https://journal.ypidathu.or.id/index.php/jete/

P - ISSN: 3025-0668

E - ISSN: 3025-0676

Implementation of Hybrid Learning Models in Islamic Universities in Asian Countries

Muhammad Lukman Haris Firmansah ¹^(b) Bokarewa Katona ²^(b), Jensen Venkataragavan ³^(b), Erlandsson Nina ⁴^(b)

¹Universitas Persatuan Guru Repoblik Indonesia Ronggolawe, Indonesia

²The Australian National University, Australia

³Polytechnical University of Kabul, Afghanistan

⁴Applied Science University, Bahrain

ABSTRACT

Background. At this time technology has experienced increasingly advanced developments over time. Technology plays an important role in helping the learning process, the atmosphere in learning will be helped by the existence of learning methods such as the implementation of the hybrid model.

Purpose. This study aims to determine the implementation of the hybrid learning model in Islamic universities in Asian countries. in this study, researchers conducted research using quantitative methods.

Method. The results of this study indicate that this hybrid learning can be used as a learning model that is very suitable in tertiary institutions because it can create a conducive and effective learning atmosphere.

Results. From this research it can be concluded that the hybrid learning model can help students learn through content and instructions that are obtained online independently.

Conclusion. The limitation in this study is that the researcher only conducted research at one of the universities located in Tanah Datar district, for this reason the researcher hopes that the next researcher will be able to conduct the same research, but in a different place so that he can continue this research.in Asian Country.

KEYWORDS

E-comics, Learning Media, Skills

INTRODUCTION

The learning model is an approach or strategy that is applied to the learning process to achieve learning objectives(Cavalcante et al., 2019; Govindan & Hasanagic, 2018; Zhou, 2018). The learning model includes a way of presenting material, interactions between teachers and students, as well as ways of evaluating learning(Alturise, 2020; Bhatla et al., 2018; Duan et al., 2019). The hybrid learning model is a combination of online and offline learning, this model provides the possibility for students to study independently through online platforms, while also interacting directly with teachers and classmates physically.

Citation: Firmansyah, H, L, M., Katona, B., Venkataragavan, J., & Nina, E. (2023). Implementation of Hybrid Learning Models in Islamic Universities in Asian Countries. *Journal Emerging Technologies in Education*, *1*(1), 59–68. https://doi.org/10.55849/jite.v1i1.199

Correspondence:

Bokarewa Katona, bokarewakatona@gmail.com

Received: February 12, 2023 Accepted: February 15, 2023 Published: February 28, 2023



(Aljehani, 2019; "Humanistic and Mental Health Behaviorism in Shaping the Learning Process in Covid-19 Outbreak," 2020; Zhu et al., 2019). In the hybrid learning model, students can access online learning materials through e-learning platforms such as video tutorials,

reading materials, and assignments that must be completed independently.(Mulyaningsih et al., 2022). In addition, students also attend physical classes where students interact directly with teachers and classmates in discussions, other collaborative activities.

The hybrid learning model allows students to study flexibly and utilize technology to enhance learning("ITC Guidelines for Translating and Adapting Tests (Second Edition)," 2018; Maxwell et al., 2018; Naim et al., 2022). Students can study independently by accessing learning materials. Students can study independently by accessing online learning materials at a time and place according to their schedule(Ben-Daya et al., 2019; Mishra et al., 2020). Besides that, the hybrid learning model allows students to continue to interact and collaborate with classmates and teachers in physical classes(Abu-Ras et al., 2022; Basavarajappa et al., 2020). The hybrid learning model is very useful in situations where students have to study remotely, for example during the COVID-19 pandemic. However, the hybrid learning model also has several challenges, such as expanding technological infrastructure, training teachers in managing learning and ensuring equal access for all students. (Bin Abdulrahman et al., 2022). Thus, it is necessary to have careful planning and preparation in implementing the hybrid learning model.

Islamic higher education is an educational institution that has a vision and mission in developing student potential, has a major role in equipping a superior and highly competitive generation.(Frank et al., 2019; Naim et al., 2022). An effort that can be carried out by Islamic tertiary institutions in strengthening the quality of learning and strengthening student competence is through the implementation of a hybrid learning model(Basavarajappa et al., 2020; Ben-Daya et al., 2019). The hybrid learning model combines face-to-face learning with online learning in an integrated learning system(Hayee et al., 2021). The implementation of the hybrid learning model in Islamic tertiary institutions is expected to improve the quality of learning and strengthen student competencies, so that they can survive in competition in an increasingly competitive globalization era.

