

The battle of learning modes: hybrid vs online learning in higher education

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ABSTRACT

This study aims to compare the impact of hybrid learning and online learning on students' understanding of concepts at the college level. The type of research used in this study was a quasi-experimental control group design. This research data collection technique was obtained from 100 students who attended civic education lectures. The number of research samples was 100 students consisting of various study programs from the results of random sampling. Data was analyzed using independent sample t-test and paired sample t-test analysis techniques. The results indicate that hybrid learning is more effective in increasing students' understanding of material concepts. However, both types of learning have a significant impact on improving students' understanding of concepts. The findings of this research can be utilized to optimize Pancasila learning in higher education and provide comprehensive insights into the benefits of hybrid and online learning. The study concludes that hybrid learning, which combines face-to-face and online learning, is a highly effective form of learning in educational institutions. This is particularly relevant in the current global context, where educational institutions worldwide are grappling with the challenges posed by the COVID-19 pandemic.

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1. INTRODUCTION

Education is an important component in the development of a country's civilization. Quality education gives hope for the quality of human resources. Education is the main factor in shaping intellectual, character and mindset [1], [2]. At least three statements from education experts state that the quality of education has the greatest impact on improving the quality of a country's human resources [3], [4]. Data from UNDP in 2021 provided information related to Indonesia's Human Development Index (HDI). Based on data released by UNDP in 2022, Indonesia ranks 114 out of 191 countries that are respondents. Based on data released by UNDP in 2018, Indonesia ranked 10th in 189 countries that were respondents [5]. It is still far below neighboring countries in ASEAN such as Singapore, Thailand, and even Malaysia. Therefore, efforts to improve the quality of human resources in Indonesia are very focused on being improved by the government. Through various kinds of improvements and changes in the education curriculum and education system, it is hoped that it can have a positive impact on improving the quality of human resources in Indonesia. These improvements are carried out at all levels of education, ranging from primary education,

secondary education, and higher education. Therefore, educators have a great responsibility to efforts to improve the quality of education in Indonesia.

The COVID-19 pandemic is a global event that disrupts various sectors of life, including education. Education around the world is forced to be implemented online [6]–[8]. The results of several studies have proven that online learning is getting better and more effective with various improvements in various aspects over time [9]–[11]. In fact, many educational institutions have opened online lectures in the educational process [12]–[14]. With the improving conditions of the Covid-19 pandemic, all countries including Indonesia have begun to enter a transition period to the new normal. The implementation of learning after the COVID-19 pandemic is carried out in a limited face-to-face manner while still implementing health protocols. The education process in Indonesia has not escaped the transition process from the pandemic period to the post-pandemic or new normal period. Hybrid-based learning is a new normal form of the educational process in Indonesia.

Hybrid learning is a learning that provides a classroom atmosphere to students who take part in online learning [15]–[17]. Therefore, it is hoped that through the hybrid learning method, students can get a direct learning experience from an educator. This is because online learning is quite widely complained by students because of the absence of direct interaction with educators [18]–[20]. However, online learning turned out to be quite effective and had a significant impact on improving student learning outcomes [21], [22], also turns out to be unable to provide real experience in terms of practice-based, or experience-based learning [23], [24]. All universities in Indonesia are directed to be able to carry out a hybrid-based learning process that combines direct learning in the classroom and online learning. This is because online learning has been quite well established by students and educators during the Covid-19 pandemic. Therefore, empirical evidence is needed for the impact that hybrid learning has on the basis of online forms of learning.

Hybrid learning is learning that provides a classroom atmosphere to students who take part in online learning. Hybrid learning, there are group classes that follow learning in class and simultaneously there are individuals who follow learning remotely or online classes from each location [25], [26]. The hybrid learning method also offers flexibility because it provides student maturity [27]. Therefore, it is expected that through hybrid learning method, learners can get learning experience directly from an educator. This is because, online learning has quite complained by students because there is no direct interaction with. However, online learning turned out to be quite effective and had a significant impact on improving student learning outcomes. However, online learning apparently cannot provide real experience in terms of practice-based or experience-based learning.

