



Documents

Arandas, M.F.^a, Salman, A.^b, Idid, S.A.^c, Loh, Y.L.^d, Nazir, S.^a, Ker, Y.L.^a

The influence of online distance learning and digital skills on digital literacy among university students post Covid-19

(2024) *Journal of Media Literacy Education*, 16 (1), pp. 79-93.

DOI: 10.23860/JMLE-2024-16-1-6

^a Southern University College, Malaysia

^b Universiti Malaysia Kelantan, Malaysia

^c International Islamic University Malaysia, Malaysia

^d Universiti Pendidikan Sultan Idris, Malaysia

Abstract

Online distance learning policies were formulated and implemented among some Malaysian universities long ago, but their value emerged since COVID-19. Emanating from the diffusion of innovation theory, this study examined the perception of higher education students on the influence and relationship between six independent variables (compatibility, observability, relative advantage, complexity, trialability, and digital skills) and one dependent variable (digital literacy). A total of 524 respondents were sampled, comprising students from six public and private Malaysian universities. The findings from the correlation analysis show a significant positive relationship between the six independent variables and the dependent variable. Meanwhile, in the regression analysis, three of the independent variables (observability, trialability, and digital skill) have a significant and positive effect on digital literacy. This study placed the diffusion of innovation in a specific context that supports designing online distance learning and digital literacy policies. © 2024 Author(s).

Author Keywords

characteristic of innovation; digital literacy; digital skills; online distance learning; university students

Funding details

SUCRF/C1-2021/FHSS-08

Funding details

This research received funding from Southern University College under the Open Distance Learning and Digital Literacy research project, number SUCRF/C1-2021/FHSS-08.

References

- Adedoyin, O. B., Soykan, E.
Covid-19 pandemic and online learning: the challenges and opportunities
(2023) *Interactive learning environments*, 31 (2), pp. 863-875.
- Abdelmola, A. O., Makeen, A., Makki, H.
E-learning during COVID-19 pandemic, faculty Perceptions, challenges, and recommendations
(2021) *MedEdPublish*, 10, pp. 1-15.
- Al-Arimi, A. M. A. K.
Distance learning
(2014) *Procedia-Social and Behavioral Sciences*, 152, pp. 82-88.
- Ali, W.
Online and remote learning in higher education institutes: A necessity in light of COVID-19 pandemic
(2020) *Higher education studies*, 10 (3), pp. 16-25.

- Allam, S. N. S., Hassan, M. S., Mohideen, R. S., Ramlan, A. F., Kamal, R. M.
Online distance learning readiness during Covid-19 outbreak among undergraduate students
(2020) *International Journal of Academic Research in Business and Social Sciences*, 10 (5), pp. 642-657.
- Amir, L. R., Tanti, I., Maharani, D. A., Wimardhani, Y. S., Julia, V., Sulijaya, B., Puspitawati, R.
Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia
(2020) *BMC medical education*, 20 (1), pp. 1-8.
- Aperribai, L., Cortabarria, L., Aguirre, T., Verche, E., Borges, Á.
Teacher's physical activity and mental health during lockdown due to the COVID-2019 pandemic
(2020) *Frontiers in Psychology*, 11, pp. 1-14.
- Arandas, M. F., Ling, L. Y., Sannusi, S. N.
Exploring the needs and expectations of international students towards the national university of Malaysia (UKM)
(2019) *Jurnal Personalia Pelajar*, 22 (2), pp. 137-144.
- Arandas, M. F., Loh, Y. L., Chiang, L. Y.
Media Credibility, Misinformation, and Communication Patterns during MCO of COVID-19 in Malaysia
(2021) *International Online Journal of Language, Communication, and Humanities*, 4 (2), pp. 26-40.
- Atkinson, N. L.
Developing a questionnaire to measure perceived attributes of eHealth innovations
(2007) *American journal of health behavior*, 31 (6), pp. 612-621.
- Ayub, S. H., Omar, N. H., Raja, R. P. N., Murad, Khairudin, Saabar, S. S., Faizal, S.
Perceptions and engagement of Klang Valley urbanites on COVID-19 PSAs during the pandemic
(2022) *SEARCH Journal of Media and Communication Research*, 14 (3), pp. 75-89.
- Baran, S. J., Davis, D. K.
(2015) *Mass communication theory: Foundations, ferment, and future*, Cengage Learning
- Beaunoyer, E., Dupéré, S., Guitton, M. J.
COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies
(2020) *Computers in human behavior*, 111, p. 106424.
- Beilmann, M., Opermann, S., Kalmus, V., Vissenberg, J., Pedaste, M.
The role of school-home communication in supporting the development of children's and adolescents' digital skills, and the changes brought by COVID-19
(2023) *Journal of Media Literacy Education*, 15 (1), pp. 1-13.
- Benson, V., Kolsaker, A.
Instructor Approaches to Blended Management Learning: A Tale of Two Business Schools
(2015) *International Journal of Management Education*, 13 (3), pp. 316-325.

- Boyd, D.
(2014) *It's complicated: The social lives of networked teens*,
London: Yale University Press
- Cetindamar, D., Abedin, B., Shirahada, K.
The role of employees in digital transformation: a preliminary study on how employees' digital literacy impacts use of digital technologies
(2021) *IEEE Transactions on Engineering Management*, pp. 1-12.
- Chetty, K., Qigui, L., Gcora, N., Josie, J., Wenwei, L., Fang, C.
Bridging the digital divide: measuring digital literacy
(2018) *Economics*, 12 (1), pp. 1-17.
- Cirus, L., Simonova, I.
Pupils' digital literacy reflected in teachers' attitudes towards ICT: Case study of the Czech Republic
(2021) *SN Computer Science*, 2 (3), p. 231.
- Coccooli, M., Guercio, A., Maresca, P., Stanganelli., L.
Smarter Universities: A Vision for the Fast Changing Digital Era
(2014) *Journal of Visual Languages and Computing*, 25, pp. 1003-1011.
- Coman, C., Tîru, L. G., Meseşan-Schmitz, L., Stanciu, C., Bularca, M. C.
Online teaching and learning in higher education during the coronavirus pandemic: Students' perspective
(2020) *Sustainability*, 12 (24), p. 10367.
- Cortoni, I., Lo Presti, V., Cervelli, P.
Digital Competence Assessment. A Proposal for Operationalizing the Critical Dimension
(2015) *Journal of Media Literacy Education*, 7 (1), pp. 46-57.
- Cote, T., Milliner, B.
A survey of EFL teachers' digital literacy: A report from a Japanese university
(2018) *Teaching English with Technology*, 18 (4), pp. 71-89.
- Davis, F. D.
Perceived usefulness, perceived ease of use, and user acceptance of information technology
(1989) *MIS quarterly*, 13 (3), pp. 319-340.
- Dhawan, S.
Online learning: A panacea in the time of COVID-19 crisis
(2020) *Journal of educational technology systems*, 49 (1), pp. 5-22.
- Di Pietro, G., Biagi, F., Costa, P., Karpiński, Z., Mazza, J.
(2020) *The likely impact of COVID-19 on education: Reflections based on the existing literature and international datasets*,
- Dreesen, T., Akseer, S., Brossard, M., Dewan, P., Giraldo, J. P., Kamei, A., Ortiz, J. S.
(2020) *Promising Practices for Equitable Remote Learning Emerging Lessons from COVID-19 Education Responses in 127 Countries*,
UNICEF Office of Research
- Dzakiria, H., M Idrus, R., Atan, H.
Interaction in open distance learning: Research issues in Malaysia

- (2005) *Malaysian Journal of Distance Education*, 7 (2), pp. 63-77.
- Elhajjar, S., Ouaida, F.
An analysis of factors affecting mobile banking adoption
(2020) *International Journal of Bank Marketing*, 38 (2), pp. 352-367.
 - Estelami, H., Bezzzone, A.
The Post-Pandemic Effects of Distance Education on Business Students: A Review of Expert Reports
(2022) *World Journal of Education*, 12 (1), pp. 34-44.
 - Genlott, A. A., Grönlund, Å., Viberg, O.
Disseminating digital innovation in school-leading second-order educational change
(2019) *Education and Information Technologies*, 24, pp. 3021-3039.
 - Gopal, R., Singh, V., Aggarwal, A.
Impact of online classes on the satisfaction and performance of students during the pandemic period of COVID 19
(2021) *Education and Information Technologies*, 26 (6), pp. 6923-6947.
 - Gunter, G. A., Braga, J. D. C. F.
Connecting, swiping, and integrating: mobile apps affordances and innovation adoption in teacher education and practice
(2018) *Educação em Revista*, 34, pp. 1-22.
 - Gracia, T. J. H., Avila, D. D., Gracia, J. F. H.
The Phubbing: The interference in communication within the classroom
(2020) *Journal of Administrative Science*, 2 (3), pp. 12-17.
 - Hamid, A., Setyosari, P., Saida, U. L. F. A., Kuswandi, D.
The implementation of mobile seamless learning strategy in mastering students' concepts for elementary school
(2019) *Journal for the Education of Gifted Young Scientists*, 7 (4), pp. 967-982.
 - Jamilah, J., Fahyuni, E. F.
The Future of Online Learning in the Post-COVID-19 Era
(2022) *International Conference on Intellectuals' Global Responsibility*, pp. 497-505.
Sidoarjo: KnE Social Sciences
 - Jimoh, M.
An appraisal of the open and distance learning programme in Nigeria
(2013) *Journal of Education and Practice*, 4 (3), pp. 1-8.
 - Juurakko-Paavola, T., Rontu, H., Nelson, M.
Language teacher perceptions and practices of digital literacy in Finnish higher education
(2018) *AFinLAn vuosikirja*, 76, pp. 41-60.
 - Kamal, A. A., Shaipullah, N. M., Truna, L., Sabri, M., Junaini, S. N.
Transitioning to online learning during COVID-19 Pandemic: Case study of a Pre-University Centre in Malaysia
(2020) *International Journal of Advanced Computer Science and Applications*, 11 (6), pp. 217-223.

- Karpati, A.
(2011) *Digital literacy in education*, UNESCO
- Koltay, T.
The media and the literacies: Media literacy, information literacy, digital literacy
(2011) *Media, culture & society*, 33 (2), pp. 211-221.
- Khalil, R., Mansour, A. E., Fadda, W. A., Almisnid, K., Aldamegh, M., Al-Nafeesah, A., Al-Wutayd, O.
The sudden transition to synchronized online learning during the COVID-19 pandemic in Saudi Arabia: a qualitative study exploring medical students' perspectives
(2020) *BMC medical education*, 20, pp. 1-10.
- Li, C., Lalani, F.
The rise of online learning during the COVID-19 pandemic
(2020) *World Economic Forum*,
- Littlejohn, A., Beetham, H., McGill, L.
Learning at the digital frontier: A review of digital literacies in theory and practice
(2012) *Journal of computer assisted learning*, 28 (6), pp. 547-556.
- Lockee, B. B.
Online education in the post-COVID era
(2021) *Nature Electronics*, 4 (1), pp. 5-6.
- Mariana, P., Evgueni, K.
(2002) *Open and distance learning: trends, policy and strategy considerations*, UNESCO
- Matyunina, M. V.
Diffusion of innovation in the digital economy. IV All-Russian scientific and practical conference with international participation
(2019) *Information Systems and Technologies in Modeling and Control" (ISTMC2019)*, pp. 26-32.
Association for Computing Machinery
- Maunonen-Eskelinen, I.
Open and distance learning as a training model and an educational method
(2015) *Open and distance learning: Developing learning opportunities in the teacher education in Nepal*, pp. 11-20.
Maunonen-Eskelinen, I., & Leppänen, T (eds), Jyväskylä: JAMK University of Applied Sciences
- McCann, A. L.
(2007) *The identification of factors influencing the diffusion of an assessment innovation on a university campus*,
(Doctoral dissertation). the University of Nebraska-Lincoln
- Mihailidis, P., Hobbs, R., McDougall, J., Berger, R.
Building a Global Community for Media Education Research
(2015) *Journal of Media Literacy Education*, 7 (1), pp. 1-3.
- Mihailidis, P., Ramasubramanian, S., Tully, M., Foster, B., Riewestahl, E., Johnson, P., Angove, S.

- Mukhtar, K., Javed, K., Arooj, M., Sethi, A.
Do media literacies approach equity and justice
(2021) *Journal of Media Literacy Education*, 13 (2), pp. 1-14.
- Musingafi, M. C., Mapuranga, B., Chiwanza, K., Zebron, S.
Advantages, Limitations and Recommendations for online learning during COVID-19 pandemic era
(2020) *Pakistan journal of medical sciences*, 36, pp. 1-5.
(COVID19-S4)
- Muthuprasad, T., Aiswarya, S., Aditya, K. S., Jha, G. K.
Challenges for open and distance learning (ODL) students: Experiences from students of the Zimbabwe Open University
(2015) *Journal of Education and Practice*, 6 (18), pp. 59-66.
- Nazir, T.
Impact of classroom phubbing on teachers who face phubbing during lectures
(2020) *Psychology Research on Education and Social Sciences*, 1 (1), pp. 41-47.
- Notley, T., Dezuanni, M.
Advancing children's news media literacy: learning from the practices and experiences of young Australians
(2019) *Media, Culture & Society*, 41 (5), pp. 689-707.
- Ntemana, T. J., Olatokun, W.
Human Technology
(2012) *An Interdisciplinary Journal on Humans in ICT Environments*, 8 (2), pp. 179-197.
- Ollerenshaw, A., Corbett, J., Thompson, H.
Increasing the digital literacy skills of regional SMEs through high-speed broadband access
(2021) *Small Enterprise Research*, 28 (2), pp. 115-133.
- Pal, D., Vanijja, V., Patra, S.
Online learning during COVID-19: Students' perception of multimedia quality
(2020) *11th International Conference on Advances in Information Technology*, pp. 1-6.
Bangkok: Association for Computing Machinery
- Pal, D., Patra, S.
University students' perception of video-based learning in times of COVID-19: A TAM/TTF perspective
(2021) *International Journal of Human–Computer Interaction*, 37 (10), pp. 903-921.
- Peicheva, D., Milenkova, V.
Knowledge society and digital media literacy: foundations for social inclusion and realization in Bulgarian context
(2017) *Calitatea Vietii*, 28 (1), pp. 50-74.
- Pinho, C., Franco, M., Mendes, L.
Application of innovation diffusion theory to the E-learning process: higher

education context

(2021) *Education and Information Technologies*, 26, pp. 421-440.

- Prasetyanto, D., Rizki, M., Sunitiyoso, Y.

Online learning participation intention after COVID-19 pandemic in Indonesia: Do students still make trips for online class?

(2022) *Sustainability*, 14 (4), p. 1982.

- Qolamani, K.

Effectiveness of Online Teaching & Learning during Covid-19 Pandemic-Social Studies Students' Perspective

(2022) *Humanities Journal of University of Zakho*, 10 (3), pp. 856-862.

- Raman, R., Vachhrajani, H., Shivedas, A., Nedungadi, P.

Low cost tablets as disruptive educational innovation: modeling its diffusion within Indian K12 system

(2014) *IEEE Innovations in Technology Conference*, pp. 1-5.

Institute of Electrical and Electronics Engineers

- Redecker, C.

(2017) *European Framework for the Digital Competence of Educators: DigCompEdu*, Joint Research Centre

- Richardson, J. W.

Challenges of adopting the use of technology in less developed countries: The case of Cambodia

(2011) *Comparative Education Review*, 55 (1), pp. 008-029.

- Rogers, E. M.

(1983) *Diffusion of innovations*, Free Press

- Rogers, E. M., Singhal, A., Quinlan, M. M.

Diffusion of innovations

(2009) *An integrated approach to communication theory and research*, pp. 418-432.

Stacks, D., & Salwen, M. (Eds). Routledge

- Salim, N., Chan, W. H., Mansor, S., Bazin, N. E. N., Amaran, S., Faudzi, A. A. M., Shithil, S. M.

COVID-19 epidemic in Malaysia: Impact of lockdown on infection dynamics

(2020) *Medrxiv*, pp. 1-27.

- Salman, A.

Media dependency, interpersonal communication and panic during the COVID-19 Movement Control Order

(2021) *SEARCH Journal of Media and Communication Research*, 13 (1), pp. 79-91.

- Samat, M. F., Awang, N. A., Hussin, S. N. A., Nawi, F. A. M.

Online Distance Learning amidst COVID-19 Pandemic among University Students: A Practicality of Partial Least Squares Structural Equation Modelling Approach

(2020) *Asian Journal of University Education*, 16 (3), pp. 220-233.

- Santos, R., Azevedo, J., Pedro, L.

Digital divide in higher education students' digital literacy

(2013) *European Conference on Information Literacy, ECIL 2013*, pp. 178-183.

Springer International Publishing

- Saykili, A.
Distance education: Definitions, generations and key concepts and future directions
(2018) *International Journal of Contemporary Educational Research*, 5 (1), pp. 2-17.
- Snoussi, T., Radwan, A. F.
Distance E-learning (DEL) and communication studies during covid-19 pandemic
(2020) *Utopia y Praxis Latinoamericana*, 25 (10), pp. 253-270.
- Toland, S.
(2022) *A Mixed-Method Study on the Online Learner Readiness Questionnaire Instrument at a Midwest University*,
(Doctoral dissertation). Education Resources Information center (ERIC)
- (2020) *Impact and Implications of the COVID 19-Crisis on Educational Systems and Households*,
- Traxler, J.
Distance learning - Predictions and possibilities
(2018) *Education Sciences*, 8 (1), p. 35.
- (2020) *Policy Brief: Education during COVID-19 and beyond*,
- Vodă, A. I., Cautisanu, C., Grădinaru, C., Tănăsescu, C., de Moraes, G. H. S. M.
Exploring digital literacy skills in social sciences and humanities students
(2022) *Sustainability*, 14 (5), p. 2483.
- Wiradharma, G.
Google classroom or moodle?: University student satisfaction in distance learning communication during covid-19 pandemic
(2020) *Jurnal komunikasi dan bisnis*, 8 (2), pp. 85-99.
- Wuyckens, G., Landry, N., Fastrez, P.
Untangling media literacy, information literacy, and digital literacy: A systematic meta-review of core concepts in media education
(2022) *Journal of Media Literacy Education*, 14 (1), pp. 168-182.
- Yates, BL.
(2001) *Adoption of media literacy programs in schools*,
International Communication Association
- Yashashwini, A.
Students attitude towards online learning
(2021) *International Journal of Management and Social Science Research Review*, 8 (1), pp. 32-40.
- Yu, B., Ndumu, A., Mon, L. M., Fan, Z.
E-inclusion or digital divide: an integrated model of digital inequality
(2018) *Journal of Documentation*, 74 (3), pp. 552-574.
- Zhang, L., Wen, H., Li, D., Fu, Z., Cui, S.
E-learning adoption intention and its key influence factors based on innovation adoption theory
(2010) *Mathematical and Computer Modelling*, 51 (11-12), pp. 1428-1432.

Correspondence Address

Arandas M.F.; Southern University CollegeMalaysia; email: arandas@sc.edu.my

Publisher: National Association for Media Literacy Education

ISSN: 21678715

Language of Original Document: English

Abbreviated Source Title: J. Media. Lit. Education

2-s2.0-85191962437

Document Type: Article

Publication Stage: Final

Source: Scopus

ELSEVIER

Copyright © 2024 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

 RELX Group™