Sakkir, G. (2021). Effects of best-practice based materials in receptive language learning behaviours in improving receptive language skills. *Linguistics and Culture Review*, *5*(S1), 1313-1334. https://doi.org/10.21744/lingcure.v5nS1.1604

Azzajjad, M. F., Ahmar, D. S., & Syahrir, M. (2020). The Effect of Animation Media in Discovery Learning Model on Students' Representation Ability on Chemical Equilibrium Materials. *Journal of Applied Science, Engineering, Technology, and Education*, *2*(2), 204-209.

Baan, A. B. (2012). The development of physical education teacher professional standards competency. *Journal of Physical Education and Sports*, *1*(1).

Blundell, R., & MaCurdy, T. (1999). Labor supply: A review of alternative approaches. *Handbook of labor economics*, *3*, 1559-1695. https://doi.org/10.1016/S1573-4463(99)03008-4

Cintia, N. I., Kristin, F., & Anugraheni, I. (2018). Penerapan model pembelajaran discovery learning untuk meningkatkan kemampuan berpikir kreatif dan hasil belajar siswa. *Perspektif ilmu pendidikan*, *32*(1), 67-75.

Daniati, D., Ismanto, B., & Luhsasi, D. I. (2020). Upaya Peningkatan Motivasi dan Hasil Belajar Mahasiswa dengan Penerapan Model Pembelajaran E–Learning Berbasis Google Classroom pada Masa Pandemi Covid-19. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, *6*(3), 601-608.

Destiana, B., & Utami, P. (2017). Urgensi kompetensi pedagogik guru vokasional pada pembelajaran abad 21. *Elinvo (Electronics, Informatics, and Vocational Education)*, *2*(2), 211-222.

Dhian Agung, A., & Sumaryanto, S. (2018). Pengaruh Motivasi Dan Mental Berwirausaha Terhadap Minat Mahasiswa Akuntansi Untuk Berwirausaha Studi Pada Mahasiswa Universitas Ahmad Dahlan.

Gani, A. A., Ibrahim, N., & Khaerudin, .-. (2018). Multimedia use and learning styles on learning achievement in social studies. *International Journal of Social Sciences and Humanities*, *2*(2), 187-193. https://doi.org/10.29332/ijssh.v2n2.163

Hidayat, D. R., Ana Rohana, & Fildzah Nadine. (2020). Self-Regulated Learning Of Students Studying Online During Covid-19 Pandemic. 34(2), 147–154.

Höffler, T. N., & Leutner, D. (2007). Instructional animation versus static pictures: A meta-analysis. *Learning and instruction*, *17*(6), 722-738. https://doi.org/10.1016/j.learninstruc.2007.09.013

Jancovici, R., Lang-Lazdunski, L., Pons, F., Cador, L., Dujon, A., Dahan, M., & Azorin, J. (1996). Complications of video-assisted thoracic surgery: a five-year experience. *The Annals of thoracic surgery*, *61*(2), 533-537. https://doi.org/10.1016/0003-4975(95)01060-2

Jobe, J. B., Smith, D. M., Ball, K., Tennstedt, S. L., Marsiske, M., Willis, S. L., ... & Kleinman, K. (2001). ACTIVE: A cognitive intervention trial to promote independence in older adults. *Controlled clinical trials*, *22*(4), 453-479. https://doi.org/10.1016/S0197-2456(01)00139-8

Kandaswamy, K. K., Pugalenthi, G., Hartmann, E., Kalies, K. U., Möller, S., Suganthan, P. N., & Martinetz, T. (2010). SPRED: A machine learning approach for the identification of classical and non-classical secretory proteins in mammalian genomes. *Biochemical and biophysical research communications*, *391*(3), 1306-1311. https://doi.org/10.1016/j.bbrc.2009.12.019

Khurriyati, Y., Setiawan, F., & Mirnawati, L. B. (2021). Dampak Pembelajaran Daring Terhadap Hasil Belajar Siswa Mi Muhammadiyah 5 Surabaya. *Jurnal Ilmiah Pendidikan Dasar*, *8*(1), 91-104.