2. RESEARCH METHOD

The research that will be carried out aims to examine the impact of hybrid and online learning on the understanding of the concept of student national integration. This study used a quasi-experimental method of control group design. Judging from these objectives, this study uses quantitative methods with a Quasi Experimental approach. This approach essentially seeks to find and test the influence between independent variables on dependent variables of a study. Quasi-experimental research was conducted with intervention groups and control groups [28]. This study used the quasi-experimental method of design group control. There are two classes of control group and experimental group class. Experimental Design type because in this study the research sample was randomly selected with consideration of a particular cluster. Experimental research type because treatment is carried out on experimental class research samples. The treatment given is by conducting online learning in the control class and hybrid learning treatment is given in the experimental class. The research subjects are students of the Department of Pancasila and Civic Education, Informatics, Automotive Engineering Vocational Education, class of 2021, and students of the 2022 Economic Management Study Program who received National Integration material in the Civic Education institutional course. The place or location of this study is Universitas Ahmad Dahlan, Yogyakarta, Indonesia.

This research was conducted from May to October 2022. The research sample is part of the population that has the same characteristics as the population from the study conducted. The determination of the sample of this study was carried out using the cluster random sampling technique. The number of research samples in this study was 200 students consisting of 100 control groups and 100 experimental groups. Each class consists of 3 learning classes that take part in online learning and hybrid learning. Research data were collected using pre-test instruments and post-test students' understanding of concepts. Data significance test or research hypothesis test is carried out with independent sample t test and paired sample t test analysis techniques using the help of the Jamovi program.

$H_a 1$: There are significant differences in the increase in understanding of the concept of national integration of students in online learning.

$H_o 1$: There is no significant difference in increasing understanding of the concept of national

- integration of students in online learning.
- $H_a 2$: There are significant differences in increasing understanding of the concept of national integration of students in hybrid learning.
- $H_o 2$: There is no significant difference in increasing understanding of the concept of national integration of students in hybrid learning.
- $H_a 3$: There is a significant difference in the influence that online and hybrid learning provides.
- $H_o 3$: There is no significant difference in the influence that online and hybrid learning exerts.

3. RESULTS AND DISCUSSION

Hybrid learning is blended learning that integrates online learning and face-to-face learning [29], [30]. This means that there are students who take part in face-to-face learning and online learning. The results of measuring learning outcomes provide concrete learning outcomes data on the understanding of student concepts. Data on student pretest and post-test results can be seen in Figure 1. Students in online classes obtained an average learning outcome score of 70.01. Meanwhile, students in the hybrid class obtained an average learning outcome score of 77.77. The data on understanding these concepts is the basis for the conclusion that hybrid learning is more effective than online learning. In addition, the results of parametric statistical analysis prove that hybrid classes significantly increase students' understanding of concepts on national integration materials.

