

Digital Literacy Skills And Extent Of Engagement On Digital Classroom Tools Of General Education Teachers In An Inclusive Setting

VIDAL C B¹, VIDAL J S², DE LOS REYES C³, ANCHETA R⁴, CAPUNO R⁵, PINILI L⁶, ETCUBAN J⁷, NIÑA R⁸, MANGUILIMOTAN R⁹, MANALASTAS R¹⁰

¹Teacher – Special Education, Kotlik School, Lower Yukon School District, Kotlik Alaska, USA.

²Teacher – Elementary, Kotlik School, Lower Yukon School District, Kotlik Alaska, USA.

³Former Dean - College of Education, Cebu Technological University, Main Campus, M.J. Cuenco Ave., Cebu City Philippines.

⁴University President - CTU System, Cebu Technological University, Main Campus, M.J. Cuenco Ave., Cebu City Philippines.

⁵Dean - College of Education, Cebu Technological University, Main Campus, M.J. Cuenco Ave., Cebu City Philippines.

⁶Chairman, College of Education - CTU Online, Cebu Technological University, Main Campus, M.J. Cuenco Ave., Cebu City Philippines.

⁷Chairman, Research & Development - College of Education, Cebu Technological University, Main Campus, M.J. Cuenco Ave., Cebu City Philippines.

⁸Former Chairman, Special Education Dep't. - College of Education, Cebu Technological University, Main Campus, M.J. Cuenco Ave., Cebu City Philippines.

⁹Associate Dean, Special Programs - College of Education, Cebu Technological University, Main Campus, M.J. Cuenco Ave., Cebu City Philippines.

¹⁰Dean, Graduate School - College of Education, Cebu Technological University, Main Campus, M.J. Cuenco Ave., Cebu City Philippines.

ABSTRACT

This descriptive-correlational research was conducted to examine general education teachers' digital literacy skills in an inclusive classroom setting and their level of engagement with digital classroom tools. This study included a detailed description of the respondents' profile in terms of age and gender, civil status, highest educational attainment, field of specialization, years in teaching, number of digital technology seminars/trainings attended, years using computers, and the type of LSENs in class. A survey questionnaire was used to assess the degree of digital literacy skills of the respondents and their extent of engagement with the use of advanced digital classroom tools. Frequency count, percentage, weighted mean, standard deviation, and one-way analysis of variance were used to treat the data gathered. The test of a significant relationship between the demographic profile of the respondents and their degree of digital literacy was tested at a 0.05 level of significance. Likewise, a test of significant difference between digital literacy and the extent of engagement in the use of advanced digital classroom tools when grouped according to the type of LSENs handled was also subjected to a similar level of significance. Findings revealed that teachers were highly literate in terms of digital literacy, but they needed to improve their engagement in the use of advanced digital classroom tools, as they were only found to be moderately interested in using these tools. It was also revealed that teachers, regardless of their civil status, field of specialization, gender, highest educational attainment, or the type of learners with special educational needs, expressed an interest in dealing with the technology that was employed in their lessons. All teachers have maximized the use of digital literacy skills, regardless of the number of LSENs they have in their class. An action plan was made to improve the digital skills of teachers, especially those with LSENs in their classrooms. This plan will be

used in Dasmariñas, Silang, and the whole Cavite School Division in the province of Cavite in the Philippines.

Keywords: descriptive-correlational research, digital literacy skills, general education teachers, digital classroom tools, learners with special educational needs

INTRODUCTION

Literacy has evolved from being able to read and write to a social practice that allows people to learn and interact with the world. Remote learning and online instruction are becoming more common in educational settings. As online learning becomes the main way teachers teach, they need to think about how they can use digital technologies to support and grow students' different literacy skills. In the middle of the COVID-19 pandemic, general education teachers in Dasmariñas and Silang, Cavite, Philippines face the hurdles and remain committed to teaching in the "new normal." The results of this study should lead to the creation of a plan to help teachers improve their digital skills.

Learning digital literacy aims at training learners in new strategies and means of comprehension for materials they have read and encountered. It gives LSENs various ways of acquiring knowledge and skills.

THEORETICAL BACKGROUND

This research is based on the theories and approaches of digital learning and approaches of Terrell (2018), such as Substitution, Amplification, and Transformation: R.A.T. Models, SAMR, TPACK; Bloom's Digital Taxonomy of Churches (2009); and the Connectivism theory of Merriam (2018). The digital learning approach examines what teachers and students are currently doing online and helps individuals design programs to help students develop the digital skills they need to grow in a digitally connected world. Terrell (2018) explained that the RAT (Replace, Amplify, and Transform) is an assessment framework for understanding the role of technology in teaching, learning, and practice of programs that was originally developed for K-12 education. The original goal of the RAT framework was to offer it as a self-assessment tool for mentoring and to

help teachers get better at making critical decisions in technology. Technology as a Replacement: Technology is used to replace established teaching methods, student learning processes, or content goals, but not to change them, merely as a different (digital) means to the same instructional end. Typically, all that changes are the medium through which a well-established purpose is met. Think of a proxy, stand-in, or surrogate. Technology as an Amplifier—technology improves efficiency, effectiveness, and Technology as amplification: technology makes things easier, faster, and more productive for teachers, students, and the content they teach. The tasks stay fundamentally the same while the technology extends an individual's capabilities in effectiveness or streamlining. Think of: enlargement (larger, greater, stronger); addition of detail (fuller, clearer); increase in magnitude; loudening. (Leu, 2017).

Several learning theories have been developed over time to aid in the connection between psychology and the process of learning. The theory of digital learning theories and approaches (Terrell, 2018) will help this study figure out how teachers who work with LSENs have learned digital skills. According to Picciano (2017), online education is no different from traditional training. This means that no single learning theory has developed. Picciano (2017) also emphasized that three separate "presences," cognitive, social, and teaching, form the basis of the "community of inquiry" model created by Garrison, Anderson, and Archer (2000) for online learning settings. Using their paradigm, teachers and students can create online and blended courses as active learning environments. The community of inquiry is one of the most popular models that are designed to be highly interactive among students and teachers in the form of discussion boards, blogs, wikis, and videoconferencing.

To ensure the continuation of education for school-aged children worldwide throughout the pandemic era, as mentioned by Yazcavir and Gurgur (2021) in their study on Students with Special Needs in Digital Classrooms during the COVID-19 Pandemic in Turkey, distance education has been initiated using a variety of technical tools and Internet-based education systems. The utilization of modern educational technology has enabled online face-to-face classrooms that can accommodate a large number of students, as well as offline sessions on websites. There is a lot of evidence that the current focus on subject-specific technical and information skills does not give students the wide range of knowledge and skills they need to be successful in today's classrooms and beyond. Falloon (2020) examines the teacher digital competency network. According to Singh (2021), there is a growing academic culture of the digital classroom. Although computer technology can improve educational quality, it cannot do so on its own. The fundamental challenges are in making appropriate use of the benefits provided by digital technology. Serezhkina (2021) claimed that the fast digitalization of education and the rapid rise of information technology necessitate the provision of suitable current competences for all participants in the educational process. The COVID-19 pandemic and the fast shift to online learning have changed teaching approaches everywhere.

In the study of Clements (1995), it was emphasized that some oppose computer usage because, by definition, computers are mechanical and procedural. Humans increasingly see computers as useful creative tools. Teachers must understand how digital technology might help students learn more effectively. Teachers must be knowledgeable about digital technology in order to help students' study more effectively, according to Topno's (2020) teachers must be aware of digitalization and use technological skills in teaching and learning.

Connectivism is a learning paradigm that discusses how Internet technology has generated new possibilities for studying and sharing knowledge across the Internet and among themselves. Web browsers, email, wikis, online discussion forums, social networks, and YouTube are examples of these technologies. A

teacher assists students in learning and sharing independently by guiding them to content and responding to key questions as required. Siemens and Dowens (2017)

Siemens's (2005) theory of "connectivism" is based on the idea that decisions are made on the basis of changes that change quickly. Connectivism's core ideas: Learning and knowing depend on different points of view. Choosing what to learn and figuring out what information means are seen through the lens of a reality that is always changing. According to Merriam (1998), as indicated in Todd (2018)'s research, connectivism also solves the issues that many organizations confront in their knowledge management efforts. The health of an organization's learning ecosystem is dependent on the proper cultivation of information flow. Bloom (2020) provided the following descriptions and examples of digital technologies that link to the taxonomy network: Creating: The act of making unique or distinct work. Calculating, charting, editing, hacking, presenting, uploading, operating, and group collaboration are all examples of computer skills.

LEGAL BASES

The findings of this research are further validated and enhanced by the following legal basis in the Philippines: Basic Education Learning Continuity Plan (BE-LCP) in line with DepEd Order No. 012, Section 2020, Magna Carta for Persons with Disabilities RA 7277 Article XIV Section 1, 1987 Ten-Year Teacher Education Program for Special and Exceptional Children RA 5250, The Enhanced Basic Education Act of 2013 (RA 10533).

As a response to the global COVID-19 crisis, the Department of Education issued a Basic Education Learning Continuity Plan (BE-LCP) in 2020 under DepEd Order No. This concept was designed to help students learn in a way that does not require them to physically attend school. Every student's learning will be consistent, even if they are just in their homes. One of the purposes of the BE-LCP is to incorporate technology into every student's learning. There are three forms of distance learning: modular distance learning, online distance learning, and television/radio-based instruction. Distance learning relies heavily on

technological solutions. Also in May 2020, DepEd made the BE-LCP to direct the department on how to provide education during the COVID-19 pandemic while protecting the health, safety, and welfare of all students, teachers, and agency workers.

In accordance with this, LSENS (learners with special educational needs) shall not experience discrimination when dealing with this kind of learning continuity solution mandated by the Department of Education. RA 7277: Magna Carta for Disabled Persons says that the LSENS have the right to a good education. This right must not be taken away.

(Zenn, 2020) discussed the complete text of RA 2722, often known as the Magna Carta for Disabled Persons, which contains the following information that is applicable to all individuals with disabilities: In Chapter 2, Section 12, the topic of excellent education is explored. Ensure that disabled individuals have enough access to high-quality education and opportunity to pursue their professional development. All appropriate measures shall be taken to guarantee that such education is available to all handicapped people. Learning institutions are not allowed to refuse a handicapped person entrance to any course they provide because of their disability or impairment.

When developing educational policies and programs, the state must consider the unique needs of disabled students. Specifically, it would urge educational institutions to address the unique needs of disabled students while designing school facilities, class schedules, physical education requirements, and other relevant considerations for them. The state should also encourage the provision by educational institutions of auxiliary services that would aid in the facilitation of the learning process for people with disabilities. (Zenn, 2020).

Another legal basis for this research is RA 5250. This is an Act Establishing a Ten-Year Training Program for Teachers of Special and Exceptional Children in the Philippines and Authorizing the Appropriation of Funds. According to ("RA 5250-an act establishing a ten-year training program for teachers of special and exceptional children in the Philippines and authorizing the appropriation of funds thereof, National Council on Disability Affairs," n.d) Teachers who teach students with special

educational needs (LSEN) are supported by the Philippine government. It also means they have to go through a lot of training and practice to get the skills needed for the job.

Republic Act No. 10533 (RA 10533), otherwise known as the Enhanced Basic Education Act of 2013, has expanded the years of schooling in basic education from 10 to 12. Section 4 of this Republic Act explains that the minimum basic education curriculum includes one (1) year of kindergarten, six (6) years of elementary school, and six years of secondary education. Basic education must be offered in the learners' native languages since language plays a critical role in shaping their formative years.

METHODOLOGY

This study provided an in-depth description of the respondents' digital literacy skills (in terms of operational skills, information navigation, social use, creative use, mobile and computer navigation, and digital awareness) and the extent of engagement of the respondents on the use of advanced digital classroom tools such as (video conference and collaboration platform, course authoring tools, audience engagement tools, learning management system, survey tools, screen recording and video editing, presentation applications, file sharing, digital notebook, and calendar timetable).

INSTRUMENT

This study looked at the general education teachers who teach LSENS in an inclusive classroom setting and how well they can do their jobs in a digital environment. The researcher used a three-part survey questionnaire to get the data for this study. These questionnaires are based on Son et al. (2017) and Van Dijk & Van Deursen (2014).

RESULTS AND DISCUSSION

In the selected schools in Dasmarinas, Cavite, Philippines, the following results were found:

1.The respondents were found to be highly literate in terms of the six digital literacy skills as to operational skills, information navigation, social use, creative use, mobile and computer navigation, and digital awareness.

2. Teacher-respondents indicated that they use advanced digital classroom tools when working with LSENs to an acceptable degree. However, it was discovered that they utilized video conferencing and collaboration services extensively.

3. The results showed a significant relationship between the profile of the teacher-respondents in terms of age, teaching experience, seminars attended, number of years using a computer, and their level of digital literacy skills. On the other hand, the civil status, field of specialization, gender, highest educational attainment, and type of learners with special educational needs have no significant relationship with their degree of digital literacy skills.

4. The profile of the teacher-respondents in terms of age, teaching experience, seminars attended, and number of years using a computer showed a significant relationship with their level of engagement with advanced digital classroom tools. However, their civil status, field of work, gender, highest level of education, and type of learner with special needs did not have an impact on their level of digital literacy skills.

5. It is revealed that the four groups of teachers handling Attention-Deficit Hyperactivity Disorder (ADHD), Autism-Spectrum Disorder (ASD), Intellectual Disability (ID), and other minor disabilities have the same level of digital literacy skills.

6. It is known that the four groups of teachers teaching Attention-Deficit Hyperactivity Disorder (ADHD), Autism-Spectrum Disorder (ASD), Intellectual Disability (ID), and other minor disabilities have the same level of engagement in the use of advanced digital classroom tools.

In the selected schools in Dasmarinas, Cavite, Philippines, the following results were found:

1. Teachers were found to be moderately literate when it came to operational skills, information navigation, creative use, mobile and computer navigation, and digital awareness. However, they said they were highly literate when it came to social use, which was not true.
2. The results showed that teachers were fairly engaged in the use of advanced digital classroom tools, except in video

conferencing and collaboration platforms, where they were found to be highly engaged.

3. The profile of the teacher-respondents in terms of age, teaching experience, seminars attended, and number of years using a computer has a significant relationship with their level of digital literacy skills. On the other hand, the civil status, field of specialization, gender, highest educational attainment, and type of learners with special educational needs have no significant relationship with their degree of digital literacy skills.
4. It was found that the profile of the teacher-respondents in terms of age, teaching experience, seminars attended, and number of years using a computer had a significant relationship with their level of engagement with advanced digital classroom tools. On the contrary, the civil status, field of specialization, gender, highest educational attainment, and type of learner with special educational needs have no significant relationship with their degree of digital literacy skills.
5. It was found that the four groups of teachers handling Attention Deficit Hyperactivity Disorder (ADHD), Autism-Spectrum Disorder (ASD), Intellectual Disability (ID), and other minor disabilities have the same level of digital literacy skills.
6. It was revealed that the four groups of teachers teaching Attention Deficit Hyperactivity disorder (ADHD), Autism-Spectrum Disorder (ASD), Intellectual Disability (ID), and other minor disabilities have the same level of engagement in the use of advanced digital classroom tools. This means that the learner's type of disability has nothing to do with the teacher's extent of engagement in the advanced digital classroom tools.

CONCLUSION

While teachers are found highly literate in terms of digital literacy, they must also endeavor to increase their engagement in the use of advanced digital classroom tools since they have just registered as fairly engaged. It is noteworthy to mention that regardless of civil status, field of

specialization, gender, highest educational attainment, and type of learners with special educational needs, teachers still had an interest in coping with technology as used in their classes.

RECOMMENDATION

Schools must offer enough professional development in digital literacy skills and involve teachers in the use of advanced digital classroom tools, according to the study. The provision of a comprehensive Faculty Development program for teachers, with a particular emphasis on technology enrichment, should be mandated. This would assist teachers enhance the quality of their instruction and contribute positively to their students' digital learning experiences.

REFERENCES

1. Bean, Rita M. (2015) *The Reading Specialist: Leadership and Coaching for the Classroom, School*, 3rd Edition, The Guilford Press, New York
2. Fieldhouse, M., & Nicholas, N. (2019). Digital literacy as information Savvy: The road to information literacy. In M. Knobel & C. Lankshear (Eds.), *Digital literacies concepts, policies and practices* (pp. 43–72). New York, NY: Peter Lang Publishing.
3. Khosrow-Pour, Mehdi (2018) *Encyclopedia of Information Science and Technology*, Fourth Edition Copyright © 2018 by IGI Global. Retrieved from <https://www.researchgate.net/> Accessed on Nov 1, 2020
4. Sharan, Merriam B. (2020) *Learning in Adulthood, A comprehensive Guide*, 4th edition, John Wiley and Sons, Inc.
5. Spires, H., & Estes, T. (2018). Reading in web-based learning environments. In C. Collins Block & M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 115–125). New York: Guilford Press.
6. (2010.). *AcademicJournals*. <https://academicjournals.org/journal/IJSTER/article-full-text-pdf/68579321822>
7. Ahmmed, M., Sharma, U., & Deppeler, J. (2012). Variables affecting teachers' attitudes towards inclusive education in Bangladesh. *Journal of Research in Special Educational Needs*, 12(3), 132-140. <https://doi.org/10.1111/j.1471-3802.2011.01226.x>
8. Almerich, Gonzalo (2016) Teachers' information and communication technology competences: A structural approach <https://doi.org/10.1016/j.compedu.2016.05.002>
9. Aslan, A., & Zhu, C. (2016). Influencing factors and integration of ICT into teaching practices of pre-service and starting teachers. *International Journal of Research in Education and Science*, 2(2), 359. <https://doi.org/10.21890/ijres.81048>
10. Bhatnagar, N., & Das, A. (2014). Attitudes toward inclusive education scale--hindi version. *PsycTESTS Dataset*. <https://doi.org/10.1037/t64502-000>
11. Buckingham, D. (2006). Defining digital literacy—What do young people need to know about digital media? *Nordic Journal of Digital Literacy*, 1(4), 263-277. https://doi.org/10.1163/9789004447769_005
12. Cox, John (2018) *Positioning the Academic Library within the Institution: A Literature Review* <https://doi.org/10.1080/13614533.2018.1466342>
13. Dela Fuente, J. A. (2021). Implementing inclusive education in the Philippines: College teacher experiences with deaf students. *Issues in Educational Research*, 31(1), 94–110. <https://search.informit.org/doi/10.3316/informit.748877765999107>
14. Durff, L., & Carter, M. (2019). Overcoming second-order barriers to technology integration in K–5 schools. *Journal of Educational Research and Practice*, 9(1). <https://doi.org/10.5590/jerap.2019.09.1.18>
15. Ekici, F. T., & Aydoğdu, M. (2014). Perceptions of prospective science teachers about science and technology concepts and scientific-technological literacy. *International Research in Education*, 2(1), 169. <https://doi.org/10.5296/ire.v2i1.4965>
16. Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development*, 47(4), 47-61. <https://doi.org/10.1007/bf02299597>
17. Eshet-Alkalai, Y., & Chajut, E. (2009). Changes over time in digital

- literacy. *CyberPsychology & Behavior*, 12(6), 713-715. <https://doi.org/10.1089/cpb.2008.0264>
18. Faber, J. M., Luyten, H., & Visscher, A. J. (2017). The effects of a digital formative assessment tool on mathematics achievement and student motivation: Results of a randomized experiment. *Computers & Education*, 106, 83-96. <https://doi.org/10.1016/j.compedu.2016.12.001>
19. Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 68(5), 2449-2472. <https://doi.org/10.1007/s11423-020-09767-4>
20. Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education*, 15(1), 7-21. <https://doi.org/10.1080/08923640109527071>
22. Gerard, John (2016) Connectivism: A knowledge learning theory for the digital age? <https://doi.org/10.3109/0142159X.2016.1173661>
23. Gonzalo, Almerich (2016) Teachers' information and communication technology competences: A structural approach, <https://doi.org/10.1016/j.compedu.2016.05.002>
24. Guzman, A., & Nussbaum, M. (2009). Teaching competencies for technology integration in the classroom. *Journal of Computer Assisted Learning*, 25(5), 453-469.
25. Hillman, T. (2017). Finding space for student innovative practices with technology in the classroom. *Learning, Media and Technology*, 39(2), 169-183
26. Hillman, Good (2017) STEM literacy or literacies? Examining the empirical basis of these constructs <https://doi.org/10.1002/rev3.3162>
27. Ibrahim, Abdellah (2018) The effect of personal learning environments on participants' higher order thinking skills and satisfaction <https://doi.org/10.1080/14703297.2018.1534601>
28. Inciong, T. G., & Quijano, Y. S. (2004). Inclusion of children with disabilities: The Philippines experience. *Asia Pacific Journal of Education*, 24(2), 173-191. <https://doi.org/10.1080/02188791.2004.10600208>
29. Jannah, M., Prasojo, L. D., & Jerusalem, M. A. (2020). Elementary school teachers' perceptions of digital technology-based learning in the 21st century: Promoting digital technology as the proponent learning tools. *Al Ibtida: Jurnal Pendidikan Guru MI*, 7(1), 1. <https://doi.org/10.24235/al.ibtida.snj.v7i1.6088>
30. Johnson, Amy M (2016) Challenges and solutions when using technologies in the classroom, Arizona State University Retrieved from <https://files.eric.ed.gov/>
31. Judy, Lymbery (2017) Listening to student voices: A phenomenological investigation of the student experience of using technology for learnings, 2017-05-22T03:17:08Z
32. Leu, Donald J. (2017) New Literacies: A Dual-Level Theory of the Changing Nature of Literacy, Instruction, and Assessment <https://doi.org/10.1177/002205741719700202>
33. Lock, R. H., & Kingsley, K. V. (2007). Empower diverse learners with educational technology and digital media. *Intervention in School and Clinic*, 43(1), 52-56. <https://doi.org/10.1177/10534512070430010701>
34. Mahapatra, S. K. (2020). Impact of digital technology training on English for science and technology teachers in India. *RELC Journal*, 51(1), 117-133. <https://doi.org/10.1177/0033688220907401>
35. Muega, M. A. G. (2016). Inclusive Education in the Philippines: Through the Eyes of Teachers, Administrators, and Parents of Children with Special Needs. *Social Science Diliman*, 12(1).
36. Marcino, Patricia (2018) Impact of Information and Communication Technology on Academic Achievement for Exceptional Student Education Inclusion Students, Walden University
37. Muklis, Uday (2018) A Qualitative Descriptive Study on the Implementation of New Technologies in Education 13425869
38. Ok, M. W., & Rao, K. (2019). Digital tools for the inclusive classroom: Google chrome as assistive and instructional technology. *Journal of Special Education Technology*, 34(3), 204-211. <https://doi.org/10.1177/0162643419841546>
39. Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. *Online*

Learning, 21(3). <https://doi.org/10.24059/olj.v21i3.1225>

40. Pittman, Tiffani (2015) Technology integration in third, fourth and fifth grade Classrooms in a Florida school district Educational Technology Research and Development volume 63, pages539–554(2015)

41. Pongsakdi, N., Kortelainen, A., & Veermans, M. (2021). The impact of digital pedagogy training on in-service teachers' attitudes towards digital technologies. *Education and Information Technologies*, 26(5), 5041-5054. <https://doi.org/10.1007/s10639-021-10439-w>

42. Rao, K., Torres, C., & Smith, S. J. (2021). Digital tools and UDL-based instructional strategies to support students with disabilities online. *Journal of Special Education Technology*, 36(2), 105-112. <https://doi.org/10.1177/0162643421998327>

43. Santiana, Santiana (2017) Prezi, Cloud-Based Presentation, for Teaching: How is it interesting? Vol 2, No 2 (2017) <http://dx.doi.org/10.30659/e.2.2>

44. Savage, Moira (2015) Digital Literacy for Primary Teachers (Critical Teaching), Digital Literacy for Primary Teachers, Critical Publishing.

45. Schindler, L. A., Burkholder, G. J., Morad, O. A., & Marsh, C. (2017). Computer-based technology and student engagement: a critical review of the literature. *International Journal of Educational Technology in Higher Education*, 14(1), 25.

46. Serezhkina, A. (2021). Digital Skills of Teachers. In *E3S Web of Conferences* (Vol. 258). EDP Sciences, <https://doi.org/10.1051/e3sconf/202125807083>

47. Setiawan, Rudi (2020) Evaluation of the Application of Online Learning in Indonesian Universities, *Education, ICT Information and Communications Technologies*

48. Singh, M. N. (2021). Inroad of digital technology in education: Age of digital classroom. *Higher Education for the Future*, 8(1), 20-

30. <https://doi.org/10.1177/2347631120980272>

49. Skinner E., Beers J. (2016) Mindfulness and Teachers' Coping in the Classroom: A Developmental Model of Teacher Stress, Coping, and Everyday Resilience. In: Schonert-Reichl K.,

Roeser R. (eds) *Handbook of Mindfulness in Education. Mindfulness in Behavioral Health*. Springer, New York, NY. https://doi.org/10.1007/978-1-4939-3506-2_7

50. Son, J., Park, S., & Park, M. (2017). Digital literacy of language learners in two different contexts. *The JALT CALL Journal*, 13(2), 77-96. <https://doi.org/10.29140/jaltcall.v13n2.213>

51. Stronge, James H. (2018) *Qualities of Effective Teachers* 3rd edition, Library of Congress Cataloging in Publication Data.

52. Sun, Sunny, Lee, Patrick, Lee, Andy and Law, Rob (2016). Perception of attributes and readiness for educational technology: hospitality management students' perspectives. *Journal of Hospitality and Tourism Education*, 28 (3), 142-154. doi: 10.1080/10963758.2016.1189832

53. Surej, John (2015) The integration of information technology in higher education: A study of faculty's attitude towards IT adoption in the teaching process <https://doi.org/10.1016/j.cya.2015.08.004>

54. Teclehaimanot, Berhane (2016) Technology-Rich Faculty Development for Teacher Educators: The Evolution of a Program

55. Van Dijk, J. A., & Van Deursen, A. J. (2014). Digital skills. <https://doi.org/10.1057/9781137437037>

56. Wang, Zhijun (2016) Interaction pattern analysis in cMOOCs based on the connectivist interaction and engagement framework <https://doi.org/10.1111/bjet.12433>

57. Yazcayir, G., & Gurgur, H. (2021). Students with special needs in digital classrooms during the COVID-19 pandemic in Turkey. *Pedagogical Research*, 6(1), em0088. <https://doi.org/10.29333/pr/9356>

58. Yunkul, Eyup (2017) Students' Attitudes Towards Edmodo, a Social Learning Network: A Scale Development Study <https://doi.org/10.17718/tojde.306554>