



The Impact of Using Online Learning Software During the Covid-19 Pandemic in Higher Education

Regina Yoantika Natalie ¹, Devin Mahendika ², Amjad Salong ³, Shanshan Xu ⁴, Lexi Jalu Aji ⁵

¹ Universitas Sanata Dharma, Indonesia

² Universitas Andalas, Indonesia

³ Universitas Pattimura, Indonesia

⁴ Texila American University, Guyana

⁵ Universitas Pertahanan, Indonesia

Corresponding Author: Regina Yoantika Natalie, E-mail: reginayoantika@gmail.com

Article Information:

Received April 10, 2024

Revised April 15, 2024

Accepted April 20, 2024

ABSTRACT

The occurrence of covid-19 has a major effect on the smooth running of education, one of which is in higher education. So that lecturers and students need supporting media in the smooth learning process, such as the use of software. The use of software can make it easier for students to carry out the online learning process. This study aims to reveal the effect of using software on students in carrying out the distance learning process. In conducting this research, researchers used quantitative research methods with observations made in the form of distributing questionnaires to students to see the effect of software as a supporting medium in the learning process. The results of this study are that learning media using software is very helpful and has a good impact on students in the learning process during the covid-19 pandemic. The conclusion of this study is that fluency in the world of education during the co-19 pandemic is very limited, because students cannot integrate directly with lecturers in the learning process, therefore students and lecturers need media that can be used as supporting tools such as software for the smooth discussion and learning process, teaching in higher education. The limitation in this study is that researchers did not get accurate data in data collection. Therefore, it is hoped that future researchers will also conduct the same research in order to maintain relevant data results in analyzing the use of software in the learning process in higher education. This study also recommends that future researchers make this topic an ongoing discussion to obtain relevant and very effective research results so that this research can become a benchmark in the influence of using software as a learning medium during the covid-19 pandemic, so as to create a learning process based on supporting science and technology.

Keywords: Higher Education, Software, Online Learning

Journal Homepage

<https://ejournal.staialhikmahpariangan.ac.id/Journal/index.php/jiltech/>

This is an open access article under the CC BY SA license

<https://creativecommons.org/licenses/by-sa/4.0/>

How to cite:

Natalia, Y. R., Mahendika, D., Salong, A., Xu, S., Aji, J. L. (2024). The Impact of Using Online Learning Software During the Covid-19 Pandemic in Higher Education.

INTRODUCTION

After the occurrence of covid-19 all activities in the world are limited including educational activities, the reason for limiting all human activities is to prevent the spread of the covid-19 outbreak so that it does not spread more widely (Gautret et al., 2020; Lozano-Díaz et al., 2020; Selvaraj et al., 2021). Educational activities in Indonesia starting from elementary school, secondary school and including higher education, all learning processes are carried out online without direct interaction between teachers and students (Lai et al., 2020; Nicola et al., 2020). The most effective step or solution in this covid pandemic situation is to close all schools and campuses to reduce the spread of the covid-19 virus (Bulnes et al., 2016; Ellahi et al., 2020). The policy provided by the government is the legalization of home learning with facilities that can be utilized to support the online learning process.

Various policies carried out by the government have been carried out in several regions to minimize the spread of this outbreak by imposing PSBB (large-scale social restrictions) (Levine et al., 2018; Rizun & Strzelecki, 2020; Selvaraju et al., 2020). During a pandemic, time and distance become a problem for lecturers and students so that an effective solution is to use various media on the internet to overcome difficulties so that lecturers and students continue to activate learning activities even though the campus is closed (S. Li et al., 2020). As we know that the use of the internet can be used anytime and anywhere, using the internet also makes us realize that it has not been fully used properly and most of the internet is not used to develop our potential but only to do fun and spend time in vain.

There are many things that must be considered in this online learning process, namely that students must be more independent in the learning component (Sohrabi et al., 2020; Tongkao-on et al., 2021; Yang et al., 2020). Students must be good at managing time and discussing together in managing materials, in order to develop students' abilities in science (Jia et al., 2021; Patil et al., 2021). Supporting media that can be used as online learning infrastructure can make it easier for students to participate in distance learning, students can save material, make assignments, and students can recognize several technologies that can be utilized positively, one of which is the use of software, due to the limited direct activities of educators with students, software can be used as a classroom for science (Roberts & David, 2020). Some forms of devices that support online learning include WhatsAap, Microsoft Word, Google Classroom, Youtube, Zoom Meeting, and so on.