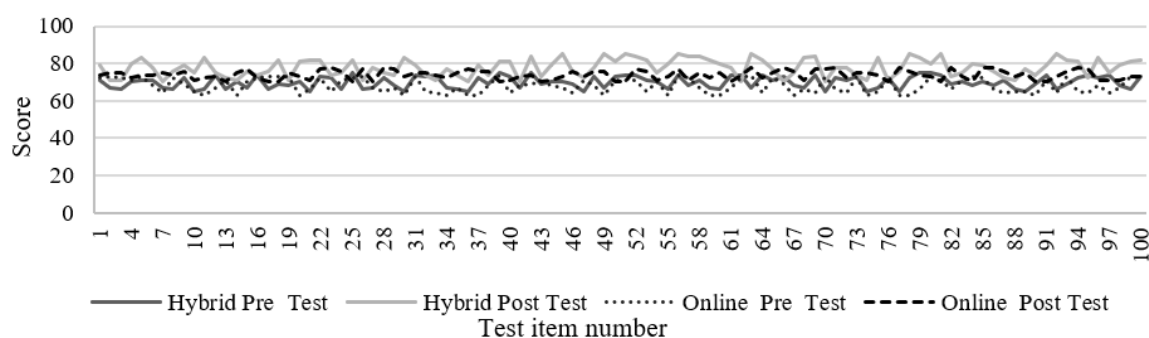


Figure 1. Pretest and post-test result data using Jamovi application

3.1. Online class

Table 1 explains the results of the normality test carried out as a prerequisite for the t test using parametric statistical analysis independent sample t test and Paired sample t test. The normality test results on the pre-test and post-test results of online classes obtained a kolmogorov-smirnov score of 0.7. The score proved that the data on spark plugs was normal because the kolmogorov-smirnov sig value was $0.7 > 0.05$. The following are the results of the normality test of pre-test data and post-test of online classes.

Table 1. Test of normality online class using Jamovi application				
		Normality test	Statistics	p
Pre-test online	Post-test online	Shapiro-Wilk	0.980	0.131
		Kolmogorov-Smirnov	0.0707	0.700
		Anderson-Darling	0.573	0.133

Table 1 includes three different statistical tests for normality: Shapiro-Wilk, Kolmogorov-Smirnov, and Anderson-Darling. Each test provides a p-value that indicates the likelihood that the data follows a normal distribution. In general, a p-value less than 0.05 indicates that the data does not follow a normal distribution. For the pre-test scores, the Shapiro-Wilk test yielded a p-value of 0.980, the Kolmogorov-Smirnov test yielded a p-value of 0.0707, and the Anderson-Darling test yielded a p-value of 0.573. All three tests suggest that the pre-test scores are normally distributed. For the post-test scores, the Shapiro-Wilk test yielded a p-value of 0.131, the Kolmogorov-Smirnov test yielded a p-value of 0.700, and the Anderson-Darling test yielded a p-value of 0.133. All three tests also suggest that the post-test scores are normally distributed.

In summary, the results of the normality tests indicate that both the pre-test and post-test scores in

the online class follow a normal distribution, which means that statistical analyses such as t-tests and ANOVA can be used on the data. Based on the results of the normality test, the data analysis is continued to the paired Sample t test stage. The paired sample t test result obtained a sig value of 0.001. The results of the paired sample t test provide results that the hypothesis $H_a 1$ accepted which means that there is a significant influence of the online learning process on increasing understanding of the concept of national integration students. It is based on a sig score of $0.001 < 0.05$ as shown in Figure 2. This is in accordance with the results of research by Ha & Singh which proves that online learning has a positive impact on understanding student concepts and even to student learning outcomes [31], [32].

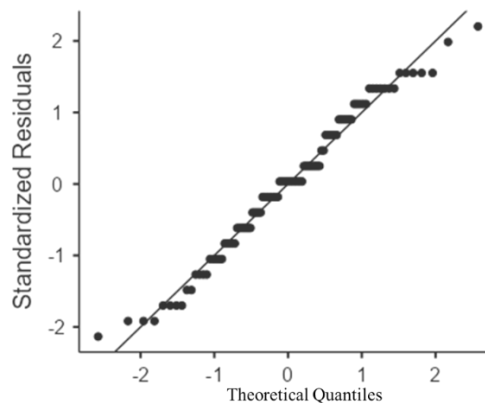


Figure 2. Pre-test online-post-test online using Jamovi application

Table 2 explained the results of the paired sample t test in the online learning class above become a control class for hybrid classes which are expected to be more effective in increasing students' understanding of concepts. This is because hybrid learning has become an alternative to face-to-face learning during a pandemic. Moreover, the results of the study prove that hybrid learning is very effective in improving student learning outcomes.

Table 2. Paired samples t-test online class using Jamovi

			Statistics	Df	p	Effect Size
Pre-test online	Post-test online	Student's t	-3.99	99.0	<0.001	Cohen's d -0.399

3.2. Hybrid class

The following are the results of the normality test carried out as a prerequisite for the t test using parametric statistical analysis independent sample t test and Paired sample t test. Normality test results on pre-test and post-test results of online classes obtained a kolmogorov-smirnov score of 0.691. The score proved that the spark plug shear data was normal because the kolmogorov-smirnov sig value was $0.691 > 0.05$. The following are the results of the normality test of pre-test data and post-test of online classes in Table 3.