In order to prepare the next generation of young people to go through progress from time to time in the current era, therefore, knowledge and potential must be prepared carefully so that they can give very satisfying and good results.(Bin Abdulrahman et al., 2022; Dalenogare et al., 2018). So that the desired goals can be achieved with the use of learning models that are growing rapidly at this time. Over time, education in the State of Indonesia has increased a lot with the development of learning models(Li et al., 2020). In current education, teachers and lecturers have brought up many learning methods for students so that students can study conducively and effectively.

One of the implementations in learning is through a hybrid learning model. The hybrid learning model can increase interaction and collaboration between lecturers and students, as well as provide a more interesting and optimal learning experience(Makridakis et al., 2018; Page et al., 2021). In the implementation of the hybrid learning model, lecturers and students are able to open material and information directly, interact through discussion forums, and carry out assignments and evaluations through an offline system.(Gharib, 2023). Some of the results of previous research indicate that the application of a hybrid learning model can contribute to improving the quality of learning and strengthening student competence(Sajid & Ali, 2018). One of the studies conducted by Mwirichia, Kihoro, and Wambugu also proved that this hybrid learning model was able to increase the effectiveness of learning and student satisfaction with learning.

However, the implementation of the hybrid learning model in tertiary institutions is also faced with several challenges, namely the supporting factors and inhibiting factors in the implementation of the hybrid learning model.(Kousar & Brett, 2021; the International Peace College South Africa, South Africa et al., 2021). Thus, further studies are also needed regarding the effect of the implementation of the hybrid learning model on the quality of learning and competence of Islamic high school students. The formulation of the problem in this study is what is the effect of the implementation of the hybrid learning model on the quality of learning and student competence in Islamic tertiary institutions(Dwivedi et al., 2021). The purpose of this research is to find out about the effect of implementing a hybrid learning model on the quality of learning and student competence in Islamic tertiary institutions as well as the benefits of implementing this hybrid learning model in improving the quality of learning and strengthening student competence.

This study will examine several relevant theories and previous research results, such as theories about hybrid learning, supporting and inhibiting factors in the application of hybrid learning models, as well as the effect of implementing hybrid learning models on the quality of learning and student competency.(Patricia Aguilera-Hermida, 2020; Zhong et al., 2020). Some of the results of previous research which will be discussed later in this study are studies conducted by mwirichia, kihoro, and wambugu, concerning the effect of implementing a hybrid learning model on student motivation and learning outcomes, regarding learning effectiveness and student satisfaction with hybrid learning. Learning is the process of permanently changing one's behavior from not knowing to knowing, from not understanding to understanding, and from poor ability to proficient, from lazy habits to being more diligent.

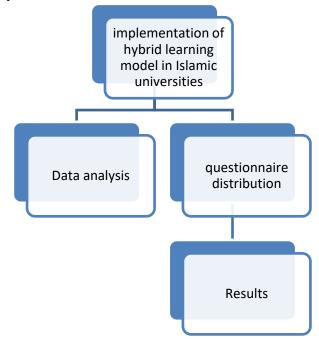
This research is expected to be able to contribute to the development of a hybrid learning model in Islamic tertiary institutions, and can also provide useful information for policy makers in improving the quality of education in tertiary institutions. In addition, this research is also expected to be able to provide benefits for lecturers and students in strengthening their competence and academic abilities. In this study, the research method used was quantitative. Overall, this research is expected to be able to provide a better understanding of the effect of implementing a hybrid learning model on the learning quality and competence of students in Islamic tertiary institutions. It is hoped that the results of this research will be able to provide input and recommendations for tertiary institutions in developing better and more effective learning models. Besides that, the results of this study are also a source of reference for researchers and academics who are interested in the topic of hybrid learning and education in higher education

RESEARCH METHODOLOGY

The method used by researchers in conducting this research is a quantitative method. This aims to determine the response of educators and students about the hybrid learning method. The quantitative method is a method that focuses on collecting, analyzing, and explaining the results of data containing numbers(Mishra et al., 2020; Zhang & Ma, 2020). The actions or steps taken by the researchers to be able to obtain the data are by observing and disseminating the Google from link. Collecting this data was done in April. The researcher disseminated it only to lecturers and students, because the researcher adjusted this research based on the title raised. To collect data about this hybrid learning model, researchers only distribute it to students who are on the UIN Mahmud Yunus Batusangkar campus.