Online systems using this software have very effective capabilities and have been widely accessed, this is certainly familiar and very easy to use and has proven to be a supporting tool in the online learning process during the covid-19 pandemic (Oliphant et al., 2019; Patricia Aguilera-Hermida, 2020; Sheng et al., 2019). The advantages of this software are that educators and students can communicate face-to-face even though

they don't meet physically, not limited by space and time because it can be used anywhere and anytime (Al-Marroof & Al-Emran, 2018; H. Y. Li et al., 2020). In addition, students not only learn about learning materials, students who are unfamiliar with technology can learn and get to know technology more closely, and can utilize this technology properly to help facilitate various learning activities or work for an educator and student.

Relevant research related to the impact of the influence of software in online learning in higher education during the covid-19 pandemic, there is a good and significant influence between the variable of the effectiveness of the use of technology and information with the variable of online learning during covid-19 (Ghazal et al., 2022; Ma et al., 2019; Pu et al., 2018). This is because the use of technology is appropriate and has been applied by users as a source of knowledge (Golding-Day et al., 2022). This software is most often used by many people to function as a tool and facilitate the implementation of online learning activities during the pandemic, and students feel comfortable because it is supported by the good quality of learning materials, with a variety of software used such as Classroom, Zoom Meeting, Google Meet, Microsoft Office, Browser Software, etc.

Based on the expression of previous research, it can be said that there is a difference and a novelty contained in the current research (Gan et al., 2019; Xi & Hamari, 2019). In this study, researchers revealed about an innovation made in the learning system that can be through the use of software, this innovation can also be used as a tool to overcome the problems and obstacles experienced by educators and students in carrying out the learning process (Dubey et al., 2020; Zhonggen, 2019). In this study, researchers also present the results of the study in the form of graphs and analysis containing the percentage level of how students view innovations made through the software usage system in online learning in higher education.

The important purpose of conducting this research is to find out the impact of using software for educators and students in facilitating the learning process in the covid-19 period, because everything must have advantages and disadvantages. So, researchers conducted this research to overcome the problems that limit educators and students for the continuity of online learning. There are several shortcomings that become obstacles, namely limited social interaction, lack of accessibility and adequate equipment, natural difficulties in maintaining focus and motivation to learn, without realizing that the use of this software can also make students develop and expand their knowledge because they can get to know technology.

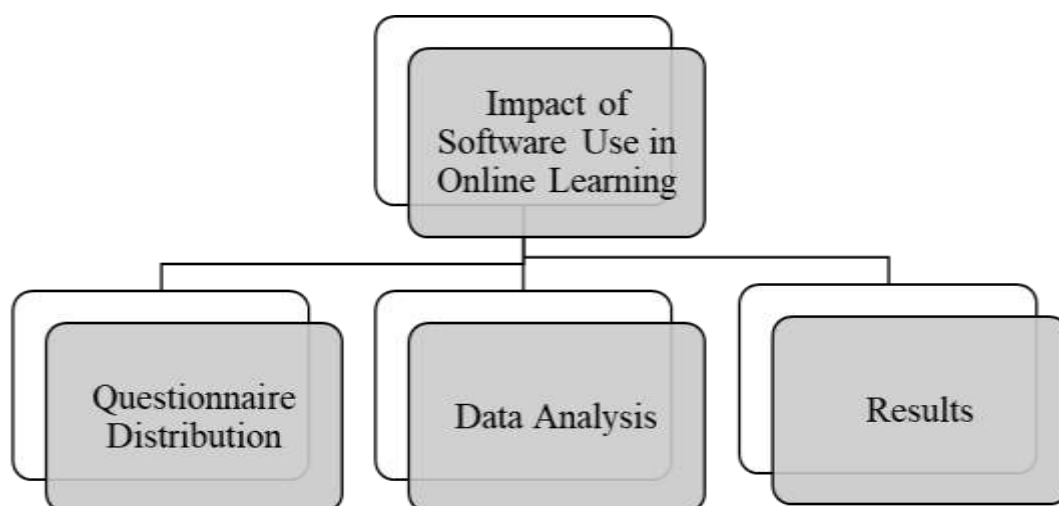
Based on the explanation above, the researcher is interested in taking the title of the impact of using online learning software in the covid-19 period in higher education. This research was conducted to add knowledge and insight related to the title, minimize the problems that exist in the title and also be able to find out how the consequences or impacts of using software on online learning during the covid-19 pandemic (Bowden et al., 2018; Igos et al., 2019). Students can learn to be innovative, take initiative and be creative through the media that can be used, students can also develop the ability to be

independent in learning and responsibility in using information and communication technology (ICT).