Table 3. Tests of Normality online class v using Jamovi application

		Normality test	Statistics	p
Pre-test hybrid	Post-test hybrid	Shapiro-Wilk	0.986	0.403
		Kolmogorov-Smirnov	0.0712	0.691
		Anderson-Darling	0.393	0.370

Based on the results of the normality test, the data analysis is continued to the paired Sample t test stage on the pre-test and post-test hybrid class data. The paired sample t test result obtained a sig value of 0.001. The results of the paired Sample t test provide results that the hypothesis of $H_a 2$ accepted which means that there is a significant influence of the hybrid learning process on increasing understanding of the concept of national integration students. It is based on a sig value of $0.001 < 0.05$ as shown in Figure 3.

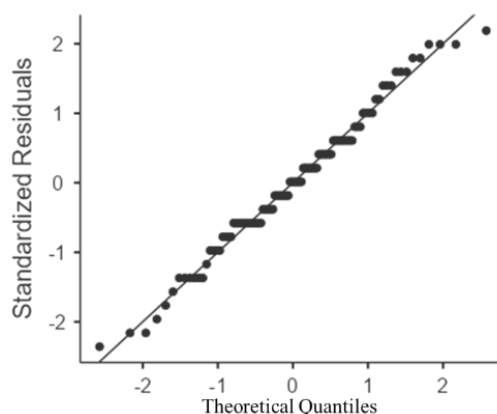


Figure 3. Pre-test hybrid-post-test hybrid using Jamovi app

The results of the paired sample t test in hybrid classes which prove that hybrid learning is very good at improving students' understanding of concepts are very much in line with the findings as shown in Table 4. Even based on relevant research findings, the use of hybrid learning is very effective in improving student learning outcomes. Even based on the results of relevant studies, it is important that hybrid learning is effective in increasing student motivation, activeness, and learning achievement.

Table 4. Paired samples t-test online class using jamovi application

			Statistics	Df	p	Effect size
Pre-test hybrid	Post-test hybrid	Student's t	-15.7	99.0	<0.001	Cohen's d -1.57

Two analysis results of paired Sample t test in online and hybrid classes indicate that online and hybrid learning both have a significant effect on improving students' understanding of concepts. This needs to be further tested to compare the impact that online and hybrid learning has on students' understanding of concepts. Therefore, statistical testing is continued using the Independent Sample t test analysis. The following are the results of the Independent Sample t test which begins with the analysis prerequisite testing. The results of the normality test of post-test data in online classes and post-tests in hybrid classes. The results of the kolmogorov smirnov test obtained a p value or sig of 0.114. This is the basis for taking the conclusion that the data is normally distributed because the p value or sig $0.114 < 0.05$. The following are the results of the analysis of the normality test of post-test data in online classes and post-test in hybrid classes as shwon in Table 5.

Table 5. Tests of normality online and hybrid classes using the jamovi application

Post-test	Statistics	p
Shapiro-Wilk	0.971	<0.001
Kolmogorov-Smirnov	0.0847	0.114
Anderson-Darling	1.51	<0.001

In addition to the data must be normally distributed, the research data must also come from homogeneous variants. Table 6 the homogeneity test of post-test data in online classes and post-tests in hybrid classes is carried out with Lavene tests. The results of the Lavene test obtained a p value or sig of 0.001. It means that the data comes from homogeneous variants because the p value is $0.001 < 0.05$. The prerequisite test results have been met, so the hypothesis test is carried out using an independent sample t test. The results of the independent sample t test obtained a p value or sig of 0.001. The p value in Table 7 is $0.001 < 0.05$ which means that H_0 is processed, and H_a 3 is accepted that there is a significant difference in the influence that online and hybrid learning provides. This proves that hybrid learning is more effective in increasing students' understanding of concepts in national integration materials.

In addition, the results of descriptive analysis prove that the mean post-test in online and hybrid classes is very different. The mean post-test for understanding student concepts in online classes is 70.01 while the mean post-test for understanding student concepts in hybrid classes is 77.77 as shown in Figure 4. Based on a series of statistical test results carried out, it can be proven that hybrid learning is more effective

in increasing students' understanding of concepts in national integration materials.

