



Investigating Hybrid Learning Strategies: Does it Affect Creativity?

Aminah Zb¹, M. Eval Setiawan², Edi Rozal³, Fauzan Sulman^{4*}

¹Department of Biology Education, UIN Sulthan Thaha Saifuddin Jambi

²Department of Biology Education, Institut Agama Islam Negeri Kerinci

³Department of English Education, UIN Sulthan Thaha Saifuddin Jambi

^{4*}Department of Physics Education, UIN Sulthan Thaha Saifuddin Jambi

*Corresponding Author. Email: fauzansulman@uinjambi.ac.id

Abstract: This study aims to investigate the ability of the Hybrid Learning learning model on the creativity of biology education students in the educational innovation course. This research has been carried out using a quantitative approach with a quasi-experimental pretest-posttest control group design. The population in this study were biology education students in semester VI, Faculty of Education and Teacher Training at Sulthan Thaha Saifuddin State Islamic University Jambi, namely four classes with a population of 37 people, which was then sampled using the purposive sampling method where class VIA and VIC were the Experiment Class and Class VIB and VID was as a Control Class. The instrument used is was a test in the form of a description of ten items regarding creativity. Data analysis in this study used t-test. The results of the investigation showed a significant influence on the creativity of students who used hybrid learning even though lectures were conducted remotely and in the midst of the Covid-19 pandemic.

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Introduction

Changes in learning patterns amid the Covid-19 pandemic (Dong et al., 2020; Putra et al., 2021) require all educators to make maximum efforts in achieving learning goals so that they continue to run well. It is undeniable that in this technological era, there is no cognitive ability needed, but the Affective domain, which is shown by a wise and polite attitude that can create a balanced pattern of the three learning domains, namely, cognitive, affective, and psychomotor so that it is following the 21st century (Ozkazanc & Yuksel, 2015; Tuan Soh et al., 2010). In the learning process, it is considered successful if it has three domains with equally good abilities, by having these three skills, students are expected to have high creativity (Mishra et al., 2020; Sremcev et al., 2018; Trueman, 2014) whose ultimate goal is to maximize their understanding which will eventually make them resilient in facing global challenges (Brears et al., 2011; Honey et al., 2014) expands that the learning process must be able to be carried out under any conditions, this is because learning must still be able to maximize the potential of students in learning. meet expectations in the world of global education so that they are not less competitive with other countries (Oaks et al., 2013; Ridder, 2017; Yazan & De Vasconcelos, 2016)

A good education can certainly create professional educators (Zb et al., 2020) because lectures must provide the best solutions in all circumstances to maximize the lecture process, one of which demands high creativity (Sergis et al., 2018; Tanaka, 2013). Intention as a teacher is not just to complete teaching obligations but also requires creativity during normal and emergency conditions. Currently, an educator must emphasize creativity to incorporate

existing technology (Ahmad, 2013; Roca & Gagné, 2008). Creativity can be interpreted as an ability and intelligence. The above can be reviewed more deeply, wherein increasing a person's intelligence is very dependent on the creativity of a teacher who teaches in class (Sulman, 2019). Creativity as a whole can be seen as an ability to make the learning process more exciting and memorable to students whose primary goal is to increase student motivation and learning outcomes.

The role of educators in being creative in supporting student creativity can be placed on biology education students who are taking learning innovation courses so that when in the field, they are not only ready with teaching materials but are ready to build learning creativity (Carmi et al., 2015; Roshayanti et al., 2020). The educational process in increasing student creativity can be realized through a learning model appropriate to the conditions and times (Sastradika et al., 2021; Sulman et al., 2021), because a learning model is a means that can increase creativity in the lecture process. When viewed today, learning must be supported by technological developments, and seen in the current pandemic conditions that require online lectures, the right form of learning model is used is Hybrid learning.

