PAPER • OPEN ACCESS

Online learning readiness during the Covid-19 pandemic

View the article online for updates and enhancements.
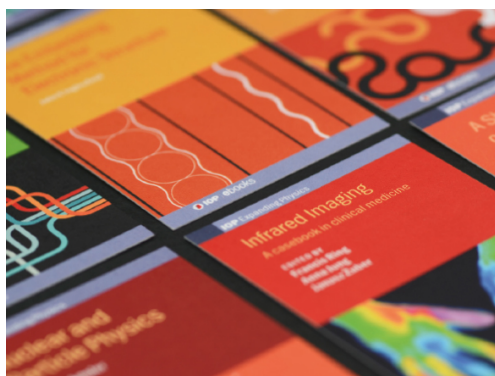
Online learning readiness during the Covid-19 pandemic

SFA Widodo, YE Wibowo, W Wagiran

Department of Mechanical Engineering Education, Universitas Negeri Yogyakarta, Indonesia

Email: syukri@uny.ac.id

Abstract. Online learning is one of the main alternatives to learning during the Covid-19 pandemic and the new normal period. This learning has been implemented at various levels of education with various platforms. Various studies have shown that online learning has varying effectiveness at all levels and types of education. The implementation of online learning is not supported by an in-depth study of student readiness. Student readiness in online learning can be assessed comprehensively from the aspects of equipment capability, technology skills, self-directed learning skills, motivation, and perceived usefulness

1. Introduction

The Covid-19 pandemic crisis had a direct impact on education not only at the international level but at the national level that had not been previously imagined [1], [7]. Covid-19 has even changed the education system related to curriculum, educator functions, student positions and assessments [9]. Covid-19 has also changed the way of educating future generations and even led to redefining the role of educators [15].

Tam and El Azar [19] stated that Covid-19 caused three fundamental changes in the global education. They are how people educated, new solutions in education that could generate the most required innovation and the digital divide that results in changes in education. Covid-19 also teaches the importance of life skills needed in the future era and opens up a wider role for technology in supporting education. Thus, digital technology and learning innovation are two key words in dealing with education in the Covid-19 pandemic.

Various countries have made efforts to overcome the impact of Covid-19 in the field of education, especially learning. The most widely pursued solution related to learning mitigation is distance learning, especially online learning or e-learning. One of the fundamental problems is how student readiness in online learning or e-learning? Various studies need to be carried out in order to obtain a comprehensive formulation of student readiness in online learning. Through this study, it is hoped that more comprehensive online learning preparation steps can be determined.

The rapid growth and popularity in the internet, distance education, and the pandemic crisis have made online education also grown rapidly. E-learning is the use of technology to enhance teaching and learning activities [11]. The main purpose of e-learning is to increase accessibility of education, cost and productivity. Waryanto [27] defines e-learning as the delivery of learning content or learning experience electronically based on multimedia computer. Wang [26] said that the e-learning system is a special type of instructional system. In addition, Holsapple [22] define as a learning using electronics technology such as computer and internet.

The advantages of e-learning utilization include: shorten the learning time, more economical, facilitate the interaction between students with materials, and accessed at any time. There are six key dimensions about e-learning system benefits [4] include: (1) connectivity, which means access to information is available on a global scale, (2) flexibility, which is learning can take place any time, any place, (3) interactivity, that is assessment of learning can be immediate and autonomous, (4) collaboration or the use of discussion tools can support collaborative learning beyond the classroom, (5) extended opportunities in terms of e-content which can reinforce and extend classroom-based learning, and (6) motivation where multimedia resources can make learning fun.

In addition, the benefits of e-learning were enhance independent learning, improve the efficiency of learning, and make lifelong learning opportunity for all.

2. Method

Literature review was conducted which served as the basis for the formulation of student e-learning readiness. There were 16 main literatures considered for analysis and and served as the basis for the study.

3. Result and Discussion

In general there are various formulas for assessing online learning readiness. Chapnick [8] defined the e-learning readiness assessment as a process for determining the gap between what students know and what they need to know. She listed eight categories to measure e-learning readiness including: psychological, sociological, environmental, human resources, financial, technological skills, equipment, and content readiness. Borotis and Poulymenakou [6] defined e-learning readiness as the mental or physical preparedness of an organization. E-learning readiness provides key information to organization to prepared e-learning implementation. So and Swatman [22] developed e-learning readiness assessment consist of six components: student's preparedness, teacher's preparedness, IT infrastructure, management support, school culture, and face-to-face. In addition, various studies [5], [14], [18], [28], [10], [20], [21] have also developed online learning readiness assessments in various contexts.

From these various opinions, it can be basically formulated that online learning readiness can be assessed from the aspects of the organization, students, and lecturers. In the context of education, student readiness needs to be formulated specifically. Various studies on student readiness in online learning can be summarized in the following table.

Table 1. Student e-learning Readiness

McVay Lynch's (2000)	Akaslan & Law (2011)	Tang & Chaw (2013)	Alem (2014)	Doe & Castillo (2017)	St. Andrew's College	University of Arkansas	SPAHP
1. Students behavior 2. Student attitudes	1. Technology 2. People 3. Content 4. Institution 5. Acceptance Training	1. learning flexibility 2. online learning 3. study management 4. technology 5. online interaction classroom learning.	1. Self-competence 2. Usefulness 3. Self-Directed Learning 4. Motivation Financial	1. Student Behavior 2. Student Self Direction 3. Student Attitude 4. Learner Characteristics 5. Cognitive Engagement 6. Emotional Engagement 7. Behavioral Engagement Technology Capabilities	1. Self-directedness 2. Learning preferences 3. Study Habits 4. Technology Skills Computer equipment capabilities	1. Computer skills 2. Learning Styles 3. Online learning Academic skills	1. Learning Online 2. Time Management 3. Communication and Support Technology

The synthesis of these various formulations basically results in the conclusion that student readiness in online learning can be assessed from the following aspects: equipment capability, technology skills, self-directed learning, motivation, and perceived usefulness. Equipment capability is related to online learning readiness from the aspect of facilities, especially computer devices and internet access; technology skills related to the ability of students to access and use technology, especially information and communication technology; self-directed learning is related to the student's ability to learn independently; motivation is closely related to the enthusiasm or self-driving of students in participating in online learning; and

usefullness related to student opinion on the benefits of online learning. The description of these indicators is an instrument for assessing student readiness in online learning according to the actual context.

4.   Conclusion

Student readiness in online learning in principle can be assessed from the following aspects: equipment capability, technology skills, self-directed learning, motivation, and perceived usefulness.

Acknowledgments

5.   Reference

[1]   Agnoletto, R., & Queiroz, V.C 2020 COVID-19 and the Challenges in Education CEST, 5(02)

[2]   Akaslan, D., & Law, E. L.-C. 2011 Measuring Student e-learning Readiness: A Case About the Subject of Electricity in Higher Education Institutions in Turkey. In H. Leung, E. Popescu, Y. Cao, R. W. H. Lau, & W. Nejdl (Eds.), Advances in Web-based Learning, Proceedings of ICWL 2011 (pp. 209-218) . LNCS 7048. Berlin, Heidelberg, & New York: Springer.

[3]   Alem, F., Plaisent, M., Zuccaro, C., & Bernard, P. 2016 Measuring e-Learning Readiness Concept: Scale Development and Validation Using Structural Equation Modeling. International Journal of e-Education, e-Business, e-Management and e-Learning, 6(4), 193–207

[4]   Alqahtani, A. A., 2010 The Effectiveness of Using E-learning, Blended Learning and Traditional Learning on Students. Achievement and Attitudes in a Course on Islamic Culture: an Experimental Study Doctor Thesis Durham University

[5]   Aydin, C. H., & Tasci, D. 2005 Measuring Readiness for e-Learning: Reflections from an Emerging Country Educational Technology & Society, 8(4), 244-257

[6]   Borotis, S., & Poulymenakou, A. 2004 e-Learning Readiness Components: Key issues to consider before adopting eLearning interventions. In J. Nall, & R. Robson (Eds.), Proceedings of world conference on e-Learning in corporate, government, healthcare, and higher education (pp. 1622-1629) Chesapeake, VA AACE

[7]   Carlson E.R. 2020 COVID-19 and Educational Engagement. Journal of Oral and Maxillofacial Surgery. https://doi.org/10.1016/j.joms.2020.04.033

[8]   Chapnick, S. 2000 Are you Ready for e-Learning? http://blog.uny.ac.id/nurhadi/ files/2010/08/are_you_ready_ for_elearning.pdf

[9]   Daniel, S.J. 2020 Education and the COVID 19 Pandemi Prospects. https://doi.org/10.1007/s11125-020-09464-3

[10]   Darab, B., Montazer, G. A. 2011 An Electric Model for Assessing E-learning Readiness in the Iranian universities Computers and Education 56 (3), 900-910

[11]   Doculan, A.A.D. 2016 E-learning Readiness Assessment Tool for Philippine Higher Education Institutions. International Journal on Integrating Technology in Education, 5 (2), 33-43.

[12]   Doe, R., Castillo, M. S., & Musyoka, M. M. 2017 Assessing Online Readiness of Students. Online Journal of Distance Learning Administration, 20(1)

[13]   Holsapple, C.W., & Lee-Post, A. 2006 Defining, Assessing, and Promoting E-Learning Success: An Information Systems Perspective. Decision Sciences Journal of Innovative Education, Vol. 4(1), 67-68

[14] Kaur, K., Abas, Z. 2004 An Assessment of e-Learning Readiness at the Open University Malaysia. International Conference on Computers in Education (ICCE2004) Melbourne Australia

[15] Luthra, P., & Mackenzie, S. 2020 4 Ways Covid-19 Education Future Generations. https://www.weforum.org/agenda/2020/03/4-ways-covid-19-education-futuregenerations/

[16] McVay, L, M. (2000). Developing a Web-based Distance Student Orientation to Enhance Student Success in an Snline Bachelor's Degree Completion Program (Doctoral dissertation, Nova Southeastern University). http://web.pdx.edu/~mmlynch/McVaydissertation.pdf

[17] Online Learning Readiness Assessment. https://studylib.net/doc/12040687/online-learning-readiness-assessment

[18] Psycharis, S. 2005 Presumptions and Action Affecting an e-learning Adoption by the Educational System. Implementation Using Virtual Private Networks European Journal of Open, Distance and E-learning, http://www.eurodl. org/materials/contrib/ 2005/Sarantos_Psycharis.htm

[19] Puslit Kependudukan LIPI 2020 Covid-19, Transformasi Pendidikan dan Berbagai Problemnya. https://kependudukan.lipi.go.id/id/berita/53-mencatatcovid19/838-covid-19-transformasi-pendidikan-dan-berbagai-problemnya

[20] Saekow, A., & Samson, D., 2011 A study of Elearning Readiness of Thailand's Higher Education Comparing to the United States of America (USA)'s case International Journalof eEducation, e-Business, e-Management and eLearning, 1(2).

[21] Schreurs, J., & Al-Huneidi, A. 2012 E-Learning Readiness in Organizations. Ijac 5(1). http://dx.doi.org/10.3991/ijac.v5i1.1885

[22] So, T., & Swatman, P. M. C. 2006 e-Learning readiness of Hong Kong teachers In Hong Kong IT in education conference. Citeseer. http://citeseerx.ist.psu.edu/viewdoc/ download?doi¼10.1.1.65.8121&rep¼rep1&type¼pdf

[23] SPAHP Online Learning Readiness Assessment https://spahp.creighton.edu/sites/spahp. creighton.edu/files/SPAHP%20Online%20Learning%20Readiness%20Assessment_1.pdf

[24] Tang, C. M., & Chaw, L.Y. 2013 Readiness for Blended Learning: Understanding Attitude of University Students. International Journal of Cyber Society and Education, 6, 79–100

[25] University of Arkansas. Online Course Readiness Quiz. https://online.uark.edu/students/ readiness-quiz.php

[26] Wang, Y., Wang, H., & Shee, D. Y., 2007 Measuring e-learning Systems Success in an Organizational Context: Scale Development and Validation Computers in Human Behavior 23, 1794

[27] Waryanto, N. 2014 Tingkat Kesiapan Implementasi E-Learning di Sekolah Menengah Atas Kota Yogyakarta Jurnal Pendidikan Matematika dan Sains, 1(2), 117-124

[28] Watkins, R., Leigh, D., & Triner D. 2004 Assessing Readiness for E Learning Journal of Performance Improvement Quarterly, 17(4), 66-79