Table 6. Homogeneity of variances tests of online and hybrid using jamovi application

Post-test	Value	df1	df2	p-value
Levene's	21.8	1	198	<0.001
Variance ratio	0.477	99	99	<0.001

Table 7. Post-test in online and hybrid classes

Post-test	Statistics	Df	p	Effect size
Student's t	-13.5	198	<0.001	Cohen's d -1.91
a Levene's test is significant				

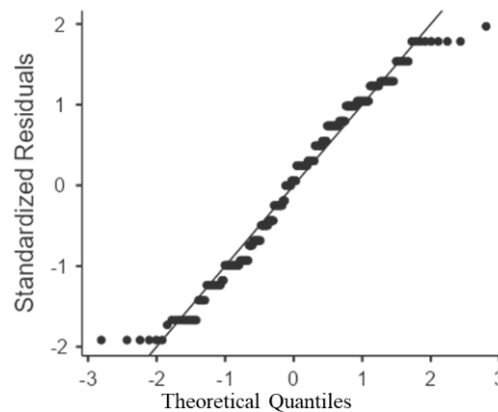


Figure 4. Post-test online and hybrid classes

Hybrid learning provides easy access to education regardless of place, so that it can provide more inclusive education and can be equal in terms of quality and accessibility in different learning environments. The mean post-test of student concept understanding in online classes is 70.01, while the mean post-test of student concept understanding in hybrid classes is 77.77. Based on a series of statistical test results conducted, it can be proven that hybrid learning is more effective in increasing students' understanding of concepts in national integration material. Hybrid learning creates a more flexible and engaging learning environment compared to learning entirely in the online classroom [27].

4. CONCLUSION

Hybrid learning is a very effective form of learning to be implemented in the educational process in educational institutions. The results of this study prove that hybrid learning, and online learning are both effective in increasing students' understanding of concepts in the material studied. However, based on the results of this study, it is said that hybrid learning is more effective in efforts to improve students' understanding of concepts. Therefore, based on the results of this study, it is hoped that many educational institutions will not immediately rush back to offline learning. There is a better option, namely hybrid learning that can still accommodate the needs of educators and students in face-to-face learning and online learning wrapped in hybrid learning. The contribution and novelty of this research lies in its findings that hybrid learning is a highly effective form of learning in educational institutions. The study provides evidence that both hybrid and online learning can enhance students' understanding of concepts. However, the research concludes that hybrid learning is more effective in improving students' comprehension of concepts. This highlights the potential of hybrid learning as a viable option for educational institutions seeking to maintain the benefits of face-to-face learning while also accommodating the needs of online learning. The findings of this study emphasize the effectiveness of hybrid learning as a form of instruction in educational institutions. By providing evidence of its efficacy in enhancing students' understanding of concepts, the research offers valuable insights for decision-makers and educators. It is hoped that these findings will inform the design and implementation of educational programs worldwide, ultimately leading to improved educational experiences and outcomes for students internationally.