RESEARCH METHODS

The method used by researchers in conducting this research is quantitative method. This quantitative method is a method that focuses on collecting, analyzing, and interpreting data containing numbers. The steps or actions taken by the researcher to obtain this data are to make observations and spread the googel from link, the researcher spreads this link only specifically to students and lecturers, because the researcher adjusts this research based on the title raised. (Huang et al., 2018; Kittana et al., 2018). The sample of this study amounted to 58 people, where the sample came from students and lecturers who had experienced or who had undergone online learning during the covid-19 period at the college.

The instrument that can be used by researchers in conducting this research is by distributing questionnaires using a link via google from which contains questions related to the impact of using online learning software during the covid-19 pandemic in higher education and the answers are in the form of multiple choice and short answers (Slabunov & Singh, 2019). Researchers conducted this research by sharing the google from link via whatsapp with students and lecturers who were sampled in this study. The characteristics in this research observation include students who can provide clear answers, students who can provide information related to the questions asked, and students who have undergone online learning during covid-19.



The results of distributing this questionnaire will later be presented by calculating the percentage of each answer to the questions given regarding the impact of using online learning software during the co-19 pandemic in higher education (Ao et al., 2012). In this study, researchers used data collection techniques through interviews and observations in order to obtain more complete information regarding the effects experienced by lecturers or students, this research interview can be seen how the impact of using online learning software during the pandemic (Wang et al., 2020). Researchers

use the opinions of experts in the discussion of this research, and researchers develop arguments in the study of this research and make the opinions of experts as a reference for the various conclusions obtained.

DISCUSSION RESULTS

Researchers have obtained evidentiary data on the review of the effects of using online learning software in higher education, in the research study analyzed, it was found that the supporting factors for learning which for the effectiveness of the continuity of learning are inseparable from the use of software. During covid-19 the education system changed, all activities including learning activities were held online, so this made it difficult for an effective and efficient learning process. Where it is known, learning has been more commonly carried out in the form of face-to-face conducted in a room. The room is equipped with facilities and infrastructure used to assist the teaching and learning process. Such as whiteboards, desks, infocus and other supporting infrastructure. It is also inseparable from how the process of teaching and learning is conducive, this is because students meet directly with educators or teachers, the learning atmosphere can also be controlled because the delivery of learning is carried out directly without any obstacles. However, the direct learning process cannot be carried out as usual since the spread of a virus, namely covid-19.

The government's concern about the spread of Indonesians who will be infected with the virus has limited some residents' activities, such as activities in offices, markets and schools. In this condition, a lockdown was imposed for several guardians, which was also applied to the world of education, causing limitations on the learning process to pursue directly when all schools were completely closed. The Ministry of Education and Culture and the government issued new rules and directions by providing online learning solutions for schools in corona-prone zones. Various guidelines for organizing online learning are given, with the hope that learning can still run effectively and efficiently, not only that the learning guidelines are also expected to help educators in carrying out their duties as a teacher to convey material to students optimally. But of course there will be many problems and obstacles during the online learning process, such as unconducive and negligence of students following learning at home.

It is also a big challenge for an educator in carrying out the learning process, this challenge can make educators think critically about covid-19 learning. Creative educators will think about how to keep online learning running effectively and efficiently, so that learning objectives are still optimally achieved in the midst of covid-19. So with the above obstacles experienced by both students and educators, Software is here to help educators in online learning that takes place in a short time, about two years since the enactment of a massive lockdown in the homeland. Various benefits are obtained from the use of this software that supports the learning process to be easier, but with quite good results. With its use, which is not so difficult for educators to make adjustments to conditions with the rise of covid can be overcome properly, so students

in the millennial generation who have often met with various kinds of existing technology.

Software is a program or instruction that tells hardware what to do and how to do it, software is software which in other words is the part of the computer system that cannot be touched. Software is data that is stored and digitally formed with specific purposes and functions, this software can also be used in making assignments and software can help educators and students to carry out the online learning process during the covid-19 pandemic. This software makes it easier for educators and students to interact for the effectiveness of online learning, to get these results researchers conducted observations, interviews and distributed questionnaires to find out how much impact the use of online learning software has on higher education.

Researchers use quantitative methods of distributing google from links and interviews with students who have undergone online learning periods. Related to that, students can provide answers and give a good response in considering how much effect the use of this software has in online learning in the covid-19 period. Based on the results of the questionnaire research, the researcher distributed the google from link to 58 students and including lecturers who use software in online learning. The purpose of distributing this angket is to see the various perspectives felt by software users while participating in online learning. In addition, researchers also get the results of information that is suitable and appropriate for the purpose of processing research data.

Description:

1. SS : Strongly Agree
2. S : Agree
3. KS : Disagree
4. TS : Disagree

Table 1. Percentage response to the impact of using online learning software in the covid-19 period in higher education.