Laksana, A. P., & Hadijah, H. S. (2019). Kemandirian belajar sebagai determinan hasil belajar siswa. *Jurnal Pendidikan Manajemen Perkantoran (JPManper)*, *4*(1), 1-7.

Lee, W. S., & Magnenat-Thalmann, N. (2000). Fast head modeling for animation. *Image and Vision Computing*, *18*(4), 355-364. https://doi.org/10.1016/S0262-8856(99)00057-8

Marpaung, D. N., & Azzajjad, M. F. (2020). The Effectiveness of Student Centre Learning in Experiment Method on Acid and Base Solution to Increase Student Achievement. *Journal of Applied Science, Engineering, Technology, and Education*, *2*(1), 32-36.

Pingge, H. D., & Wangid, M. N. (2016). Faktor yang mempengaruhi hasil belajar siswa sekolah dasar di kecamatan kota Tambolaka. *Jurnal Pendidikan Sekolah Dasar Ahmad Dahlan*, *2*(1), 107-122.

Richardson, M. O. W., & Wisheart, M. J. (1996). Review of low-velocity impact properties of composite materials. *Composites Part A: Applied Science and Manufacturing*, *27*(12), 1123-1131. https://doi.org/10.1016/1359-835X(96)00074-7

Salmah, A., Relita, D. T., & Suriyanti, Y. (2020). Hubungan Kemandirian Belajar Dan Motivasi Berprestasi Dengan Hasil Belajar Mata Pelajaran Ekonomi Siswa Kelas Xi Sman 01 Belimbing. *JURKAMI: Jurnal Pendidikan Ekonomi*, *5*(1), 45-54.

Stineman, M. G., Jette, A., Fiedler, R., & Granger, C. (1997). Impairment-specific dimensions within the Functional Independence Measure. *Archives of Physical Medicine and Rehabilitation*, *78*(6), 636-643. https://doi.org/10.1016/S0003-9993(97)90430-5

Suarez, A. M. S., Martinez, M. E. M., & Mendoza, L. R. M. (2019). Brain and learning. *International Journal of Social Sciences and Humanities*, *3*(2), 128-135. https://doi.org/10.29332/ijssh.v3n2.302

Syahputra, E. (2013). Peningkatan kemampuan spasial siswa melalui penerapan pembelajaran matematika realistik. *Jurnal Cakrawala Pendidikan*, *3*(3).

Talosa, A. D., Javier, B. S., & Dirain, E. L. (2021). The flexible-learning journey: phenomenological investigation of self-efficacy influencing factors among higher education students. *Linguistics and Culture Review*, *5*(S3), 422-434. https://doi.org/10.21744/lingcure.v5nS3.1590

Wang, Z., Lu, L., & Bovik, A. C. (2004). Video quality assessment based on structural distortion measurement. *Signal processing: Image communication*, *19*(2), 121-132. https://doi.org/10.1016/S0923-5965(03)00076-6

Widana, I.K., Dewi, G.A.O.C., Suryasa, W. (2020). Ergonomics approach to improve student concentration on learning process of professional ethics. Journal of Advanced Research in Dynamical and Control Systems, 12(7), 429-445.

Zhafira, N. H., Ertika, Y., & Chairiyaton, C. (2020). Persepsi mahasiswa terhadap perkuliahan daring sebagai sarana pembelajaran. *Jurnal Bisnis Dan Kajian Strategi Manajemen*, *4*(1).

Zhang, Y., Zhou, J., & Zhou, N. (2007). Audit committee quality, auditor independence, and internal control weaknesses. *Journal of accounting and public policy*, *26*(3), 300-327. https://doi.org/10.1016/j.jaccpubpol.2007.03.001