The place of research on this hybrid learning model was only carried out in one university. Data collection was carried out by distributing questionnaires to students to be able to find out what percentage of appropriateness the hybrid learning model was and with this model students could more easily understand the material being conveyed. The researcher conducted this research by distributing Google From to students and lecturers using the Wastaap application which was used as the sample

in this research.(Acikkar & Akay, 2009). Characteristics in this study include students who can provide clear answers, students who can provide information about the questions asked. Questions made by researchers are in the form of multiple choice questions where the answers from these students will provide information about the hybrid learning model. The results obtained from filling out this questionnaire were as many as 1,000 people filled out the questionnaire on the Google From link that had been shared by the researcher.



The results of this questionnaire distribution will later be presented with data that has been collected by calculating the percentage of each question that has been given by researchers related to the implementation of the hybrid learning model in Islamic tertiary institutions. This quantitative research is complemented by statistics, namely in the form of random data collection techniques and when the required sample is clear, and also describes the data by describing important data(Koivisto & Hamari, 2019; Nicola et al., 2020). After that, each question was given to students and lecturers and then the researcher explained it in the words of the researcher and by presenting it in tabular form. Researchers use the opinions of experts in discussing this study, as well as other researchers related to the research title of this hybrid learning model. In the discussion later, the researcher will develop his argument by using the opinion of the experts as a reference to get various conclusions that will be put forward later. So that later it can be a way for research that is appropriate to the problem at hand.

RESULT AND DISCUSSION

The results obtained by the researchers on the data that have been proven through the methods used, that the application of this hybrid learning model is given approval by the respondents where the consent was given by the respondents through the distribution of questionnaires distributed by the researchers. The learning model can be done with various learning processes in order to achieve certain goals, this model is dependent on the context, based on the general background the model is a simplified description of a complex system or concept. In the context of learning, models can be in the form of learning methods that have been tested by educational experts, to help students understand or remember and apply what has been given by lecturers or educators.

Hybrid learning is also known as blended learning and a teaching approach that combines traditional classroom calls with online learning. This use of technology aims to enhance the learning experience and provide students with more opportunities for engagement. Some of these hybrid

learning models are different, but there are also some common approaches, such as the rotational model. their coursework online, but still have face-to-face meetings or interactions with lecturers and peers.

The virtual model is enriched in that students spend most of their time studying online, but they also have to attend classes or face-to-face lessons to get additional involvement and support from lecturers and classmates. The benefits of this hybrid learning are that it enhances personalized learning experiences, and students will get the opportunity to develop important digital reading skills. However, this hybrid learning also requires careful planning and implementation to ensure that every student receives high-quality support and receives instruction both offline and online. This hybrid learning can be a valuable policy to provide students with a more personal and easy learning experience.

There are several that can be used in higher education including the reverse class model in the implementation of this model, students can watch lectures or read completely online before coming to class, allowing time in class to be used for student group work, joint discussions, and interactive activities. other. Furthermore, the mixed online model, while this model combines traditional classroom instructions with online learning modules which can include interaction videos, multimedia resources, quizzes and others. Finally, the collaborative hybrid model in this model, students must be able to work together in virtual or online team discussion forums, unity in assignments and projects while still receiving feedback and guidance from their instructors.

Regardless of the model used, hybrid learning in higher education can also provide students with a greater network of educational resources and more convenience in terms of language and wherever they study or study. However, it also requires careful implementation and planning to ensure that students receive high quality teaching and support both offline and online. Institution for teachers to be able to ensure that every student can deliver and design hybrid courses effectively.