REFERENCES

- [1] Z. Nuryana, W. Xu, L. Kurniawan, N. Sutanti, S. A. Makruf, and I. Nurcahyati, "Student stress and mental health during online learning: Potential for post-COVID-19 school curriculum development," *Comprehensive Psychoneuroendocrinology*, vol. 14, p. 100184, May 2023, doi: 10.1016/j.cpnec.2023.100184.
- [2] Z. Nuryana, W. Xu, S. Fajaruudin, A. A. Al-Omari, Z. Tasir, and T. Hamami, "Mapping global research on hidden curriculum: the potential benefits for future agenda in educational developments," *SN Social Sciences*, vol. 3, no. 8, p. 127, Jul. 2023, doi: 10.1007/s43545-023-00714-7.
- [3] P. B. Johnnie, "Formal Education: A Paradigm for Human Resource Development in Organizations," *International Journal of Educational Management*, vol. 7, no. 5, May 1993, doi: 10.1108/09513549310042798.
- [4] A. T. Hendrawijaya, "The effect of non-formal education mediation on human resources development," *Academy of Strategic Management Journal*, vol. 19, no. 2, pp. 1–12, 2020.
- [5] UNDP, "Human Development Index (HDI)," 2022. <https://hdr.undp.org/data-center/human-development-index#/indicies/HDI> (accessed Sep. 07, 2024).
- [6] F. Alghadari and A. Yundayani, "Combating Learning Loss: How do Students Engage Cognitively and Affectively in Online-Based Academic Activities?," *International Journal of Education and Learning*, vol. 4, no. 3, Oct. 2022, doi: 10.31763/ijelev.v4i3.692.
- [7] I. F. Kristiana, C. G. Widayanti, P. B. Widodo, and Y. Indriana, "Learning loss during the pandemic: Views of Indonesian teachers and parents," *International Journal of Education and Learning*, vol. 4, no. 3, Oct. 2022, doi: 10.31763/ijelev.v4i3.765.
- [8] M. Ramdhan, M. I. Sukarelawan, M. A. Thohir, and F. Arifiyanti, "Junior high school student perception of online learning in pandemic Covid-19: Gender, social media ownership, and internet access duration perspective," *International Journal of Education and Learning*, vol. 4, no. 1, pp. 28–40, Apr. 2022, doi: 10.31763/ijelev.v4i1.517.
- [9] Z. Zulherman, Z. Nuryana, A. Pangarso, and F. M. Zain, "Factor of zoom cloud meetings (ZCM): Technology adoption on the pandemic covid-19," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 10, no. 3, pp. 816–825, 2021, doi: 10.11591/ijere.v10i3.21726.
- [10] G. M. Piskurich, "Online learning: E-learning. Fast, cheap, and good," *Performance Improvement*, 2006, doi: 10.1002/pfi.2006.4930450105.
- [11] S. Dhawan, "Online Learning: A Panacea in the Time of COVID-19 Crisis," *Journal of Educational Technology Systems*, vol. 49, no. 1, pp. 5–22, Sep. 2020, doi: 10.1177/0047239520934018.
- [12] L. Mishra, T. Gupta, and A. Shree, "Online teaching-learning in higher education during lockdown period of COVID-19 pandemic," *International Journal of Educational Research Open*, 2020, doi: 10.1016/j.ijedro.2020.100012.
- [13] N. Landa, S. Zhou, and N. Marongwe, "Education in emergencies: Lessons from COVID-19 in South Africa," *International Review of Education*, 2021, doi: 10.1007/s11159-021-09903-z.
- [14] S. Silva, J. Fernandes, P. Peres, V. Lima, and C. Silva, "Teachers' Perceptions of Remote Learning during the Pandemic: A Case Study," *Education Sciences*, vol. 12, no. 10, p. 698, Oct. 2022, doi: 10.3390/educsci12100698.
- [15] B. H. Chen and H.-H. Chiou, "Learning style, sense of community and learning effectiveness in hybrid learning environment," *Interactive Learning Environments*, vol. 22, no. 4, pp. 485–496, Jul. 2014, doi: 10.1080/10494820.2012.680971.
- [16] A. Raes, "Exploring Student and Teacher Experiences in Hybrid Learning Environments: Does Presence Matter?," *Postdigital Science and Education*, 2022, doi: 10.1007/s42438-021-00274-0.
- [17] N. Eija, P. S. Sari, M. Kristina, T. Tiina, J. Jonna, and K. Heli-Maria, "The experiences of health sciences students with hybrid learning in health sciences education—A qualitative study," *Nurse Education Today*, 2024, doi: 10.1016/j.nedt.2023.106017.