No	Statement	SS	S	KS	TS
1	Software can be used by lecturers and students in the online learning process.	36,2%	60,3%	3,5%	0%
2	Software can help lecturers in explaining online learning	36,2%	60,3%	3,5%	0%
3	Software can be used in online learning	37,9%	58,6%	3,5%	0%
4	Software can be used as a tool in online learning	39,7%	58,6%	0%	1,7%
5	Software can be used as an alternative solution in online learning	25,9%	69%	5,2%	0%
6	Through software, students can understand online learning materials easily.	17,2%	62,1%	20,7%	0%
7	Software can facilitate students in interacting when doing the online learning process	22,4%	62,1%	15,5%	0%

8	Software can help students in making assignments during the covid-19 pandemic	24,1%	69%	6,9%	0%
9	Software can make it easier for lecturers to share material effectively during the covid-19 period	25,9%	63,8%	10,3%	0%
10	Software can help students in storing material properly and safely	27,6%	65,5%	6,9%	0%
11	Software can make it easier for students to find information related to online learning	27,6%	69%	1,7%	1,7%
12	Software can be useful in the online learning process	25,9%	67,2%	6,9%	0%
13	Software is easily accessible anywhere and anytime	24,1%	46,6%	27,6%	1,7%
14	Software can make students close to technology	34,5%	62,1%	3,4%	0%
15	The use of software becomes ineffective when used by lecturers and students who are difficult to get a network	58,6%	36,2%	2,6%	2,6%
16	The teaching-learning process using software is harder to understand than face-to-face learning.	31%	56,9%	10,3%	1,8%
17	Using software causes lecturers and students to be less active than offline learning.	34,5%	48,3%	13,8%	3,4%
18	Software makes it easier for lecturers and students to hold learning processes at more flexible hours	22,4%	62,1%	13,8%	1,7
19	Software can cause flexibility of online learning	17,2%	70,7%	12,1%	0%
20	Software can make it easier for students to repeat learning	24,1%	56,9%	19%	0%

Some of the responses given by students in Table 1 above prove that the use of this software can be used for online learning in higher education, according to the first agreement given by the respondent, namely 60%. But there are some students who disagree with it as much as 3%, most likely the obstacles experienced by these respondents are due to the lack of using technology, making it difficult for students to follow the online learning process. Students must be experts and understand to recognize technology, because along with the times technology is growing, therefore, students must follow these developments. Because if students cannot use software, students have difficulty in utilizing existing technology to be used in learning.

The percentage of respondents on the impact of using online learning software during the covid-19 pandemic in higher education gave a strongly agreed answer. Respondents gave answers strongly agreeing that the most impactful thing in using this software is not effective when used in places that are not covered by the network as much as 58%. This is one of the obstacles that greatly affects the continuity of learning,

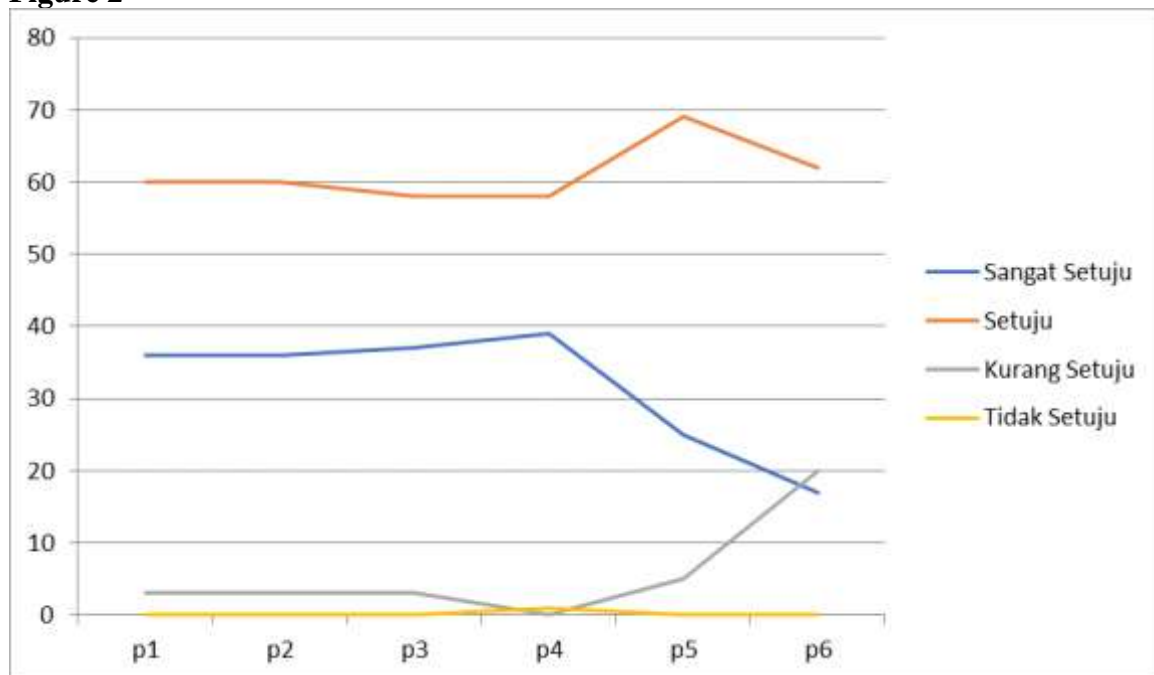
so that students cannot attend lectures perfectly. Therefore, students must find an alternative place or solution that can support the online learning process that has been determined by the government during the covid-19 pandemic.

