



ICIS2022Penang

<https://fim.uitm.edu.my/index.php/research/conference/342-icis-2022>

5th International Conference on Information Science

Royale Chulan, Penang, Malaysia, 19-21 Sep 2022
Organised by Faculty of Information Management, UiTM, Malaysia



Factors that Contribute to Students' Attrition in Open and Distance Learning (ODL) Environment: A systematic review

Muhammad Abdul Aziz Nur Izzuddin Izham¹, Nora'ayu Ahmad Uzir²,
Nursalsabilla Anuar^{1,2}, Irni Eliana Khairuddin¹

¹ Faculty of Information Management, Universiti Teknologi MARA, Selangor Branch, Malaysia

² Cottrich Marketing Sdn. Bhd. Selangor, Malaysia

2021693244@student.uitm.edu.my, n.uzir@uitm.edu.my, 2021299016@student.uitm.edu.my, irmieliana@uitm.edu.my
Tel: +60126777653

Abstract

This paper presents a systematic literature review of open distance learning (ODL) research that reports empirical findings on the factors that contribute to students' attrition in the ODL setting. Several prior literature reviews identified self-regulated learning as one of the critical factors that may lead to students dropping out. However, there has been much less understanding of the factors and challenges faced by the students in ODL learning and delivery, particularly during the COVID-19 pandemic years. To address this limitation, this study provides a step toward a better understanding of the critical factors contributing to dropout risk, particularly in the ODL environment.

Keywords: Open distance learning; Student attrition; COVID-19.

eISSN: 2398-4287 © 2022. The Authors. Published for AMER ABRA cE-Bs by E-International Publishing House, Ltd., UK. This is an open-access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>). Peer-review under responsibility of AMER (Association of Malaysian Environment-Behavior Researchers), ABRA (Association of Behavioral Researchers on Asians), and cE-Bs (Centre for Environment-Behavior Studies), Faculty of Architecture, Planning & Surveying, Universiti Teknologi MARA, Malaysia.

DOI: <https://doi.org/10.21834/ebpj.v7iS110.4136>

1.0 Introduction

1.1 ODL in higher education

The aim of this study is to identify factor contributing student attrition in Open and distance learning (ODL). This is done through a systematic literature review of past papers relating to student attrition using ODL. Objectively, by identifying these factors, a conceptual framework can be created to better mitigate student attrition. ODL is defined as any formal or informal learning activity through the usage of information and communication technology to decrease distance, physically and mentally. This method provides flexibility for both students and instructors in terms of place and time. Before the COVID-19 Pandemic, ODL was not widely used. When the COVID-19 pandemic hit Malaysia in 2020, the government issued a Movement Control Order (MCO); thus, Higher Education Institutions are required to implement ODL as students are only allowed to study from home.

Currently, in 2022 higher education institutions in Malaysia still use ODL as a primary teaching method for their students in post-pandemic times (Shuhidan, et al., 2021). There's a variety of video conference platforms that are available to support ODL, such as Google Meet, Microsoft Team, Zooms, and Cisco Collaboration Solutions have become common household names among Malaysian students. Online video conferencing is a great tool as students can review past recorded videos for their revision (Jali et al., 2018). This also includes

eISSN: 2398-4287 © 2022. The Authors. Published for AMER ABRA cE-Bs by E-International Publishing House, Ltd., UK. This is an open-access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>). Peer-review under responsibility of AMER (Association of Malaysian Environment-Behavior Researchers), ABRA (Association of Behavioral Researchers on Asians), and cE-Bs (Centre for Environment-Behavior Studies), Faculty of Architecture, Planning & Surveying, Universiti Teknologi MARA, Malaysia.

DOI: <https://doi.org/10.21834/ebpj.v7iS110.4136>

some downsides such as poor connectivity, which can lead to bad audio-video quality, cost of devices, microphones, webcams, laptops, and phones (Saidi et al.,2021).