Hybrid learning in research is a combination of synchronous and asynchronous learning (Hapke et al., 2020) which allows lecturers to carry out the lecture process with two forms of point of view, namely zoom meetings or face-to-face (synchronous) with a scheduled time, while asynchronous time is not determined, lecture content has been provided through a management system such as WhatsApp Group (Hapke et al., 2020; Pazich et al., 2018; Zb et al., 2020). Hybrid learning refers to the redesign of the learning model by changing from teacher-centred teaching to student-centred and is expected to be more active. Hybrid learning is also expected to increase interaction between teacher-students and students and utilize resources from the internet in a creative way. Hybrid learning is an innovation from traditional learning that uses technology in the form of distance learning.

The distance lecture process using the Hybrid learning model is considered very appropriate to be a lecture solution in the biology education study program in the midst of the Covid-19 pandemic, where around 65% still gave an unfavourable response in lecture activities (Zb et al., 2020). The new problem is that the online lecture system is implemented in the midst of a pandemic, so that it lacks a clear syntax (Sulman, 2019; Zb et al., 2020), and only around 10% of students who are able to be creative and think critically during lectures are carried out (Putra et al., 2021; Sulman et al., 2021; Zb et al., 2020). In contrast to the hybrid learning model, which feels new with its application, especially in Indonesia, it will be very precise and efficient in overcoming obstacles or problems that occur, especially in pandemic conditions. The lecture process far in the midst of the covid-19 pandemic should be the beginning of better and more effective lectures in the future.

They are implementing Hybrid learning strategies in innovation learning for biology education courses to know whether hybrid learning strategies can significantly affect student creativity amid the covid-19 pandemic to produce biology education students with high creative power in the form of creativity (Hernández-Torrano & Ibrayeva, 2020; Sulman, 2019), moreover; to support the independent learning program being promoted by the government as a solution in the process of distance learning amid a pandemic or in new normal conditions.

Research Method

In this study, this research used a quantitative approach with a quasi-experimental type of research with a pretest-posttest control group design (Creswell, 2012). The research process was carried out on biology education students in the even semester of the 2020/2021

academic year. The population in this study was Semester VI students who took educational innovation courses totaling 34 students. The sampling technique used in this study is a purposive sampling technique, which is based on the objectives of the researcher where classes VI A and VIC are practical classes that apply blended learning strategies assisted by zoom meetings and WhatsApps Groups, which are 17 people and class VI C and VI D are used as control class. Control that implements direct face-to-face learning carried out with zoom/Google meet, totaling 17 people. Before carrying out statistical tests, of course, prerequisite tests were carried out regarding the normality and homogeneity of the data with test scores. After confirming that the data were normally distributed and homogeneous, a t-test was conducted to see the effect of the Hybrid Learning model on student creativity.

In this study, the technique used to collect data was to test questions and document student activities. The documentation used in this study was student activities during lectures, whether given with the Hybrid learning model or not. Documentation data analysis was carried out as correlation data between theory and practice, reviewed using the student's creative thinking level test method. The test in this study was in the form of a description test of ten questions. Before the test was given, a logical test was carried out, namely the validity to related experts and content validity. Of the ten test questions in the form of descriptions, the experts gave suggestions in the form of comments for improving the instrument to be used for research so that ten valid questions were produced.

Results and Discussion

The facts found by researchers in the field, both based on facts and statistically analyzed data, obtained a very comprehensive picture, which showed students' enthusiasm during the Hybrid Learning model. In this research process, preliminary and final test data were obtained both in the experimental class and in the control class, all of which focused on the point of view of student learning creativity in innovation courses which were very important for professional teacher candidates in their work environment (Hernández-Torrano & Ibrayeva, 2020; Margot & Kettler, 2019). The following table describes the facts in descriptive data for each group that applies the Hybrid learning strategy (experimental) using zoom/Google meet and WhatsApp and face-to-face learning using zoom/Google meet (control).