From the many statements given by researchers, it can be calculated that 70% of the approval given by the questionnaire about software can lead to flexibility online. A person is able to think creatively and find alternative solutions when facing unexpected problems or challenges and a person can take actions that are used to achieve common goals. The use of this software can lead to online flexibility, which means that online learning using this software can be carried out anywhere and anytime as long as it is reached by the network or it can be said without any restrictions, as long as a person improves his life wisely and balanced, this online flexibility can facilitate a person in access to information, communication and increase effectiveness and productivity, employment opportunities, quality of life and finally reduce environmental implications.

The approval given by the questionnaire there are also those who disagree with the impact of using online learning software, the most answer choices are in the problem of software easily accessible anywhere and anytime 27% who disagree with this. This depends on the difficulty level of the software, the software is difficult to use if the software is not compiled or the knowledge is not studied properly, the user will have difficulty using this software. Because if the user does not practice or has no experience in using the software, the user will also have difficulties, this also affects the use of the software. This software must provide clear information and directions to make it easier for users to understand the software, so that it can be accessed anywhere and anytime without experiencing difficulties.

From the many questionnaire agreements, of course there are also those who disagree with the overall impact of using the software, namely as many as 14% of the answers from respondents said they disagreed more with the use of software because it resulted in lecturers and students not being as active as offline learning. Online learning can affect students in participating in the learning process. In this online learning process, students dominantly only listen to the material presented without understanding in depth, only see videos of material that is shared and do assignments given by lecturers to fill student time in order to train students' independence, ability to learn. Of course, basically everything is inseparable from the advantages and disadvantages of each, both in the shortcomings and advantages in its use and in the process itself. The ineffectiveness of using software in online learning during the pandemic is not entirely true, because online learning itself depends on the learning methods used by lecturers, and depends on factors that affect the atmosphere during online learning. Such as curriculum, environment and depending on the policies of the educational foundation.

Figure 2



The percentage results of the researchers found that this software had a major impact on online learning in higher education in the covid-19 period, 67% of the questionnaire agreed that the software could be utilized or used in online learning and to be able to assist students in making assignments given by lecturers, alternative solutions that can be used as supporting media for the sustainability of this online learning are by using this software, by using software students can store all kinds of material that has been learned and that has been obtained independently. Because, students do not need to record as much or as long as the material delivered by the lecturer, students can store various data or material safely. The use of this software can support lecturers or students in online learning during covid-19.

There are several obstacles that can be seen from the respondents' answers regarding the use of this software. Generally, in the research results, educators and students have several obstacles in online learning. Some of these obstacles are not reached by networks in certain areas because in places where it is difficult to get a network, this makes it difficult for lecturers or students to participate in online learning properly without constraints. Students are also constrained by the lack of quotas because there are some students who have minimal economic and quota payments in several learning applications that are not small. In addition, there are also some students who lack the knowledge to understand the use of technology, although not entirely, but of course this will also make it difficult for educators to sustain the online learning process. Students also lack motivation to learn and support from people around them which results in students just following or hearing the materials without students understanding properly what the contents of the material delivered by the educator. Of

course, from all of that there are advantages and This can affect students to follow the learning process or make assignments that students will do, ranging from difficulties in repeating the material on the day of the upcoming exam, making assignments that are not independent and often do copying to being too dependent on filling in the answers to assignments by only relying on Google without further searching whether the answer is correct or not. These shortcomings can become a problem if ignored without being resolved and finding a way out, and will also have a greater impact when online enforcement is eliminated, because it will create a shock for students. Therefore, it is important to know and deal with the shortcomings that exist in the effect of using software in order to run online learning or lectures more effectively and better, knowing it will also make students and educators easy to overcome future problems.