A survey was given to students to examine students' attitudes toward ODL. If the current mode of study persists, this will provide insight into improving HEIs policymaking significantly (Syahrudin et al., 2021). Shabunina et al. (2021) stated that a high level of knowledge assimilation and preservation of students' emotional well-being through the adoption of modern teaching methods by adding interactive elements into learning courses. HEIs should take note of this finding to improve learning modules for ODL classes.

2.0 Literature Review

Several sources of information were gathered from academic databases in the years between 2010 to 2021 on the topic of ODL. Recent literature shows that in HEIs adapting to the global COVID-19 pandemic which has left no country unaffected (Syahrudin et al.,2021), the adoption of ODL allows the general population to maintain social distancing and stay protected while concurrently continuing their studies amid lockdowns (Qazi et al.,2021) Besides that, there has been no study that evaluates students' adoption of distance learning as an outcome of situational awareness and readiness by trusting information sources related to distance learning. Several implications from this study can provide practitioners and policymakers and future research works in preparing students' awareness and readiness during health emergencies (Qazi et al.,2021) ODL allows students to provide feedback on the current methods and devices used within ODL and explore their emotional well-being while experiencing learning from home.

3.0 Methodology

The process of the systematic review followed in this study is summarized in Figure 1. The review focused on the existing literature published between 2010 and 2021 until the time the search was completed (8th September 2021).

The first step in the systematic review was keyword search. Five main academic databases were selected: ACM Digital Library, IEEE, SCOPUS, Science Direct, and Emerald Insight. A total of 80 papers were obtained by running the query: (("attrition" OR "dropout") AND ("open distance learning" OR "ODL")).

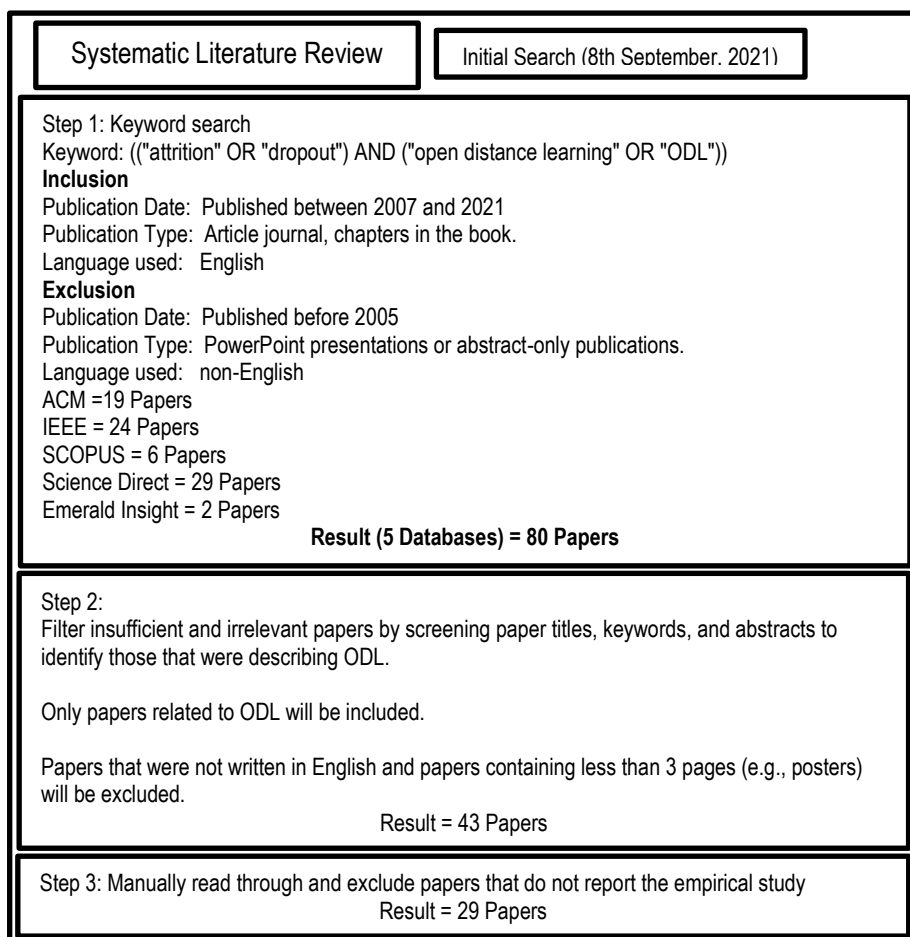


Fig. 1: Methodology used in the systematic literature review

The second step was carried out to filter insufficient and irrelevant papers by screening paper titles, keywords, and abstracts to identify those that were describing Student Dropouts and Attrition, Open and Distance Learning. Only papers on Student Attrition and Open Distance Learning. Papers that were not written in English and papers containing less than three pages (e.g., posters) were excluded. As a result, 43 papers were selected.

Finally, the 43 papers were manually read through and excluded irrelevant papers that did not report any empirical data. Lastly, a total of 29 papers successfully passed all the inclusion criteria and were included in the final analysis.

4.0 Findings & Discussions

4.1 Technological factor

Not all students from HEIs are tech-savvy, older students have expressed technophobia having to adapt to ODL, and these students struggle in attending online classes. Aside from that, some students don't have laptops or computers at home. They expressed dislike for using mobile devices to attend classes due to their small screens, which can affect the students' learning experience (Al-Mawee et al., 2021; Boling et al., 2012; Kusumastuti et al., 2017; Martinez et al., 2020; Phahlane & Kekwaletswe, 2013; Zainuddin et al., 2012).

4.2 Financial factor

When the Movement Control Order (MCO) was implemented, only essential sectors of the economy were permitted to work, leaving many without a source of income. Even with the implementation of ODL, the cost of students' tuition fees did not change. Many dropped out because they could not afford tuition fees. Aside from that, ODL adds the cost of learning, such as web cameras, microphones, and internet subscription costs (Abdullah, 2018; Abimbola et al., 2015; Markova et al., 2017; Tat et al., 2018; Van Der Merwe & Van Heerden, 2013; Zuhairi et al., 2019).

4.3 Environmental factor

When ODL was implemented, the speed of their internet depended on where their homes are located, which means slower internet speeds in rural areas compared to urban areas, this slow/bad connection can affect students' learning process. Students with slow internet could watch the recording after class, but this will limit any questions asked by students. In the case of presentations, this could also affect the student's marks (Al-Harbi, 2011; Kusumastuti et al., 2017; Martinez et al., 2020; Saidi et al., 2021; Son et al., 2020; Van Der Merwe & Van Heerden, 2013; Zainuddin et al., 2012).

4.4 Personal factor

Students could contribute themselves to dropping out. When students first started ODL they were "culture" shocked and lacked preparation for the new learning mode. When students are at home, they are shown to have personal commitments and distractions, this can be caring for a family member, doing housework, and part-time jobs. ODL can reduce the interest in subjects taken by students due to the lack of personal connection between students and instructors. Many students have negative attitudes toward ODL because they prefer face-to-face classes rather than staring at a computer screen (Phahlane & Kekwaletswe, 2013; Tat et al., 2018; Wu, 2020; Zainuddin et al., 2012; Zuhairi et al., 2019).

4.5 Communication factor

When ODL started, all communication turned to either through the internet via discussion forums, online video conferences, or mobile devices. Students reported that there was a lack of interaction through an online discussion forum. Aside from that, lack of instructor availability is also a problem during ODL, where instructors are difficult to reach when students' have a question during off-class hours. During an online class, instructors have difficulty reading students' responses to a question for the reason of students' reluctance to turn on their webcams (Abdullah, 2018; Abimbola et al., 2015; Al-Mawee et al., 2021; Boling et al., 2012; Markova et al., 2017; Sowan & Jenkins, 2013; Van Cappelle et al., 2021).

4.6 Emotional Factor

When everyone is home, it causes a lack of connection with peers, all interactions in class are now replaced with a screen or text messages. This can create a sense of isolation when learning or doing group assignments. ODL can be difficult for instructors as well, emotional connection is important during a class. Instructors cannot engage the class if they cannot see students' faces to gauge a response to a question (Abimbola et al., 2015; Markova et al., 2017; Shabunina et al., 2021).

4.7 Self-regulation factor

Studies have shown students can have some negative habits when they are at home. Low self-organization is a problem for a student, they tend to not study on their initiative. This is because of the reliance on instructors' guidance during face-to-face classes. One of the main problems of ODL is the difficulty of absorbing lessons during online class due to a variety of distractions, this includes; playing on phones and doing something else on the computer aside from focusing on what is being taught in class. Students cannot rely on instructors alone but must self-regulate themselves to learn. (Al-Harbi, 2011; Markova et al., 2017; Shabunina et al., 2021; Son et al., 2020; Tat et al., 2018; Van Cappelle et al., 2021; Wu, 2020; Zainuddin et al., 2012).

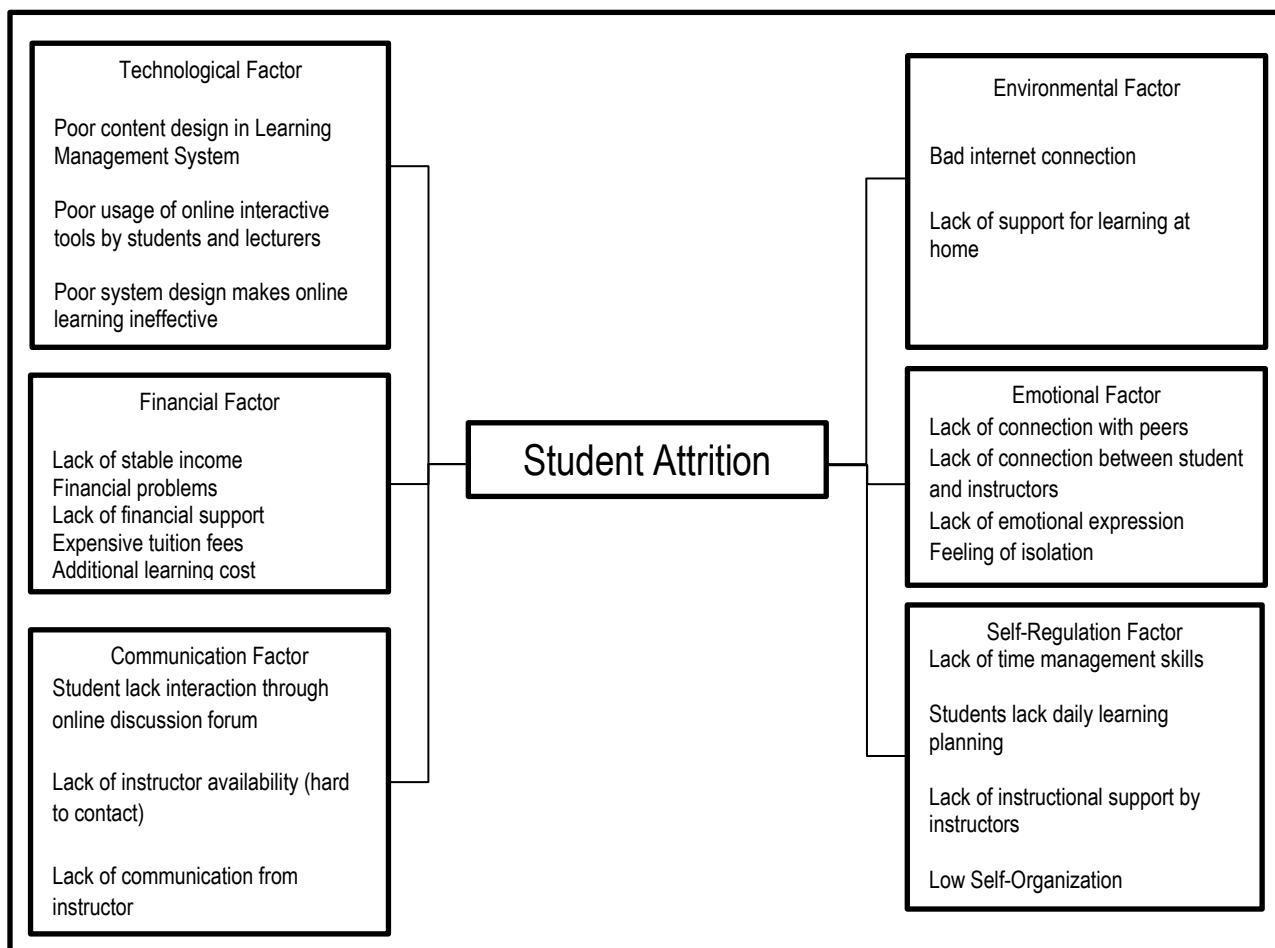


Fig. 2: Conceptual framework of factors contributing to student attrition

From the systematic literature review, a new conceptual framework as shown in Fig. 2 was developed to show the consolidated factors that can lead to student attrition. Arguably the most important factor of ODL is the student's self-regulation of studies this is because not all students can study on their own and require guidance from lecturers in face-to-face classes. Next, relating to communication factors lecturers/instructors also play an important role in maintaining the flow of information during and off classroom hours during ODL, because ODL impedes students from meeting lecturer/instructors physically after class if they have further questions. Finally, environmental factor, for ODL to operate smoothly, an internet connection is critical for both parties mentioned previously. Poor internet connection could disrupt the learning process, test-taking, and assignment submissions.

Table 1. Papers in SLR

Title of Paper	Theme of Research	Year of Study	Country of Origin
Transitioning From Face-to-Face to Blended and Full Online Learning Engineering Master's Program	Learning and organization changes experienced during the implementation of an online group.	2017	Spain
Assessing the Impact of Open and Distance Learning (ODL) in Enhancing the Status of Women in Lagos State	Challenges faced by women in the ODL programme	2015	Nigeria
Quality Issues of Online Distance Learning	Challenges while learning at a distance	2016	Russia
Supporting students to succeed in open and distance learning in the Open University of Sri Lanka and Universitas Terbuka Indonesia	Major challenges for open universities	2019	Indonesia
Student persistence in open and distance learning: success factors and challenges	Success factors and challenges for students studying in an open and distance learning (ODL) mode and strategies for student persistence.	2018	Hong Kong
Ease of use and usefulness of webinars in an open distance learning environment: an activity theory perspective	Webinar as a collaborative tool in an Open Distance Learning environment	2013	South Africa

An Analysis of the Effectiveness of Emergency Distance Learning under COVID-19	Thorough and well-prepared preparation for a distance learning program is challenging to achieve in a pandemic setting.	2020	Vietnam
The Role of Mobile Devices to Improve Student Learning Motivation on Distance Learning	Students learning motivation by using mobile devices	2017	Indonesia
Exploring Malay Student's Commitment to Online Learning - A Case of Business Management Students	E-Learning advantages and disadvantages	2020	Malaysia
Emotional Resilience of Students in the Context of Distance Learning	Psychological and pedagogical conditions of the educational environment that contribute to the formation and development of emotional resilience of students in emergency online learning	2021	Russia
MBTI personality type and other factors that relate to preference for online versus face-to-face instruction	How to create a better online classroom environment	2009	USA
Contextualised framework for an inclusive learning management system in an open and distance learning environment	Difficulties in teaching undergraduate	2013	South Africa
Exploration of English Teaching Methods Based on Computer Corpus in Distance and Open Education Environment	The use of interactive activities in English teaching in the distance and open education	2020	China
An Approach to Integrate Skills Development in Open Distance Learning (ODL) Environment: Part 2	Barriers to learning that were experienced with traditional distance education	2013	South Africa
Open-distance electronic learning environments: Supervisors' views on usability	Proposing usability guidelines specifically focused on the requirements for a learning management system.	2019	South Africa
An Integrated Best Practices Framework for Online Teaching, Research, and Community Engagement within an Open Distance Learning (ODL) context	Designing an integrated online teaching framework for the university	2017	South Africa
Evaluating Students' Preferences for Open and Distance Learning (ODL) Tools	Shifting from face-to-face to an online mode of teaching. Open and Distance Learning	2020	Malaysia
Use of online interactive tools in an open distance learning context: Health studies students' perspective	Determine how the discussion forum as an online interactive tool be used in an ODL institution	2012	South Africa
Adaption of distance learning to continue the academic year amid COVID-19 lockdown.	The use of distance learning in saving students' academic year amid COVID-19 lockdown	2021	Brunei Darussalam
Students' acceptance to distance learning during COVID -19: the role of geographical areas among Indonesian sports science students	The perspectives of sports science students on factors affecting distance learning in the setting of Indonesian higher education institutions (HEIs)	2021	Indonesia
Student's perspective on distance learning during COVID-19 pandemic: A case study of Western Michigan University, United States	Revealing students' perspectives and preferences on distance learning due to the dramatic change that happened in the education process.	2020	USA
An analysis of the reach and effectiveness of distance learning in India during school closures due to COVID-19	Measure the impact of responses to continuity of learning both to ensure more effective responses in the event of further disruptions	2020	India
The student experience of a collaborative e-learning university module	To present a picture of the student experience of a collaborative e-learning	2010	Italy

e-Learning in the Saudi tertiary education: Potential and challenges	module in an asynchronous e-learning environment.	2008	Saudi Arabia
Procrastination, participation, and performance in online learning environments	Factors that influence e-learning in Saudi higher education through analyzing the perceptions and attitudes of Saudi university students	2010	Saudi Arabia
Cutting the distance in distance education: Perspectives on what promotes positive, online learning experiences	Specific learner characteristics in the management of time	2011	USA
Designing, delivering, and evaluating a distance learning nursing course responsive to students' needs.	Effective online learning environments by exploring, from both teacher and student perspectives	2010	USA
Attitude and Approaches of Faculty Members Regarding Formal Education and Distance Learning Programs	Effective instructional strategies	2013	Turkey
From participation to dropout: Quantitative participation patterns in online university courses	Attitudes of faculty members teaching online classes	2009	Germany
	Types of online learners with different support needs		

5.0 Conclusion & Recommendations

Open and distance learning in the meantime is here to stay, it's important to prepare students for future events that require ODL as the primary mode of study. The field of online learning needs to be explored and expanded so that HEIs can reduce student attrition, teachers/lecturers can teach efficiently without requiring a classroom thus the student receive the same quality of education as were in their classes on campus.

It is recommended that the conceptual framework is used to in a case study to test its validity on current student studying in ODL, with this a concrete framework can be created in helping HEIs in mitigating student attrition. The limitations of this study are:

- Non-digital papers or books are not included in this SLR that may provide information and data on the topic of ODL.
- This SLR only include papers from the year 2005-2022.

Acknowledgment

This study was supported by the Universiti Teknologi MARA, Selangor Branch through a grant namely Geran Insentif Penyelidikan (GIP) (reference no. 600-RMC/GIP 5/3 (112/2021)). The authors would like to express their gratitude to all relevant parties.

Paper Contribution to Related Field of Study

This paper contributes to the field of library and information management.

References

- Abdullah, H. (2018). An integrated best practices framework for online teaching, research, and community engagement within an Open Distance Learning (ODL) context. *Proceedings - 5th IEEE International Conference on MOOCs, Innovation and Technology in Education, MITE 2017*, 57–62. <https://doi.org/10.1109/MITE.2017.00016>
- Abimbola, A. E., Omolara, W.-O. O., & Fatimah, Y. T. (2015). Assessing the Impact of Open and Distance Learning (odl) in Enhancing the Status of Women in Lagos State. *Procedia - Social and Behavioral Sciences*, 174, 1512–1520. <https://doi.org/10.1016/J.SBSPRO.2015.01.782>
- Al-Harbi, K. A. S. (2011). e-Learning in the Saudi tertiary education: Potential and challenges. *Applied Computing and Informatics*, 9(1), 31–46. <https://doi.org/10.1016/J.ACI.2010.03.002>
- Al-Mawee, W., Kwayu, K. M., & Gharaibeh, T. (2021). Student's perspective on distance learning during COVID-19 pandemic: A case study of Western Michigan University, United States. *International Journal of Educational Research Open*, 2, 100080. <https://doi.org/10.1016/J.IJEDRO.2021.100080>
- Biasutti, M. (2011). The student experience of a collaborative e-learning university module. *Computers & Education*, 57(3), 1865–1875. <https://doi.org/10.1016/J.COMPEDU.2011.04.006>
- Boling, E. C., Hough, M., Krinsky, H., Saleem, H., & Stevens, M. (2012). Cutting the distance in distance education: Perspectives on what promotes positive, online learning experiences. *Internet and Higher Education*, 15(2), 118–126. <https://doi.org/10.1016/j.iheduc.2011.11.006>
- Hlalele, T. S., Mothibeli, P. M., & Sumbanyambe, S. (2019). An Approach to Integrate Skills Development in Open Distance Learning (ODL) Environment: Part 2. *IEEE International Conference on Industrial Engineering and Engineering Management, 2019-December*, 321–325. <https://doi.org/10.1109/IEEM.2018.8607702>

- Jali, J. M., & Ajis, A. F. M. (2018, April). VLE in Malaysia's Public University: Instructors VS administrators eMM outlook. In 2018 IEEE Symposium on Computer Applications & Industrial Electronics (ISCAIE) (pp. 367-371). IEEE.
- Karaduman, M., & Mencet, M. S. (2013). Attitude and Approaches of Faculty Members Regarding Formal Education and Distance Learning Programs. *Procedia - Social and Behavioral Sciences*, 106, 523–532. <https://doi.org/10.1016/J.SBSPRO.2013.12.059>
- Kusumastuti, D. L., Tjhin, V. U., & Soraya, K. (2017). The role of mobile devices to improve student learning motivation in distance learning. *ACM International Conference Proceeding Series*, 325–329. <https://doi.org/10.1145/3176653.3176729>
- Lehong, S., van Biljon, J., & Sanders, I. (2019). Open-distance electronic learning environments: Supervisors' views on usability. 2019 Conference on Information Communications Technology and Society, ICTAS 2019. <https://doi.org/10.1109/ICTAS.2019.8703605>
- Maboe, K. A. (2017). Use of online interactive tools in an open distance learning context: Health studies students' perspective*. *Health SA Gesondheid*, 22. <https://doi.org/10.4102/HSAG.V22I0.1003>
- Markova, T., Glazkova, I., & Zaborova, E. (2017). Quality Issues of Online Distance Learning. *Procedia - Social and Behavioral Sciences*, 237, 685–691. <https://doi.org/10.1016/J.SBSPRO.2017.02.043>
- Martinez, P. J., Aguilar, F. J., & Ortiz, M. (2020). Transitioning from Face-to-Face to Blended and Full Online Learning Engineering Master's Program. *IEEE Transactions on Education*, 63(1), 2–9. <https://doi.org/10.1109/TE.2019.2925320>
- Michinov, N., Brunot, S., le Bohec, O., Juhel, J., & Delaval, M. (2011). Procrastination, participation, and performance in online learning environments. *Computers and Education*, 56(1), 243–252. <https://doi.org/10.1016/j.compedu.2010.07.025>
- Nistor, N., & Neubauer, K. (2010). From participation to dropout: Quantitative participation patterns in online university courses. *Computers and Education*, 55(2), 663–672. <https://doi.org/10.1016/j.compedu.2010.02.026>
- Phahlane, M. M., & Kekwaletswe, R. M. (2013). Contextualised framework for an inclusive learning management system in an open and distance learning environment. 2013 Pan African International Conference on Information Science, Computing and Telecommunications, PACT 2013, 34–38. <https://doi.org/10.1109/SCAT.2013.7055086>
- Qazi, A., Qazi, J., Naseer, K., Zeeshan, M., Qazi, S., Abayomi-Ali, O., Said Ahmad, I., Darwich, M., Ali Talpur, B., Hardaker, G., Naseem, U., Yang, S., & Haruna, K. (2021). Adaption of distance learning to continue the academic year amid COVID-19 lockdown. *Children and Youth Services Review*, 126, 106038. <https://doi.org/10.1016/J.CHILDYOUTH.2021.106038>
- Saidi, R. M., Sharip, A. A., Abd Rahim, N. Z., Zulkifli, Z. A., & Md Zain, S. M. (2021). Evaluating Students' Preferences of Open and Distance Learning (ODL) Tools. *Procedia Computer Science*, 179, 955–961. <https://doi.org/10.1016/J.PROCS.2021.01.085>
- Shabunina, A., Shakhova, V., & Sorokina, L. (2021). Emotional Resilience of Students in the Context of Distance Learning; Emotional Resilience of Students in the Context of Distance Learning. 2021 5th International Conference on Education and Multimedia Technology (ICEMT). <https://doi.org/10.1145/3481056>
- Shuhidan, S. M., Hashim, H., Abd Hakim, A. A., Shuhidan, S. M., & Mannan, E. F. (2021, December). COVID-19: Digital Literacy and Heutagogy Learning Approach in the ODL Environment. In 4th International Conference on Language, Literature, and Education (ICLLE-4 2021) (pp. 250-256). Atlantis Press.
- Son, N. T., Anh, B. N., Tuan, K. Q., Son, N. B., Son, N. H., & Jaafar, J. (2020). An Analysis of the Effectiveness of Emergency Distance Learning under COVID-19. *ACM International Conference Proceeding Series*, 136–143. <https://doi.org/10.1145/3437802.3437826>
- Sowan, A. K., & Jenkins, L. S. (2013). Designing, delivering and evaluating a distance learning nursing course responsive to students' needs. *International Journal of Medical Informatics*, 82(6), 553–564. <https://doi.org/10.1016/j.ijmedinf.2013.02.004>
- Syahrudin, S., Yaakob, M. F. M., Rasyad, A., Widodo, A. W., Sukendro, S., Suwardi, S., Lani, A., Sari, L. P., Mansur, M., Razali, R., & Syam, A. (2021). Students' acceptance to distance learning during COVID-19: the role of geographical areas among Indonesian sports science students. *Heliyon*, 7(9). <https://doi.org/10.1016/J.HELIVON.2021.E08043>
- Tat, O., Au, S., Li, K., & Wong, T. M. (2018). Student persistence in open and distance learning: success factors and challenges. *Asian Association of Open Universities Journal*, 13(2), 191–202. <https://doi.org/10.1108/AAOUJ-12-2018-0030>
- Van Cappelle, F., Chopra, V., Ackers, J., & Gochyyev, P. (2021). An analysis of the reach and effectiveness of distance learning in India during school closures due to COVID-19. *International Journal of Educational Development*, 85, 102439. <https://doi.org/10.1016/J.IJEDUDEV.2021.102439>
- Van Der Merwe, T. M., & van Heerden, M. E. (2013). Ease of use and usefulness of webinars in an open distance learning environment: An activity theory perspective. *ACM International Conference Proceeding Series*, 262–270. <https://doi.org/10.1145/2513456.2513481>
- Wu, D. (2020). Exploration of English Teaching Methods Based on Computer Corpus in Distance and Open Education Environment. 2020 International Conference on Computers, Information Processing and Advanced Education (CIPAE), 10–13. <https://doi.org/10.1109/CIPAE51077.2020.00011>
- Zainuddin, A., Kamaluddin, N., & Hassan, Z. (2012). Exploring Malay Student's Commitment in Online Learning - A Case of Business Management Students. *Procedia - Social and Behavioral Sciences*, 67, 81–92. <https://doi.org/10.1016/J.SBSPRO.2012.11.309>
- Zuhairi, A., Karthikeyan, N., & Priyadarshana, S. T. (2019). Supporting students to succeed in open and distance learning in the Open University of Sri Lanka and Universitas Terbuka Indonesia. *Asian Association of Open Universities Journal*, 15(1), 13–35. <https://doi.org/10.1108/aaouj-09-2019-0038>