Information:

SS = Totally Agree

S = Agree

KS = Disagree

STS = Strongly Disagree

Table 1. The percentage of respondents to the implementation of the hybrid learning model atIslamic tertiary institutions

NO	QUESTION	SS	S	KS	STS
1	Hybrid learning methods in the learning process can make it easier for students and lecturers	22.9%	71.4%	2.8%	2.8%
2	Hybrid learning methods can foster student interest in learning	20%	62.9%	11.4%	5.7%
3	The hybrid learning method makes the teaching and learning process more effective	27.8%	61.1%	8.3%	2.8%
4	Using the hybrid learning method in the learning process there are no obstacles	8.3%	52.8%	30.6%	8.3%
5	Is the hybrid learning method easy to understand	16.7%	69.4%	8,3	5,6

Impelementation of Hybrid Learning Models in Islamic Universities in Asian Co					Research Papers	
6	Through the hybrid learning method can students understand learning easily	19.4%	61.1%	11.1%	8.3%	
7	Through the hybrid learning method, are students close to technology?	19.4%	77.8%	2.8%	0%	
8	Can the hybrid learning method be applied at every level of education?	16.7%	69.4%	8.3%	5.6%	
9	The hybrid learning method is able to help students analyze something systematically	19.4%	63.9%	13.9%	2.8%	
10	The hybrid learning method is able to make students actively involved in class activities	27.8%	58.3%	8,3	5.6%	
11	The hybrid learning method is one way to keep up with the times	25%	75%	0%	0%	
12	The implementation of the hybrid learning model is a way to catch up on material that was left behind during the Covid-19 pandemic	16.7%	75%	8.3%	0%	
13	The hybrid learning model is very suitable for basic education	16.7%	55.6%	16.7%	11.1%	
14	With the hybrid learning model, it will get the expected learning outcomes	20%	62.9%	11.4%	5.7%	
15	Before implementing the hybrid learning model the teacher or lecturer must pay attention to the main concepts first	19.4%	72.2%	8.4%	4.2%	
16	The hybrid learning model prioritizes student characteristics	13.9%	66.7%	11.1%	8.3%	
17	The hybrid learning model can make it easier for teachers or lecturers to convey material	13.9%	72.2%	11.1%	2.8%	
18	The hybrid learning model is included in the integrative learning model	13.9%%	72.2%	11.1%	2.8%	
19	Hybrid learning models can improve access, and cost effectiveness	8.6%	77.1%	8.6%	5.7%	
20	Can this hybrid learning model increase student participation in learning?	16.7%	66.7%	11.1%	5.6%	

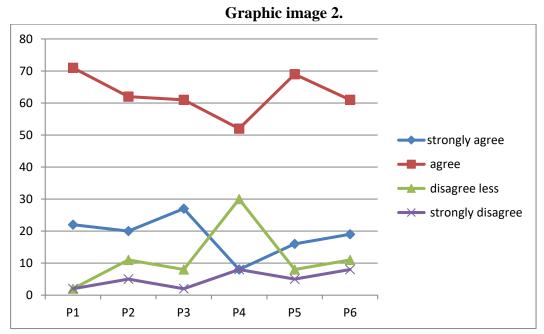
Some of the answers given by the respondents listed in table 1 above prove that 77% of the hybrid learning model is very suitable in tertiary institutions, because it can create an effective and conducive learning atmosphere. This hybrid learning model can help students learn through content or it can also be from material or knowledge obtained independently. This hybrid learning model can

make it easier for students and lecturers as well as the approval of the answers given by the respondents in the questionnaire distributed by the researcher.

The hybrid learning model can make the teaching and learning process more effective because 27% of respondents strongly agree with this. The hybrid learning model combines or combines several categories of learning models, combining different learning models helps provide more and varied interactions between students and educators, thus enabling students to develop abilities from different skills, this allows students to learn with better. The hybrid learning model can make students learn in different contexts, either using technology or through direct interaction. This can help students expand their learning methods and adjust their preferred learning methods according to the needs of the students themselves.

This hybrid learning model also has drawbacks, namely 30% of the questionnaires responding that there are obstacles to this hybrid learning. The constraints of the hybrid learning model may be more difficult to understand than the special learning model because more than one model is involved, therefore, the hybrid model requires sufficient time and even greater resources to be developed and trained. The next obstacle is that sometimes this hybrid model cannot be integrated with existing systems, this is more directed at difficulties in integration. While the aim of the hybrid model is to increase the performance of the particular model, it doesn't always turn out to be better. Furthermore, these constraints require sufficient data to be able to get good results. Besides the higher cost,

This learning model when applied to the basic education level of respondents strongly disagreed as much as 11%, this is probably because at the elementary school level the students are still children because this learning often changes according to the shift when entering school or campus. However, there are also factors that need to be considered in implementing a hybrid learning model in basic education. One of the important factors is the availability of sufficient technology and supporting infrastructure needed for online learning. Apart from that, there needs to be a good plan to manage the use of technology and ensure that all students can get the maximum benefit from the hybrid learning model.