Table 1. Creativity of Biology Student for Semester VI

	Experiment Class		Control Class	
	Pre-test	Post-test	Pre-test	Post-test
N	17	17	17	17
Xmin	57	81	58	67
Xmax	65	87	76	78
Mean	64.70	85.78	63.64	76.75
Standars Deviation	1.12	2.12	1.30	2.32

From Table 1, it is found that the pretest scores of the two groups have no difference between the distribution of scores for students where the control class is almost the same as the experimental class, although, in terms of more rigidity, the experimental class is slightly better because the fact of the distribution of final learning scores where the posttest score in the experimental class is much better, with an average score of 85.78 or in the excellent category (A) while in the control class with an average score of 76.75 or in the good category (B+). It shows that the creative ability of students with the Hybrid learning model is better than face-to-face online learning. To further strengthen the opinion above, the authors

conducted a comprehensive test, namely conducting inferential statistical tests related to student final learning outcomes. Process Analysis of initial data from the pretest results was carried out to find out that students in both groups had similarities regarding their creativity without any special treatment given (Njie & Asimiran, 2014; Putra et al., 2021). For this reason, a test of student creativity differences amid the covid-19 pandemic is carried out in both the experimental class and control class which is calculated using pretest score data. As for the results of the student pretest, it is known that the average score (mean) of students in the experimental class is 64.70 in the Good Enough (C+) category with a standard deviation (SD) of 1.12. At the same time, in the control class, the mean is 63.64, also in the Fairly Good (C+) category with an SD of 1.30. Furthermore, the focus of this research is related to the results of the student creativity posttest. It clearly illustrates that students have creative abilities that are not much different, so indirectly, the final test results obtained will not be influenced by initial conditions (Sulman, 2019). To further convince researchers of the initial conditions of students to investigate the effect it causes, the two-mean difference test is used. Before the difference test process is carried out, the researchers conduct an initial review of the test, namely the prerequisite tests, namely normality and homogeneity, which can be seen in Table 2.

Table. 2 Normality Test Results

	Class	Shapiro-Wilk		
		Statistic	Df	Sig
Student	Experiment	0.673	17	0.23
Creativity	Control	0.672	17	0.342

Lilliefors Significance Correction, $\alpha = 0.05$

The facts obtained from the normality test results show that the two classes are normally distributed. This can be seen from the value of sig. Both classes are greater than the predetermined alpha, which is 0.05. Thus, the inferential statistical test used was parametric statistics. The results of the homogeneity of variance test for the two learning groups can be seen in Table 3.

Table 3. Homogeneity Test Results

Levene's test for Equality of Variances

	<i>F</i>	<i>Sig</i>
Equal variance assumed	0.133	0.341
Equal variance not assumed	-	-

Homogeneity Significance Correction, $\alpha = 0.05$

Table 3 shows the value of sig. greater than the predetermined alpha. Thus both groups have homogeneous variance. Furthermore, the statistical test used to see the effect of Hybrid learning is conducting a difference test on the two mean posttest results of student creativity in the two learning groups using a t-test whose results can be seen in Table 4.

Table 4. Independent Sampel Test

	<i>t</i>	<i>Df</i>	<i>Sig</i> (2-tailed)	<i>Std.</i> <i>Difference</i>	<i>Error</i>
Creativity	7.835	34	0.021	0.7836	

Significance Correction, $\alpha = 0.05$

From Table 4, information is obtained that the sig value is 0.021, which is smaller than the predetermined alpha. This indicates that there is a significant difference in the



average creativity of students who apply the Hybrid learning strategy with the creativity of students who apply to learn without Hybrid Learning. Learning in the learning innovation course with the help of Hybrid Learning, which is done by synchronous and asynchronous, has been empirically proven to have a good and significant effect on students' creative abilities.

Based on the facts of testing from the results of the post-test conducted above, it can be concluded that the Hybrid learning strategy has a significant effect on student creativity. The process at the online lecture stage requires students to be able to increase their knowledge of technology so that they can easily acquire their own knowledge and be able to carry out a comprehensive learning process (Fidan & Tuncel, 2019; Torres, 2011). Through learning with the Hybrid Learning strategy, students can be more comfortable doing the lecture process both in terms of doing assignments and looking for references as reference material (Hapke et al., 2020; Verawati & Desprayoga, 2019). In the online lecture process, the teacher is not only centred on the lecturer because, in online lectures, but students can also move more freely in building a learning style or strategy so that the concepts obtained can last a long time and be maximal. The process of understanding quality material will be able to build a personality with character so that the orientation of a lecture is not merely a value, but far from that, they understand that the understanding of the material concepts obtained can be used for self-development in the future. The results of this study also support the statement that creativity cannot appear suddenly, but through a long process (Sulman et al., 2020; Zb et al., 2020) that can be decomposed from an experience and a good concept in the form of understanding the material.

The learning process, of course, cannot only depend on understanding the material; in addition to providing material, a system is also needed in the midst of online learning that can regulate the lecture process; for example, in the implementation process, there are clear rules good games in student activities in spelling assignments, both groups and individuals. With the Hybrid Learning strategy, students' creativity is much better. This is because there are so many learning resources that can be used both through books and online so that they have extensive references. Students can also interact with WhatsApp Groups regarding the assignment process or lectures that have been carried out so that they can continue to share with each other even though only online without being given special time (Hapke et al., 2020; Sulistiono, 2019). This finding strengthens the results of research, which states that learning by utilizing technology has a wider impact on biology learning so that biology learning becomes more interesting (Zb et al., 2020). In addition, through the application of learning that utilizes technology, students can manage what are the main things and responsibilities and easily interact during the lecture process.

Different facts are obtained in face-to-face learning, what happens is the opposite; students have many obstacles in online lectures only by google meet/zoom. It can be seen that many students complain because they have little information relating to the new information they have obtained. They only get an explanation when face-to-face online. The lecture process is more similar to conventional learning, where student activities only listen to explanations and record all lecturers' submissions without analyzing whether it is important or not. This is exacerbated by poor signal quality during lectures so that only about 67% of the explanations given by lecturers can be captured and understood by students (Putra et al., 2021; Zb et al., 2020). This fact is reinforced by follow-up questions. When they are asked about the material that has been delivered, almost some students are not able to answer correctly, and students tend to be monotonous. Learning is still Lecture-centered so that student creativity becomes limited, or it can be said that it is not developing well. In fact, to

develop creativity, it is not enough just to provide material directly to students but must provide a space that contains various experiences to change their knowledge both in the form of projects, discussions so that they can increase student motivation and interest during the Covid-19 pandemic (Sulman, 2019).

Conclusion

The results based on the research above that have been parked can be said that the Hybrid learning strategy can have a significant influence on student creativity. Learning with the Hybrid Learning strategy can increase students' learning creativity so as to encourage student's interest and motivation to learn in achieving better understanding and grades. However, the Hybrid Learning strategy requires the preparation of both material synchronously and asynchronously. The Hybrid Learning Strategy is able to present a modern lecture concept because by using this learning strategy, students can actively participate in developing their creative abilities. The Hybrid Learning strategy is believed to be the best solution that can be used in the traditional biology recovery process in the midst of a pandemic and the new normal and is able to support government learning programs.

Recommendation

The importance of Hybrid learning strategies as an online lecture solution in the current covid-19 pandemic and the new normal situation that will come is expected for biology education lecturers to be more innovative in using Hybrid Learning strategies in carrying out lectures and for study programs to be able to carry out the integration or development process. With the curriculum in the Biology and Special Education Study Program, students are expected to innovate and apply Hybrid Learning strategies more systematically in the future.

References

- Ahmad, A. (2013). Effects of Self-Efficacy on Students' Academic Performance. *Journal of Educational, Health and Community Psychology*, 2(1), 22–29. <https://doi.org/10.12928/jehcp.v2i1.3740>
- Brears, L., Tutor, S., Macintyre, B., Lecturer, S., Sullivan, G. O., & Lecturer, S. (2011). Preparing Teachers for the 21st Century Using PBL as an Integrating Strategy in Science and Technology Education. *Design and Technology Education*, 16(1), 36–46.
- Carmi, N., Arnon, S., & Orion, N. (2015). Transforming Environmental Knowledge into Behavior: The Mediating Role of Environmental Emotions. *Journal of Environmental Education*, 46(3), 183–201. <https://doi.org/10.1080/00958964.2015.1028517>
- Creswell, J. W. (2012). *Planning, Conducting, and Evaluating Quantitative and Qualitative Research*.
- Dong, C., Cao, S., & Li, H. (2020). Young children's online learning during COVID-19 pandemic: Chinese parents' beliefs and attitudes. *Children and Youth Services Review*, 118(June), 105440. <https://doi.org/10.1016/j.childyouth.2020.105440>
- Fidan, M., & Tuncel, M. (2019). Integrating augmented reality into problem based learning: The effects on learning achievement and attitude in physics education. In *Computers and Education* (Vol. 142). Elsevier Ltd. <https://doi.org/10.1016/j.compedu.2019.103635>
- Hapke, H., Lee-Post, A., & Dean, T. (2020). 3-in-1 Hybrid Learning Environment. *Marketing Education Review*, 00(00), 1–8. <https://doi.org/10.1080/10528008.2020.1855989>

- Hernández-Torrano, D., & Ibrayeva, L. (2020). Creativity and education: A bibliometric mapping of the research literature (1975–2019). *Thinking Skills and Creativity*, 35(September 2019), 100625. <https://doi.org/10.1016/j.tsc.2019.100625>
- Honey, M., Pearson, G., & Schweingruber, H. (2014). STEM Integration in K-12 Education. In *STEM Integration in K-12 Education*. <https://doi.org/10.17226/18612>
- Margot, K. C., & Kettler, T. (2019). Teachers' perception of STEM integration and education: a systematic literature review. *International Journal of STEM Education*, 6(1). <https://doi.org/10.1186/s40594-018-0151-2>
- Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, 100012. <https://doi.org/10.1016/j.ijedro.2020.100012>
- Njie, B., & Asimiran, S. (2014). Case Study as a Choice in Qualitative Methodology. *IOSR Journal of Research & Method in Education (IOSRJRME)*, 4(3), 35–40. <https://doi.org/10.9790/7388-04313540>
- Oaks, T., Aberdeen, T., & Psychology, E. (2013). Yin, R. K. (2009). Case study research: Design and methods (4th Ed.). Thousand Oaks, CA: Sage. *The Canadian Journal of Action Research*, 14(1), 69–71. <https://doi.org/10.33524/cjar.v14i1.73>
- Ozkazanc, S., & Yuksel, U. D. (2015). Evaluation of Disaster Awareness and Sensitivity Level of Higher Education Students. *Procedia - Social and Behavioral Sciences*, 197(February), 745–753. <https://doi.org/10.1016/j.sbspro.2015.07.168>
- Pazich, L. B., Kurzweil, M., & Rossman, D. (2018). Hybrid Learning and the Residential Liberal Arts Experience. *Change: The Magazine of Higher Learning*, 50(6), 45–51. <https://doi.org/10.1080/00091383.2018.1540829>
- Putra, M. I. J., Junaid, M., & Sulman, F. (2021). EDUKATIF: JURNAL ILMU PENDIDIKAN The Ability of the Question and Answer (Q & A) Method with the Help of Learning Videos against Student Learning Outcomes amid the Covid-19 Pandemic. *EDUKATIF: Jurnal Ilmu Pendidikan*, 3(5), 2160–2169. <https://doi.org/https://doi.org/10.31004/edukatif.v3i5.768>
- Ridder, H. G. (2017). The theory contribution of case study research designs. *Business Research*, 10(2), 281–305. <https://doi.org/10.1007/s40685-017-0045-z>
- Roca, J. C., & Gagné, M. (2008). Understanding e-learning continuance intention in the workplace: A self-determination theory perspective. *Computers in Human Behavior*, 24(4), 1585–1604. <https://doi.org/10.1016/j.chb.2007.06.001>
- Roshayanti, F., Wicaksono, A. G. C., Minarti, I. B., & Nurkholis. (2020). *Comparative Study of Environmental Literacy Between Teachers and Students at Coastal Area*. 417(Icesre 2019), 232–236. <https://doi.org/10.2991/assehr.k.200318.045>
- Sastradika, D., Iskandar, I., Syefrinando, B., & Shulman, F. (2021). Development of animation-based learning media to increase student's motivation in learning physics. *Journal of Physics: Conference Series*, 1869(1). <https://doi.org/10.1088/1742-6596/1869/1/012180>
- Sergis, S., Sampson, D. G., & Pelliccione, L. (2018). Investigating the impact of Flipped Classroom on students' learning experiences: A Self-Determination Theory approach. *Computers in Human Behavior*, 78, 368–378. <https://doi.org/10.1016/j.chb.2017.08.011>
- Sremcev, N., Lazarevic, M., Krainovic, B., Mandic, J., & Medojevic, M. (2018). Improving teaching and learning process by applying Lean thinking. *Procedia Manufacturing*, 17, 595–602. <https://doi.org/10.1016/j.promfg.2018.10.101>



- Sulistiono, M. (2019). Implementasi Hybrid Learning Menggunakan Aplikasi Edmodo Pada Matakuliah Metode Penelitian Kualitatif. *Elementeris: Jurnal Ilmiah Pendidikan Dasar Islam*, 1(1), 57. <https://doi.org/10.33474/elementeris.v1i1.2794>
- Sulman, F. (2019). Application of Cooperative Problem Posing and Prior Motivation Towards Students Learning Outcomes. *Indonesian Journal of Educational Research (IJER)*, 4(2), 93–96. <https://doi.org/10.30631/ijer.v4i2.126>
- Sulman, F., Habibi, M., & Zb, A. (2021). Pengaruh Media Animasi Berkarakter Islami Terhadap Hasil Belajar Pengetahuan Bumi dan Antariksa. *Edumaspul: Jurnal Pendidikan*, 5(1), 135–146. <https://doi.org/10.33487/edumaspul.v5i1.1044>
- Sulman, F., Taqwa, M. R. A., Aminah Zb, A. Z., Rafzan, R., & Fikri, A. (2020). The Effect of Mathematical Connections on the Mastery of Probability Material. *Edumatika: Jurnal Riset Pendidikan Matematika*, 3(2), 147. <https://doi.org/10.32939/ejrpm.v3i2.645>
- Tanaka, M. (2013). Examining kanji learning motivation using self-determination theory. *System*, 41(3), 804–816. <https://doi.org/10.1016/j.system.2013.08.004>
- Torres, A. L. M. O. C. (2011). Understanding and intervening in E-learning in higher education institution. *Procedia - Social and Behavioral Sciences*, 15, 756–760. <https://doi.org/10.1016/j.sbspro.2011.03.178>
- Trueman, R. J. (2014). Productive Failure in Stem Education. *Journal of Educational Technology Systems*, 42(3), 199–214. <https://doi.org/10.2190/et.42.3.b>
- Tuan Soh, T. M., Arsada, N. M., & Osman, K. (2010). The relationship of 21st century skills on students' attitude and perception towards physics. *Procedia - Social and Behavioral Sciences*, 7(C), 546–554. <https://doi.org/10.1016/j.sbspro.2010.10.073>
- Verawati, & Desprayoga. (2019). Solusi Pembelajaran 4.0: Hybrid Learning. *Seminar Nasional Pendidikan Program Pascasarjana Universitas PGRI Palembang*, 2, 999–1015.
- Yazan, B., & De Vasconcelos, I. C. O. (2016). Three approaches to case study methods in education: Yin, Merriam, and Stake. *Meta: Avaliacao*, 8(22), 149–182. <https://doi.org/10.22347/2175-2753v8i22.1038>
- Zb, A., Setiawan, M. E., & Sulman, F. (2020). Pengaruh E-Learning Berbasis Schoology Berbantuan WhatsApp Group terhadap Hasil Belajar Ditengah Pandemi Covid-19. *Al-Khidmah*, 1(1), 55–60. <https://doi.org/10.29406/al-khidmah.v3i2.2282>