- [18] F. Ferri, P. Grifoni, and T. Guzzo, "Online learning and emergency remote teaching: Opportunities and challenges in emergency situations," *Societies*, 2020, doi: 10.3390/soc10040086.
- [19] A. K. Al Mazrooei, S. Hatem Almaki, M. Gunda, A. Alnoor, and S. Manji Sulaiman, "A systematic review of K–12 education responses to emergency remote teaching during the COVID-19 pandemic," *International Review of Education*, 2022, doi: 10.1007/s11159-023-09986-w.
- [20] B. S. Alatni, I. R. Abubakar, and S. A. Iqbal, "COVID-19 and Rapid Course Adaptations in Saudi Arabia: An Experiential Learning and Recommendations for Online Education," *Frontiers in Psychology*, 2021, doi: 10.3389/fpsyg.2021.643203.
- [21] S. I. de Freitas, J. Morgan, and D. Gibson, "Will <sc>MOOCs</sc> transform learning and teaching in higher education? Engagement and course retention in online learning provision," *British Journal of Educational Technology*, vol. 46, no. 3, pp. 455–471, May 2015, doi: 10.1111/bjet.12268.
- [22] J. C. Bahamon and A. Rorrer, "Improving student learning outcomes in online courses: An investigation into the effects of multiple teaching modalities," 2020, doi: 10.1145/3328778.3366880.
- [23] M. Costello, P. Cantillon, R. Geoghegan, D. Byrne, A. Lowery, and S. M. Walsh, "Experience-based learning: how a crisis solution informed fundamental change in a clinical education curriculum," *Clinical Teacher*, 2022, doi: 10.1111/tct.13441.
- [24] D. E. Matzembacher, R. L. Gonzales, and L. F. M. do Nascimento, "From informing to practicing: Students' engagement through practice-based learning methodology and community services," *International Journal of Management Education*, 2019, doi: 10.1016/j.ijme.2019.03.002.
- [25] N. T. Butz, R. H. Stupnisky, R. Pekrun, J. L. Jensen, and D. M. Harsell, "The Impact of Emotions on Student Achievement in Synchronous Hybrid Business and Public Administration Programs: A Longitudinal Test of Control-Value Theory*," *Decision Sciences Journal of Innovative Education*, vol. 14, no. 4, pp. 441–474, Oct. 2016, doi: 10.1111/dsji.12110.
- [26] M. Hastiea, I. C. Hung, N. S. Chen, and Kinshuk, "A blended synchronous learning model for educational international collaboration," *Innovations in Education and Teaching International*, vol. 47, no. 1, pp. 9–24, 2010, doi: 10.1080/14703290903525812.
- [27] A. Raes, L. Detienne, I. Windey, and F. Depaepe, "A systematic literature review on synchronous hybrid learning: gaps identified," *Learning Environments Research*, vol. 23, no. 3, pp. 269–290, Oct. 2020, doi: 10.1007/s10984-019-09303-z.
- [28] S. Moreira et al., "Positive Effects of an Online Workplace Exercise Intervention during the COVID-19 Pandemic on Quality of Life Perception in Computer Workers: A Quasi-Experimental Study Design," *International Journal of Environmental Research and Public Health*, vol. 19, no. 5, 2022, doi: 10.3390/ijerph19053142.
- [29] J. Singh, K. Steele, and L. Singh, "Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World," *Journal of Educational Technology Systems*, 2021, doi: 10.1177/00472395211047865.
- [30] M. T. Qamar, A. Malik, J. Yasmeen, M. Sadiq, and M. Ajmal, "Incorporating face-to-face and online learning features to propose blended learning framework for Post-COVID classrooms in India," *Asian Association of Open Universities Journal*, vol. 19, no. 1, pp. 70–87, Aug. 2024, doi: 10.1108/AAOUJ-08-2023-0097.




- [31] Y. Ha and H. Im, "The Role of an Interactive Visual Learning Tool and Its Personalizability in Online Learning: Flow Experience," *Online Learning*, vol. 24, no. 1, pp. 205–226, Mar. 2020, doi: 10.24059/olj.v24i1.1620.
- [32] V. Singh and A. Thurman, "How Many Ways Can We Define Online Learning? A Systematic Literature Review of Definitions of Online Learning (1988-2018)," *American Journal of Distance Education*, vol. 33, no. 4, pp. 289–306, Oct. 2019, doi: 10.1080/08923647.2019.1663082.

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