So this hybrid learning can be a valuable action for transferring students so that the learning experience becomes easier and better, with this hybrid learning model students can or are able to complete some of their special assignments easily. This hybrid learning model is very suitable for tertiary institutions because it can make the learning atmosphere conducive and effective. So hybrid learning can make valuable reactions so that the learning experience of these students is better and more developed with this hybrid learning model and students are able to complete their assignments easily,

This hybrid learning model still has constraints and deficiencies, the constraints of the hybrid learning model are that it is more difficult for students to understand specific learning models because more than one model is involved. Therefore, this hybrid learning model must have very sufficient or a lot of time and resources that must be even greater to be developed and trained, and also this hybrid model cannot be integrated with existing systems, in this case it is more focused on difficulties. in integration. While the goal of the hybrid model is very good, namely to increase the performance of a particular model, it is not always for the better. The constraints contained in the hybrid learning model must also require sufficient data in order to get good results besides having a high cost.

CONCLUSION

After this research was conducted about the implementation of the hybrid learning model in Islamic tertiary institutions. Researchers used quantitative methods by analyzing and explaining the data obtained, researchers conducted questionnaires, observations and interviews with students to obtain results from research on the implementation of the hybrid learning model in Islamic higher education. Then the researchers got the results of this study that the respondents agreed with the hybrid learning model in Islamic tertiary institutions. The impact of this hybrid learning model is that students can be active in both online and offline learning. The implementation of this hybrid learning model can be done by making learning clear and structured. Next determine the technology to be used such as learning media applications that can support student learning activities online. Develop learning materials according to the hybrid learning model strategy. This learning material can be in the form of video learning and online learning models that students must follow and work on independently.

After all the preparations have been made, the tertiary institution must implement a hybrid learning strategy. This strategy can be in the form of face-to-face learning which will be combined with online learning, or online learning which is complemented by face-to-face interactions. After learning is complete, a tertiary institution must evaluate and improve. Evaluation is carried out to determine the effectiveness of the hybrid learning model that has been implemented, while improvements are made to overcome obstacles or problems that arise during the learning process. The implementation of the hybrid learning model in Islamic tertiary institutions requires the active involvement of all parties involved, including students and lecturers.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

REFERENCES

- Abu-Ras, W., Birani, A., Suarez, ZE, & Arfken, CL (2022). Palestinian Muslim College Students' Attitudes to Mental Health Treatment: A Comparative Study. International Journal of Environmental Research and Public Health, 19(23), 16005.<u>https://doi.org/10.3390/ijerph192316005</u>
- Acikkar, M., & Akay, MF (2009). Support vector machines for predicting the admission decision of a candidate to the School of Physical Education and Sports at Cukurova University. Expert Systems with Applications, 36(3), 7228–7233.<u>https://doi.org/10.1016/j.eswa.2008.09.007</u>

- Aljehani, HA (2019). Impact of Social Media on Social Value Systems among University Students in Saudi Arabia. International Journal of Education and Practice, 7(3), 216– 229.https://doi.org/10.18488/journal.61.2019.73.216.229
- Alturise, F. (2020). Evaluation of Blackboard Learning Management System for Full Online Courses in Western Branch Colleges of Qassim University. International Journal of Emerging Technologies in Learning (IJET), 15(15), 33.<u>https://doi.org/10.3991/ijet.v15i15.14199</u>
- Basavarajappa, PS, Patil, SB, Ganganagappa, N., Reddy, KR, Raghu, AV, & Reddy, Ch. V. (2020). Recent progress in metal-doped TiO2, non-metal doped/codoped TiO2 and TiO2 nanostructured hybrids for enhanced photocatalysis. International Journal of Hydrogen Energy, 45(13), 7764– 7778.<u>https://doi.org/10.1016/j.ijhydene.2019.07.241</u>
- Ben-Daya, M., Hassini, E., & Bahroun, Z. (2019). Internet of things and supply chain management: A literature review. International Journal of Production Research, 57(15–16), 4719– 4742.https://doi.org/10.1080/00207543.2017.1402140
- Bhatla, N., Aoki, D., Sharma, DN, & Sankaranarayanan, R. (2018). Cancer of the cervix uteri. International Journal of Gynecology & Obstetrics, 143, 22–36.<u>https://doi.org/10.1002/ijgo.12611</u>
- Bin Abdulrahman, KA, Alghamdi, HA, Alfaleh, RS, Albishri, WS, Almuslamani, WB, Alshakrah, AM, Alsuwailem, HM, & Alkhelaiwi, SA (2022). Smoking Habits among College Students at a Public University in Riyadh, Saudi Arabia. International Journal of Environmental Research and Public Health, 19(18), 11557.<u>https://doi.org/10.3390/ijerph191811557</u>
- Cavalcante, IM, Frazzon, EM, Forcellini, FA, & Ivanov, D. (2019). A supervised machine learning approach to data-driven simulation of resilient supplier selection in digital manufacturing. International Journal of Information Management, 49, 86–97. <u>https://doi.org/10.1016/j.ijinfomgt.2019.03.004</u>
- Dalenogare, LS, Benitez, GB, Ayala, NF, & Frank, AG (2018). The expected contribution of Industry 4.0 technologies for industrial performance. International Journal of Production Economics, 204, 383–394.<u>https://doi.org/10.1016/j.ijpe.2018.08.019</u>
- Duan, Y., Edwards, JS, & Dwivedi, YK (2019). Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda. International Journal of Information Management, 48, 63–71. https://doi.org/10.1016/j.ijinfomgt.2019.01.021
- Dwivedi, YK, Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos , V., Ilavarasan, PV, Janssen, M., Jones, P., Kar, AK, Kizgin, H., Kronemann, B., Lal, B., Lucini, B., ... Williams, MD (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. International Journal of Information Management, 57, 101994.<u>https://doi.org/10.1016/j.ijinfomgt.2019.08.002</u>
- Frank, AG, Dalenogare, LS, & Ayala, NF (2019). Industry 4.0 technologies: Implementation patterns in manufacturing companies. International Journal of Production Economics, 210, 15– 26.<u>https://doi.org/10.1016/j.ijpe.2019.01.004</u>
- Gharib, RY (2023). The Rebirth of the Madrasa Through Deconstructive Architecture: The Case of the College of Islamic Studies in Qatar. International Journal of Islamic Architecture, 12(1), 163–188.<u>https://doi.org/10.1386/ijia 00098 1</u>
- Govindan, K., & Hasanagic, M. (2018). A systematic review on drivers, barriers, and practices towards circular economy: A supply chain perspective. International Journal of Production Research, 56(1–2), 278–311.<u>https://doi.org/10.1080/00207543.2017.1402141</u>
- Hayee, F., Fongkaew, W., Chanprasit, C., Kaewthummanukul, T., & Voss, JG (2021). Sexual risk behaviors and influencing factors among Muslim adolescents on the southern border of Thailand. International Journal of Adolescent Medicine and Health, 33(6), 469–477.<u>https://doi.org/10.1515/ijamh-2019-0221</u>
- Humanistic and Mental Health Behaviorism in Shaping the Learning Process in Covid-19 Outbreak. (2020).InternationalJournalofPharmaceuticalResearch,12(04).https://doi.org/10.31838/ijpr/2020.12.04.483PharmaceuticalResearch,
- ITC Guidelines for Translating and Adapting Tests (Second Edition). (2018). International Journal of Testing, 18(2), 101–134.<u>https://doi.org/10.1080/15305058.2017.1398166</u>
- Koivisto, J., & Hamari, J. (2019). The rise of motivational information systems: A review of gamification research. International Journal of Information Management, 45, 191– 210.<u>https://doi.org/10.1016/j.ijinfomgt.2018.10.013</u>
- Kousar, R., & Brett, P. (2021). Unity in Diversity?: The Representation of Ethnic Diversity in Pakistani Textbooks and through Teacher and Student Perspectives. The International Journal of Learner Diversity and Identities, 29(1), 37–52. https://doi.org/10.18848/2327-0128/CGP/v29i01/37-52

- Li, S., Wang, Y., Xue, J., Zhao, N., & Zhu, T. (2020). The Impact of COVID-19 Epidemic Declaration on Psychological Consequences: A Study on Active Weibo Users. International Journal of Environmental Research and Public Health, 17(6), 2032.<u>https://doi.org/10.3390/ijerph17062032</u>
- Makridakis, S., Spiliotis, E., & Assimakopoulos, V. (2018). The M4 Competition: Results, findings, conclusion and way forward. International Journal of Forecasting, 34(4), 802– 808.<u>https://doi.org/10.1016/j.ijforecast.2018.06.001</u>
- Maxwell, AE, Warner, TA, & Fang, F. (2018). Implementation of machine-learning classification in remote sensing: An applied review. International Journal of Remote Sensing, 39(9), 2784– 2817.<u>https://doi.org/10.1080/01431161.2018.1433343</u>
- Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during the lockdown period of COVID-19 pandemic. International Journal of Educational Research Open, 1, 100012.<u>https://doi.org/10.1016/j.ijedro.2020.100012</u>
- Mulyaningsih, I., Rahmat, W., Maknun, D., & Firdaus, W. (2022). How Competence of Production, Attention, Retention, Motivation, and Innovation can Improve Students' Scientific Writing Skills. International Journal of Language Education, 6(4), 368.<u>https://doi.org/10.26858/ijole.v6i4.34360</u>
- Naim, N., Aziz, A., & Teguh, T. (2022). Integration of Madrasah diniyah learning systems for strengthening religious moderation in Indonesian universities. International Journal of Evaluation and Research in Education (IJERE), 11(1), 108.<u>https://doi.org/10.11591/ijere.v11i1.22210</u>
- Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. International Journal of Surgery, 78, 185–193.<u>https://doi.org/10.1016/j.ijsu.2020.04.018</u>
- Page, MJ, McKenzie, JE, Bossuyt, PM, Boutron, I., Hoffmann, TC, Mulrow, CD, Shamseer, L., Tetzlaff, JM, Akl, EA, Brennan, SE, Chou, R., Glanville, J., Grimshaw, JM, Hróbjartsson, A., Then, MM, Li, T., Loder, EW, Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. International Journal of Surgery, 88, 105906.<u>https://doi.org/10.1016/j.ijsu.2021.105906</u>
- Patricia Aguilera-Hermida, A. (2020). College students' use and acceptance of emergency online learning due to COVID-19. International Journal of Educational Research Open, 1, 100011.<u>https://doi.org/10.1016/j.ijedro.2020.100011</u>
- Sajid, MU, & Ali, HM (2018). Thermal conductivity of hybrid nanofluids: A critical review. International Journal of Heat and Mass Transfer, 126, 211–234.<u>https://doi.org/10.1016/j.ijheatmasstransfer.2018.05.021</u>
- the International Peace College South Africa, South Africa, Mohammed, TAS, Al-Sowaidi, B., & Banda, F. (2021). Towards a Technology-Enhanced Blended Approach for Teaching Arabic for Shari'ah Purposes (ASP) in the Light of the South African National Qualifications Framework. International Journal of Information and Education Technology, 11(1), 1–9.https://doi.org/10.18178/ijiet.2021.11.1.1481
- Zhang, Y., & Ma, ZF (2020). Impact of the COVID-19 Pandemic on Mental Health and Quality of Life among Local Residents in Liaoning Province, China: A Cross-Sectional Study. International Journal of Environmental Research and Public Health, 17(7), 2381.<u>https://doi.org/10.3390/ijerph17072381</u>
- Zhong, B.-L., Luo, W., Li, H.-M., Zhang, Q.-Q., Liu, X.-G., Li, W.-T., & Li, Y. (2020). Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: A quick online cross-sectional survey. International Journal of Biological Sciences, 16(10), 1745–1752.<u>https://doi.org/10.7150/ijbs.45221</u>
- Zhou, Z. -H. (2018). A brief introduction to weakly supervised learning. National Science Review, 5(1), 44– 53.<u>https://doi.org/10.1093/nsr/nwx106</u>
- Zhu, Y., Zhou, L., Xie, C., Wang, G.-J., & Nguyen, TV (2019). Forecasting SMEs' credit risk in supply chain finance with an enhanced hybrid ensemble machine learning approach. International Journal of Production Economics, 211, 22–33.<u>https://doi.org/10.1016/j.ijpe.2019.01.032</u>

Copyright Holder : © Bokarewa Katona et al. (2023)

First Publication Right :

© Journal Emerging Technologies in Education

This article is under:

