



DAFTAR PUSTAKA

- [1] J. F. Kalolo, “Digital revolution and its impact on education systems in developing countries,’ *Education and Information Technologies*, 2019.
- [2] A. M. Kaplan and M. Haenlein, “Higher education and the digital revolution: About MOOCs, SPOCs, social media, and the Cookie Monster”, *Business Horizons*, vol. 59, pp. 441-450, 2016.
- [3] B. E. Penprase, “The Fourth Industrial Revolution and Higher Education”. In: Gleason N. (eds) *Higher Education in the Era of the Fourth Industrial Revolution*. Palgrave Macmillan, Singapore, 2018.
- [4] M. A. Peters, “Technological unemployment: Educating for the fourth industrial revolution”, *Educational Philosophy & Theory*, vol. 49, no. 1, pp. 1–6, 2017.
- [5] K. Matthews, C. Garratt, and D. Macdonald, “The Higher Education landscape: trends and implications”, *Discussion Paper*, Brisbane: The University of Queensland, 2018.
- [6] M. Baygin, H. Yetis, M. Karakose, and E. Akin, “An Effect Analysis of Industry 4.0 to Higher Education”, *15th International Conference on Information Technology Based Higher Education and Training (ITHET)*, 2016.
- [7] NavitasVentures, “Digital transformation in Higher Education”, Navitas Ventures, 2017. [Online]. Available: https://www.navitasventures.com/wp-content/uploads/2017/08/HE-Digital-Transformation-_Navitas_Ventures_-EN.pdf.
- [8] Microsoft, “87% of education leaders believe they need to be a digital institution to succeed”, Microsoft Asia News Center, 2017. [Online]. Available: <https://news.microsoft.com/apac/2017/11/16/87-education-leaders-believe-need-digital-institution-succeed/>.
- [9] P. Kähkipuro, “Case Aalto University - digital transformation in Higher Education”, *Science and Technology*, vol. 7, pp. 81-88, 2015.
- [10] K. Sandkuhl, and H. Lehmann, “Digital transformation in Higher Education – the role of enterprise architectures and portals”, *Digital Enterprise Computing*, Gesellschaft für Informatik, Bonn, pp. 49-60, 2017.
- [11] A. Thoring, D. Rudolph, and R. Vogl, “Digitalization of Higher Education from a student’s point of view”, *European Journal of Higher Education IT*, 2017.



- [12] K. L. Wilms, C. Meske, S. Stieglitz, H. Decker, L. Froehlich, N. Jendrosch, S. Schaulies, R. Vogl, and D. Rudolph, "Digital transformation in Higher Education—new cohorts, new requirements?", *Proceedings of 23rd Americas Conference on Information Systems*, 2017.
- [13] J. Reis, M. Amorim, N. Melão, and P. Matos, "Digital transformation: a literature review and guidelines for future research", *Trends and Advances in Information System and Technologies*, pp. 411-421, 2018.
- [14] O. Y. Kaminskyi, Y. O. Yereshko, and S. O. Kyrychenko, "Digital transformation of university education in Ukraine: trajectories of development in the conditions of new technological and economic order", *Information Technologies and Learning Tools*, vol. 64, no. 2, pp. 128-137, 2018.
- [15] S. K. Nayak, "Digital transformation roadmap: The case of Nova SBE's executive education", Master Thesis in Nova School of Business and Economics, 2017. [Online]. Available: https://run.unl.pt/bitstream/10362/28309/1/Nayak_2017.pdf.
- [16] F. Granito, "Digital readiness versus digital transformation", 2017. [Online]. Available: <https://www.institutefordigitaltransformation.org/digital-readiness-versus-digital-transformation>.
- [17] A. Tubaishat and A. Lansari, "Are students ready to adopt e-learning? a preliminary e-readiness study of a university in the Gulf Region". *International Journal of Information and Communication Technology Research*, vol. 1, no. 5, pp. 210-215, 2011.
- [18] V. Đurek, N. B. Ređep, and B. Divjak, "Digital maturity framework for Higher Education institutions". *Central European Conference on Information and Intelligent Systems*, 2017.
- [19] Y. Limani, E. Hajrizi, L. Stapleton, and M. Retkoceri, "Digital transformation readiness in Higher Education Institutions (HEI): the case of Kosovo", *IFAC Papers Online*, vol. 52, no. 25, pp. 52-57, 2019.
- [20] V. Udvovita, "Conceptual review on dimensions of digital transformation in modern era", *International Journal of Scientific and Research Publication*, vol. 10, no. 2, pp.520-529, 2020
- [21] J. Stüber, "Barriers of digital technologies in Higher Education: A Teachers' Perspective from a Swedish University", Master Thesis in Linnaeus University, 2018.



- [22] S. Gupta, “Organizational barriers to digital transformation”, Master of Science Thesis in Industrial Management Stockholm, 2018.
- [23] C. Matt, A. Benlian, and T. Hess, "Digital transformation strategies", *Business & Information Systems Engineering*, vol. 57, no. 5, pp. 339-343, 2015.
- [24] F. Brunetti, D. T. Matt, A. Bonfanti, A. D. Longhi, G. Pedrini, and G. Orzes, “Digital transformation challenges: strategies emerging from a multi-stakeholder approach”, *International Journal of Innovation Science*, vol. 32, no. 04, 2020.
- [25] P. Reid, “Categories for barriers to adoption of instructional technologies”, *Education and Information Technology*, vol. 19, pp. 383-407, 2014.
- [26] PricewaterhouseCoopers, “The Industry 4.0 / Digital Operations Self Assessment,” 2016. [Online]. Available: <https://i40-self-assessment.pwc.de/i40/interview/>. (Accessed: 15- Oct- 2021).
- [27] InternationalDataCorporation, “Digital Transformation is well established among CEE and SSA Organizations”, 2016. [Online]. Available: <https://www.oracle.com/ke/corporate/features/digital-transformation.html>. (Accessed: 16- Oct- 2021).
- [28] InnovationValueInstitute, “What does Digital Transformation mean for your organization?”. [Online]. Available: <https://ivi.ie/digital-readiness/>. (Accessed: 17-Oct- 2021).
- [29] TheOpenGroup, “TOGAF version 9.1”, Van Haren Publishing 1st edition 6th impression, Zaltbommel, 2017.
- [30] E. Henriette, M. Feki, and I. Boughzala, “The Shape of Digital Transformation: A Systematic Literature Review”, *Mediterranean Conference on Information Systems*, 2015
- [31] J. Basl, “Companies on the way to industry 4.0 and their readiness”, *Journal of System Integration*, vol. 9, no. 3, 2018.
- [32] T. Schwarzmüller, P. Brosi, D. Duman, and I. Welpe, “How Does the Digital Transformation Affect Organizations? Key Themes of Change in Work Design and Leadership”, *Management Revue*, vol. 29, no. 2, pp. 114-138, 2018.
- [33] S. Narayan, “*Agile IT Organization Design: For Digital Transformation and Continuous Delivery*”, Addison-Wesley Professional, 2015.



- [34] G. Westerman, C. Calméjane, D. Bonnet, P. Ferraris, and A. McAfee, “Report - Digital Transformation: A Road-Map for Billion-Dollar Organizations”, *Capgemini Consulting & MIT Center for Digital Business*, Paris & Cambridge, 2011.
- [35] IESALC-UNESCO, “COVID-19 and higher education: Today and tomorrow: Impact analysis, policy responses and recommendations”, 2020. [Online]. Available: <http://www.iesalc.unesco.org/en/wp-content/uploads/2020/04/COVID-19-EN-090420-2.pdf>.
- [36] L. S. Rodrigues, “Challenges of Digital Transformation in Higher Education Institutions: A brief discussion”, Proceedings of *30th IBIMA Conference*, 2017.
- [37] A. Marks, M. AL-Ali, R. Attasi, A. A. Elkishk, and Y. Rezgui, “Digital Transformation in Higher Education: Maturity and Challenges Post COVID-19”, *Advances in Intelligent Systems and Computing*, vol. 1330, pp. 53-70, 2021.
- [38] I. R. Gafurov, M. R. Safiullin, E. M. Akhmetshin, A. R. Gapsalamov, and V. L. Vasilev, “Change of the Higher Education Paradigm in the Context of Digital Transformation: From Resource Management to Access Control”, *International Journal of Higher Education*, vol. 9, no. 3, pp. 71-85, 2020.
- [39] A. Rof, A. Bikfalvi, and P. Marquès, “Digital Transformation for Business Model Innovation in Higher Education: Overcoming the Tensions”, *Sustainability*, vol. 12, no. 4980, 2020.
- [40] V. J. García-Morales, A. Garrido-Moreno, and R. Martín-Rojas, “The Transformation of Higher Education After the COVID Disruption: Emerging Challenges in an Online Learning Scenario”, *Front. Psychol*, vol. 12, 2021.
- [41] J. Crawford, K. Butler-Henderson, J. Rudolph, and M. Glowatz, “COVID-19: 20 Countries' Higher Education Intra-Period Digital Pedagogy Responses”, *Journal of Applied Learning and Teaching (JALT)*, vol. 3, no. 1, 2020.
- [42] A. Géczy, O. Krammer, and L. Sujbert, “Higher Education with Distance Learning during COVID-19 Pandemic – a Transitional Semester from the Viewpoint of Teachers”, *26th International Symposium for Design and Technology in Electronic Packaging*, 2020.
- [43] Ö. H. Kuzu, “Digital transformation in Higher Education: A case study on strategic plans,” *Высшее образование в России*, vol. 3, pp.9-23, 2020.



- [44] L. Mishra, T. Gupta, and A. Shree, “Online teaching-learning in higher education during lockdown period of COVID-19 pandemic”, *International Journal of Educational Research Open*, vol. 1, 2020.
- [45] P. Matkovic, P. Tumbas, M. Maric, and L. Rakovic, “Digital transformation of research process at Higher Education Institutions”, *INTED 2018 Conference*, 2018
- [46] H. Santos, J. Batista, and R. P. Marques, “Digital transformation in Higher Education: the use of communication technologies by students”, *Procedia Computer Science*, vol. 164, pp. 123-130, 2019.
- [47] K. Watty, J. McKay, and L. Ngo, “Innovators or inhibitors? accounting faculty resistance to new educational technologies in higher education”, *Journal of Accounting Education*, vol. 36, pp. 1-15, 2016.
- [48] H. Pirkkalainen and J. M. Pawlowski, “Global Social Knowledge Management: From Barriers to the Selection of Social Tools’, *Electronic Journal of Knowledge Management*, vol. 11, no. 1, pp. 3–17, 2013.
- [49] T. Tan, Ke. Chen, F. Xue, and W. Lu, “Barriers to Building Information Modeling (BIM) implementation in China's prefabricated construction: An interpretive structural modeling (ISM) approach”, *Journal of Cleaner Production*, vol. 219, pp. 949-959, 2019.
- [50] A. O. U. Onuka, “African higher education transformation for quality outcome”, In: Maringe F., Ojo E. (eds) *Sustainable Transformation in African Higher Education*, 3-24, SensePublishers, Rotterdam, 2017.
- [51] D. Marcum, “The Digital Transformation of Information, Education, and Scholarship”, *International Journal of Humanities and Arts Computing*, vol. 9, pp. 1-11, 2014.
- [52] M. Elsaadani and S. Alzahrani, “Higher Education Faculty Staff E-Readiness in Institutions of the Royal Commission in Jubail”, *International Journal of Advanced Information Technology*, vol. 8, no. 3, 2018.
- [53] D. Butler, M. Leahy, P. Twining, and et al, “Education systems in the digital age: the need for alignment”, *Technology, Knowledge and Learning*, vol. 23, no. 473, 2018.
- [54] S. H. Khan, M. Hasan, and C. K. Clement, “Barriers to the introduction of ICT into education in developing countries: the example of Bangladesh”, *International Journal of Instruction*, vol. 5, no. 2, pp. 61-80, 2012.



- [55] O. V. Yureva, L. A. Burganova, O. Y. Kukushkina, G. P. Myagkov, and D. V. Syradoev, "Digital Transformation and Its Risks in Higher Education: Students' and Teachers' Attitude", *Universal Journal of Educational Research*, vol. 8, no. 11B, pp. 5965-5971, 2020.
- [56] H. Pirkkalainen, and J. M. Pawlowski, "Global social knowledge management—understanding barriers for global workers utilizing social software", *Computers in Human Behavior*, vol. 30, pp. 637–647, 2014.
- [57] M. Godet, *From anticipation to action: Prospective and Strategy Manual*, México: Alfaomega, 1999.
- [58] J. W. Warfield, "Developing interconnected matrices in structural modelling", *Institute of Electrical and Electronics Engineering Transactions on Systems, Man and Cybernetics*, vol. 4, no. 1, pp. 51-81, 1974.
- [59] K. Peffers, T. Tuunanen, and B. Niehaves, "Design Science Research Genres: Introduction to the Special Issue on Exemplars and Criteria for Applicable Design Science Research", *European Journal of Information Systems*, vol. 27, no. 2, pp. 129-139, 2018.
- [60] K. Peffers, T. Tuunanen, M. A. Rothenberger, and S. Chatterjee, "A Design Science Research Methodology for Information Systems Research", *Journal of Management Information Systems*, vol. 24, no. 3, pp. 45–77, 2007.
- [61] B. Littig and F. Pöchhacker, "Socio-Translational Collaboration in Qualitative Inquiry: The Case of Expert Interviews", *Qualitative Inquiry*, vol. 20, no. 9, pp. 1085-1095, 2014.
- [62] U. Frank, *Evaluation of reference models*, pp. 118-140, 2006.
- [63] K. Petersen, et al., "Systematic Mapping Studies in Software Engineering", in *12th International Conference on Evaluation and Assessment in Software Engineering (EASE)*: University of Bari, Italy, 2008.
- [64] K. Kerroum, A. Khiat, A. Bahnasse, E. Aola, and Y. Khiat, "The proposal of an agile model for the digital transformation of the University Hasan II of Casablanca 4.0". *Procedia Computer Scence*, vol. 175, no. 2020, pp. 403-410, 2020.
- [65] D. Schaffhauser, "Biggest barriers to digital learning: lack of time, lack of devices", *The Journal and Campus Technology*, 2017. [Online]. Available: <https://thejournal.com/articles/2017/09/18/biggest-barriers-to-digital-learning.aspx>.



- [66] M. Rafiq, S. H. Batool, A. F. Ali, and M. Ullah, “University libraries response to COVID-19 pandemic: A developing country perspective”, *The Journal of Academic Librarianships*, vol. 47, no. 2021, 2021.
- [67] M. Gregory, and J. Lodge, “Academic workload: the silent barrier to the implementation of technology-enhanced learning strategies in higher education”, *Distance Education*, vol. 36, no. 2, pp. 201-230, 2015.
- [68] E. Limaj, and E. Bilali, “Examining digital technology constraints on Higher Education in developing countries through the lens of the capability approach”, *The 22nd Pacific Asia Conference on Information System*, 2018.
- [69] C. Shelton, “Giving up technology and social media: why university lecturers stop using technology in teaching”, *Technology, Pedagogy and Education*, vol. 26, no. 3, pp. 303–321, 2017.
- [70] M. Bond, V. I. Marín, C. Dolch, and et al, “Digital transformation in German higher education: student and teacher perceptions and usage of digital media”, *International Journal of Education Technology in Higher Education*, vol. 15, no. 48, 2018.
- [71] H. J. Kim, A. J. Hong, and H. Song, “The roles of academic engagement and digital readiness in students’ achievements in university e-learning environments”, *International Journal of Education Technology in Higher Education*, vol. 16, no. 21, 2019.
- [72] C. K. Looi, S. W. Chan, and L. Wu, “Crisis and Opportunity: Transforming Teachers From Curriculum Deliverers to Designers of Learning”. In: Burgos D., Tlili A., Tabacco A. (eds) Radical Solutions for Education in a Crisis Context. *Lecture Notes in Educational Technology*. Springer, Singapore, 2021.
- [73] J. Sinclair, and A. M. Aho, “Experts on super innovators: understanding staff adoption of learning management systems”, *Higher Education Research and Development*, vol. 37, no. 1, pp. 1-15, 2018.
- [74] R. Donnelly, “Blended problem-based learning in Higher Education: the intersection of social learning and technology”, *Psychosociological Issues in Human Resource Management*, vol. 5, no. 2, pp. 25–50, 2017.
- [75] S. Lillejord, K. Børte, K. Nesje, and E. Ruud, “Learning and teaching with technology in Higher Education- a systematic review”, Oslo: Knowledge Centre for Education, 2018.



- [76] A. B. Scholkmann, “Resistance to (Digital) Change: Individual, Systemic and Learning- Related Perspectives”. *Digital Transformation of Learning Organizations*, Chapter 13, pp. 219-236, 2021.
- [77] M. Chipembele, and K. J. Bwalya, “Assessing e-readiness of the Copperbelt University, Zambia: case study”, *International Journal of Information and Learning Technology*, vol. 33, no. 5, pp. 315-332, 2016.
- [78] M. A. A. Rehman and R. L. Shrivastava, “An innovative approach to evaluate Green Supply Chain Management (GSCM) drivers by using Interpretive Structural Modeling (ISM)”, *International Journal of Innovation and Technology Management*, vol. 8, pp. 315-336, 2011.
- [79] R. S. Quiñones, J. A. A. Caladcad, *et al*, “Priority challenges of university technology transfer with Interpretative Structural Modeling and MICMAC analysis”, *International Journal of Innovation and Technology Management*, vol. 17, 2020.
- [80] R. Attri, N. Dev, and V. Sharma, “Interpretive structural modelling (ISM) approach: an overview”, *Res. J. Manag. Sci*, 2013.
- [81] A. Mandal and S. Deshmukh, “Vendor selection using interpretive structural modeling (ISM)”, *International Journal of Operations and Production Management*, vol. 14, pp. 52–59, 1994.
- [82] T. Mohammad, and C. P. Shafeeq, “Barriers to call practices in an efl context: a case study of preparatory year English courses”, *International Journal of Distributed and Parallel Systems*, vol. 7, pp. 1-11, 2016.
- [83] R. Likert, "A Technique for the Measurement of Attitudes", *Archives of Psychology*, vol. 140, pp. 1–55, 1932.
- [84] D. Campbell, “Task complexity: A review and analysis’, *Academy of Management Review*, Vol. 13 No. 1, pp. 40-52, 1988.
- [85] Kemenperin, “Making Indonesia 4.0”, 2018. [Online]. Available: [https://kemenperin.go.id/download/18280/Making-Indonesia-4.0---Bahan-AT-Kearney-Sosialisasi-tentang-Industry-4.0-\(update\)](https://kemenperin.go.id/download/18280/Making-Indonesia-4.0---Bahan-AT-Kearney-Sosialisasi-tentang-Industry-4.0-(update)).
- [86] PDDikti, “Pangkalan Data Pendidikan Tinggi”, 2019. [Online]. Available: https://forlap.ristekdikti.go.id/prodi_



- [87] Ristekdikti, "PJJ, E-learning & Blended Learning", 2019. [Online]. Available: <http://bppsdmk.kemkes.go.id/pusdiksdmk/wp-content/uploads/2019/06/PJJ-E-Learning-Blended-Learning.pdf>.
- [88] Ristekdikti, "Penyelenggaran Pendidikan Jarak Jauh Pada Pendidikan Tinggi", 2012. [Online]. Available: <https://kelembagaan.ristekdikti.go.id/wp-content/uploads/2016/11/permendikbud24tahun2012.pdf>.
- [89] Ristekdikti, "Pembukaan Program Studi Pendidikan Jarak Jauh di Perguruan Tinggi", 2016. [Online]. Available: http://lldikti3.ristekdikti.go.id/v2/wp-content/uploads/Pedoman_PJJ_2016.pdf.
- [90] J. Allen, N. L. Jimmieson, P. Bordia, and B. E. Irmer, "Uncertainty during Organizational Change: Managing Perceptions through Communication", *Journal of Change Management*, vol. 7, no. 2, pp.187–210, 2007.
- [91] A. Gronberg, "Digital transformation in Higher Education", Hoonuit, 2017. [Online]. Available: <https://www.hoonuit.com/blog/digital-transformation-in-higher-education>.
- [92] M. K. Kaushik and D. Verma, "Determinants of digital learning acceptance behavior: A systematic review of applied theories and implications for higher education", *Journal of Applied Research in Higher Education*, 2019.
- [93] UCISA, "Technology enhanced learning surveys", University of Oxford, 2018. [Online]. Available: <https://www.ucisa.ac.uk/tel>.
- [94] T. Karvonen, H. Sharp, and L. Barroca, "Enterprise Agility: Why Is Transformation so Hard?", *Lecture Notes in Business Information Processing*, vol. 314, 2018.
- [95] X.Y. Mei, E. Aas, and M. Medgard, "Teachers' use of digital learning tool for teaching in higher education: Exploring teaching practice and sharing culture", *Journal of Applied Research in Higher Education*, vol. 11, no. 3, pp. 522-537, 2019.
- [96] R. Jamaludin, E. McKAY, and S. Ledger, "Are we ready for Education 4.0 within ASEAN higher education institutions? Thriving for knowledge, industry and humanity in a dynamic higher education ecosystem?", *Journal of Applied Research in Higher Education*, vol. 49, pp.1–13, 2020.
- [97] R. Walker, J. Voce, and M. Jenkins, "Charting the development of technology-enhanced learning developments across the UK higher education sector: a longitudinal perspective", *Interactive Learn. Environ.*, vol. 24, no. 3, pp. 438–455, 2016.



- [98] HochschulforumDigitalisierung, “20 theses in the digitalisation of Higher Education”, 2016. [Online]. Available: <https://hochschulforumdigitalisierung.de/en/20-theses-digitalisation-higher-education>.
- [99] A. Deshpande, “How to bring digital transformation to education”, Forbes, 2018. [Online]. Available: <https://www.forbes.com/sites/forbestechcouncil/2018/07/03/how-to-bring-digital-transformation-to-education/#585d62735036>.