CONCLUSION

After researchers conducted research on the impact of using online learning software during the co-19 pandemic in higher education, researchers obtained data from scopus obtained from publisht or peris. Then researchers used quantitative methods to analyze and interpret the data obtained, researchers conducted observations, interviews and distributed questionnaires to obtain research results. Then the research results that researchers get that respondents strongly agree with the use of software for online learning is very influential in higher education, with the software it can make it easier for students and lecturers to carry out the teaching and learning process even though learning is carried out online. There are many impacts on the use of this software, both positive impacts and negative impacts, some of the negative impacts that can be seen from the results of this study are that online learning is difficult for students to understand due to distance limitations, making students unable to fully focus on understanding the material delivered by lecturers, besides that networks that are not affordable in certain areas also affect the effectiveness of student learning. The use of this software also has a positive impact, namely making it easier for students and lecturers to interact online. By using this software, students can get close to technology and make it easier for students to get or find information easily. Many positive effects are achieved from using this software, especially to make software as a supporting medium for online learning.

REFERENCES

- Al-Marroof, R. A. S., & Al-Emran, M. (2018). Students Acceptance of Google Classroom: An Exploratory Study using PLS-SEM Approach. *International Journal of Emerging Technologies in Learning (IJET)*, 13(06), 112. <https://doi.org/10.3991/ijet.v13i06.8275>
- Ao, S. J., Xiao, W. J., Han, C. M., Li, X. H., Qu, J. F., Zhang, J. E., Guo, Q. Q., & Tian, Z. H. (2012). Cambrian to early Silurian ophiolite and accretionary processes in the Beishan collage, NW China: Implications for the architecture of the Southern Altaids. *Geological Magazine*, 149(4), 606–625. <https://doi.org/10.1017/S0016756811000884>

- Bowden, J., Spiller, W., Del Greco M, F., Sheehan, N., Thompson, J., Minelli, C., & Davey Smith, G. (2018). Improving the visualization, interpretation and analysis of two-sample summary data Mendelian randomization via the Radial plot and Radial regression. *International Journal of Epidemiology*, 47(4), 1264–1278. <https://doi.org/10.1093/ije/dyy101>
- Bulnes, F. G., Usamentiaga, R., Garcia, D. F., & Molleda, J. (2016). An efficient method for defect detection during the manufacturing of web materials. *Journal of Intelligent Manufacturing*, 27(2), 431–445. <https://doi.org/10.1007/s10845-014-0876-9>
- Dubey, R., Gunasekaran, A., Childe, S. J., Bryde, D. J., Giannakis, M., Foropon, C., Roubaud, D., & Hazen, B. T. (2020). Big data analytics and artificial intelligence pathway to operational performance under the effects of entrepreneurial orientation and environmental dynamism: A study of manufacturing organisations. *International Journal of Production Economics*, 226, 107599. <https://doi.org/10.1016/j.ijpe.2019.107599>
- Ellahi, R., Sait, S. M., Shehzad, N., & Ayaz, Z. (2020). A hybrid investigation on numerical and analytical solutions of electro-magnetohydrodynamics flow of nanofluid through porous media with entropy generation. *International Journal of Numerical Methods for Heat & Fluid Flow*, 30(2), 834–854. <https://doi.org/10.1108/HFF-06-2019-0506>
- Gan, Y., Zhang, Y., Cheng, D., Shetty, A., Rath, P., Katarki, N., Bruno, A., Hu, J., Ritchken, B., Jackson, B., Hu, K., Pancholi, M., He, Y., Clancy, B., Colen, C., Wen, F., Leung, C., Wang, S., Zaruvinsky, L., ... Delimitrou, C. (2019). An Open-Source Benchmark Suite for Microservices and Their Hardware-Software Implications for Cloud & Edge Systems. *Proceedings of the Twenty-Fourth International Conference on Architectural Support for Programming Languages and Operating Systems*, 3–18. <https://doi.org/10.1145/3297858.3304013>
- Gautret, P., Lagier, J.-C., Parola, P., Hoang, V. T., Meddeb, L., Mailhe, M., Doudier, B., Courjon, J., Giordanengo, V., Vieira, V. E., Tissot Dupont, H., Honoré, S., Colson, P., Chabrière, E., La Scola, B., Rolain, J.-M., Brouqui, P., & Raoult, D. (2020). Hydroxychloroquine and azithromycin as a treatment of COVID-19: Results of an open-label non-randomized clinical trial. *International Journal of Antimicrobial Agents*, 56(1), 105949. <https://doi.org/10.1016/j.ijantimicag.2020.105949>
- Ghazal, G., Alian, M., & Alkhalwaldeh, E. (2022). E-Learning and Blended Learning Methodologies Used in Universities During and After COVID-19. *International Journal of Interactive Mobile Technologies (IJIM)*, 16(18), 19–43. <https://doi.org/10.3991/ijim.v16i18.32721>
- Golding-Day, M. R., Walker, M. F., & Whitehead, P. J. (2022). Orthotic intervention following stroke: A survey of physiotherapist, occupational therapist and orthotist practice and views in the UK. *International Journal of Therapy and Rehabilitation*, 29(6), 1–16. <https://doi.org/10.12968/ijtr.2021.0177>
- Huang, Y., Shi, R., Gong, M., Zhang, Jingshuang, Li, W., Song, Q., Wu, C., & Tian, W. (2018). Icarin-loaded electrospun PCL/gelatin sub-microfiber mat for preventing epidural adhesions after laminectomy. *International Journal of Nanomedicine*, Volume 13, 4831–4844. <https://doi.org/10.2147/IJN.S169427>

- Igos, E., Benetto, E., Meyer, R., Baustert, P., & Othoniel, B. (2019). How to treat uncertainties in life cycle assessment studies? *The International Journal of Life Cycle Assessment*, 24(4), 794–807. <https://doi.org/10.1007/s11367-018-1477-1>
- Jia, P., Zhang, L., Yu, W., Yu, B., Liu, M., Zhang, D., & Yang, S. (2021). Correction: Impact of COVID-19 lockdown on activity patterns and weight status among youths in China: the COVID-19 Impact on Lifestyle Change Survey (COINLICS). *International Journal of Obesity*, 45(4), 920–920. <https://doi.org/10.1038/s41366-020-00736-8>
- Kittana, N., Assali, M., Abu-Rass, H., Lutz, S., Hindawi, R., Ghannam, L., Zakarneh, M., & Mosa, A. (2018). Enhancement of wound healing by single-wall/multi-wall carbon nanotubes complexed with chitosan. *International Journal of Nanomedicine*, Volume 13, 7195–7206. <https://doi.org/10.2147/IJN.S183342>
- Lai, C.-C., Shih, T.-P., Ko, W.-C., Tang, H.-J., & Hsueh, P.-R. (2020). Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. *International Journal of Antimicrobial Agents*, 55(3), 105924. <https://doi.org/10.1016/j.ijantimicag.2020.105924>
- Levine, S., Pastor, P., Krizhevsky, A., Ibarz, J., & Quillen, D. (2018). Learning hand-eye coordination for robotic grasping with deep learning and large-scale data collection. *The International Journal of Robotics Research*, 37(4–5), 421–436. <https://doi.org/10.1177/0278364917710318>
- Li, H. Y., Cao, H., Leung, D. Y. P., & Mak, Y. W. (2020). The Psychological Impacts of a COVID-19 Outbreak on College Students in China: A Longitudinal Study. *International Journal of Environmental Research and Public Health*, 17(11), 3933. <https://doi.org/10.3390/ijerph17113933>
- 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. <https://doi.org/10.3390/ijerph17062032>
- Lozano-Díaz, A., Fernández-Prados, J. S., Figueredo Canosa, V., & Martínez Martínez, A. M. (2020). Impactos del confinamiento por el COVID-19 entre universitarios: Satisfacción Vital, Resiliencia y Capital Social Online. *International Journal of Sociology of Education*, 79–104. <https://doi.org/10.17583/rise.2020.5925>
- Ma, J.-Q., Sun, Y.-Z., Ming, Q.-L., Tian, Z.-K., Yang, H.-X., & Liu, C.-M. (2019). Ampelopsin attenuates carbon tetrachloride-induced mouse liver fibrosis and hepatic stellate cell activation associated with the SIRT1/TGF- β 1/Smad3 and autophagy pathway. *International Immunopharmacology*, 77, 105984. <https://doi.org/10.1016/j.intimp.2019.105984>
- 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. <https://doi.org/10.1016/j.ijsu.2020.04.018>
- Oliphant, A. J., Thenkabail, P. S., Teluguntla, P., Xiong, J., Gumma, M. K., Congalton, R. G., & Yadav, K. (2019). Mapping cropland extent of Southeast and Northeast Asia using multi-year time-series Landsat 30-m data using a random forest classifier on the Google Earth Engine Cloud. *International Journal of Applied*

- Earth Observation and Geoinformation*, 81, 110–124.
<https://doi.org/10.1016/j.jag.2018.11.014>
- Patil, U., Kostareva, U., Hadley, M., Manganello, J. A., Okan, O., Dadaczynski, K., Massey, P. M., Agner, J., & Sentell, T. (2021). Health Literacy, Digital Health Literacy, and COVID-19 Pandemic Attitudes and Behaviors in U.S. College Students: Implications for Interventions. *International Journal of Environmental Research and Public Health*, 18(6), 3301.
<https://doi.org/10.3390/ijerph18063301>
- 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.
<https://doi.org/10.1016/j.ijedro.2020.100011>
- Pu, Y., Liu, Y., Liao, S., Miao, S., Zhou, L., & Wan, L. (2018). Azithromycin ameliorates OVA-induced airway remodeling in Balb/c mice via suppression of epithelial-to-mesenchymal transition. *International Immunopharmacology*, 58, 87–93. <https://doi.org/10.1016/j.intimp.2018.03.016>
- Rizun, M., & Strzelecki, A. (2020). Students' Acceptance of the COVID-19 Impact on Shifting Higher Education to Distance Learning in Poland. *International Journal of Environmental Research and Public Health*, 17(18), 6468.
<https://doi.org/10.3390/ijerph17186468>
- Roberts, J. A., & David, M. E. (2020). The Social Media Party: Fear of Missing Out (FoMO), Social Media Intensity, Connection, and Well-Being. *International Journal of Human-Computer Interaction*, 36(4), 386–392.
<https://doi.org/10.1080/10447318.2019.1646517>
- Selvaraj, A., Radhin, V., Ka, N., Benson, N., & Mathew, A. J. (2021). Effect of pandemic based online education on teaching and learning system. *International Journal of Educational Development*, 85, 102444.
<https://doi.org/10.1016/j.ijedudev.2021.102444>
- Selvaraju, R. R., Cogswell, M., Das, A., Vedantam, R., Parikh, D., & Batra, D. (2020). Grad-CAM: Visual Explanations from Deep Networks via Gradient-Based Localization. *International Journal of Computer Vision*, 128(2), 336–359.
<https://doi.org/10.1007/s11263-019-01228-7>
- Sheng, L., Su, L., Zhang, H., Li, K., Fang, Y., Ye, W., & Fang, Y. (2019). Numerical investigation on a lithium ion battery thermal management utilizing a serpentine-channel liquid cooling plate exchanger. *International Journal of Heat and Mass Transfer*, 141, 658–668.
<https://doi.org/10.1016/j.ijheatmasstransfer.2019.07.033>
- Slabunov, A. I., & Singh, V. K. (2019). Meso–Neoarchaeon crustal evolution of the Bundelkhand Craton, Indian Shield: New data from greenstone belts. *International Geology Review*, 61(11), 1409–1428.
<https://doi.org/10.1080/00206814.2018.1512906>
- Sohrabi, C., Alsafi, Z., O'Neill, N., Khan, M., Kerwan, A., Al-Jabir, A., Iosifidis, C., & Agha, R. (2020). World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International Journal of Surgery*, 76, 71–76. <https://doi.org/10.1016/j.ijsu.2020.02.034>
- Tongkao-on, W., Yang, C., McCarthy, B. Y., De Silva, W. G. M., Rybchyn, M. S., Gordon-Thomson, C., Dixon, K. M., Halliday, G. M., Reeve, V. E., & Mason, R. S. (2021). Sex Differences in Photoprotective Responses to 1,25-

- Dihydroxyvitamin D3 in Mice Are Modulated by the Estrogen Receptor- β . *International Journal of Molecular Sciences*, 22(4), 1962. <https://doi.org/10.3390/ijms22041962>
- Wang, H., Wang, Z., Wang, L., Sun, L., Liu, W., Li, Q., & Wang, J. (2020). IL-6 promotes collagen-induced arthritis by activating the NLRP3 inflammasome through the cathepsin B/S100A9-mediated pathway. *International Immunopharmacology*, 88, 106985. <https://doi.org/10.1016/j.intimp.2020.106985>
- Xi, N., & Hamari, J. (2019). Does gamification satisfy needs? A study on the relationship between gamification features and intrinsic need satisfaction. *International Journal of Information Management*, 46, 210–221. <https://doi.org/10.1016/j.ijinfomgt.2018.12.002>
- Yang, J., Zheng, Y., Gou, X., Pu, K., Chen, Z., Guo, Q., Ji, R., Wang, H., Wang, Y., & Zhou, Y. (2020). Prevalence of comorbidities and its effects in patients infected with SARS-CoV-2: A systematic review and meta-analysis. *International Journal of Infectious Diseases*, 94, 91–95. <https://doi.org/10.1016/j.ijid.2020.03.017>
- Zhonggen, Y. (2019). A Meta-Analysis of Use of Serious Games in Education over a Decade. *International Journal of Computer Games Technology*, 2019, 1–8. <https://doi.org/10.1155/2019/4797032>
-

Copyright Holder :

© Regina Yoantika Natalie et al. (2024)

First Publication Right :

© Journal International of Lingua and Technology (JILTECH)

This article is under:

