

Mostafayi, Babak; Emari, Hossein; Beigzadeh, Yousef; Beikzad, Jafar (2024). Developing Digital Transformation Strategies in Universities: University of Tabriz Case Study. *Journal of Knowledge-Research Studies*, 3 (2): 31-52.

DOI: 10.22034/jkrs.2024.61570.1083

URL: https://jkrs.tabrizu.ac.ir/article_18386.html

©The Author(s)

Publisher: University of Tabriz

The paper is an open access and licensed under the Creative Commons CC BY NC license.



Developing Digital Transformation Strategies in Universities: University of Tabriz Case Study

Babak Mostafayi¹, Hossein Emari², Yousef Beigzadeh³, Jafar Beikzad⁴

Received: May, 8, 2024; Revised: August, 30, 2024

Accepted: August, 30, 2024; Published: September, 1, 2024

Abstract

Purpose: This research aims to investigate the digital transformation strategies implemented at Tabriz University in response to the changing landscape of global education influenced by technological advancements.

Methodology: A qualitative approach with an interpretive paradigm was utilized for this study. Data was analyzed using thematic analysis based on semi-structured interviews with seventeen professors, IT experts, and specialists in virtual education and new technologies, chosen purposefully for their expertise. Validation of the research model was conducted through external review and pluralism strategies.

Findings: The study identified key digital transformation strategies at the university, including recognition of digital education needs, targeting evolutionary development of education and research, defining digital transformation tools such as cloud computing and artificial intelligence, and creating value for the university through program management and process integration.

Conclusion: The results highlight the importance of digital transformation as a dynamic strategy requiring technical, process, and cultural changes for effective implementation and advancement in education and research.

Value: This research contributes valuable insights into developing digital transformation strategies for universities, specifically in enhancing education and research practices within the context of technological advancements.

Key Words: *Digital University, Artificial Intelligence, Internet of Things, Metadata, Cloud Computing*

1. PhD student in public administration, Islamic Azad University, Bonab branch, Bonab, Iran.

2. Assistant Professor, Department of Public Administration, Islamic Azad University, Bonab Branch, Bonab, Iran (Corresponding Author) hossein.emari@iau.ac.ir

3. Assistant Professor, Department of Public Administration, Islamic Azad University, Bonab Branch, Bonab, Iran

4. Associate Professor, Department of Public Administration, Islamic Azad University, Bonab Branch, Bonab, Iran

Extended Abstract

Introduction: The digital revolution has had a significant impact on the primary educational process, leading universities to seek essential stimuli to benefit from this transformation and stay competitive in the ever-evolving landscape of higher education. The changes brought about by digital technology include shifts in digital behavior, work structures, global mobility, continuous learning, and the removal of borders. Kurdish emphasized the importance of embracing new approaches in higher education and utilizing new technologies in order to adapt to the changing environment. These changes have also altered the dynamics of social-individual relationships within universities, leading to a reconfiguration of power dynamics and hierarchies between professors and students. To maintain a relatively stable position in this rapidly changing environment, universities must be prepared to embrace impactful changes and integrate critical trends as part of their digital transformation strategy. The digital revolution has challenged universities to rethink their approach to gaining a competitive advantage, requiring an analysis of the strategic elements of digital transformation and the driving forces behind it. This research aims to develop digital transformation strategies for Tabriz University, with a focus on answering the question of how universities can leverage digital transformation to gain a competitive edge in the higher education industry.

Methodology: This research takes a developmental approach and utilizes a qualitative method to collect and analyze data. The inductive theme analysis method is used to identify digital transformation strategies at Tabriz University. The study population consists of 21 professors and experts in computer and information technology management, virtual education, and new technologies, specifically in the context of the Covid-19 pandemic. Primary and secondary coding techniques are used to analyze the interview data, and the reliability of the research is confirmed through a retest reliability method.

Findings: Through theme analysis, the study identifies three overarching themes and sixteen organizing themes related to digital transformation strategies at Tabriz University. These themes include recognizing the needs of a digital university, targeting learning and evolutionary development of education and research, defining digital transformation tools, and creating value for the university. The findings highlight the importance of adapting to changing educational standards, embracing virtual learning, enhancing independent learning, and utilizing technologies such as cloud computing, artificial intelligence, metadata, and the Internet of Things to drive digital transformation efforts.



Journal of
Knowledge-Research Studies
(JKRS)

Vol 3

Issue 2

Serial Number 8

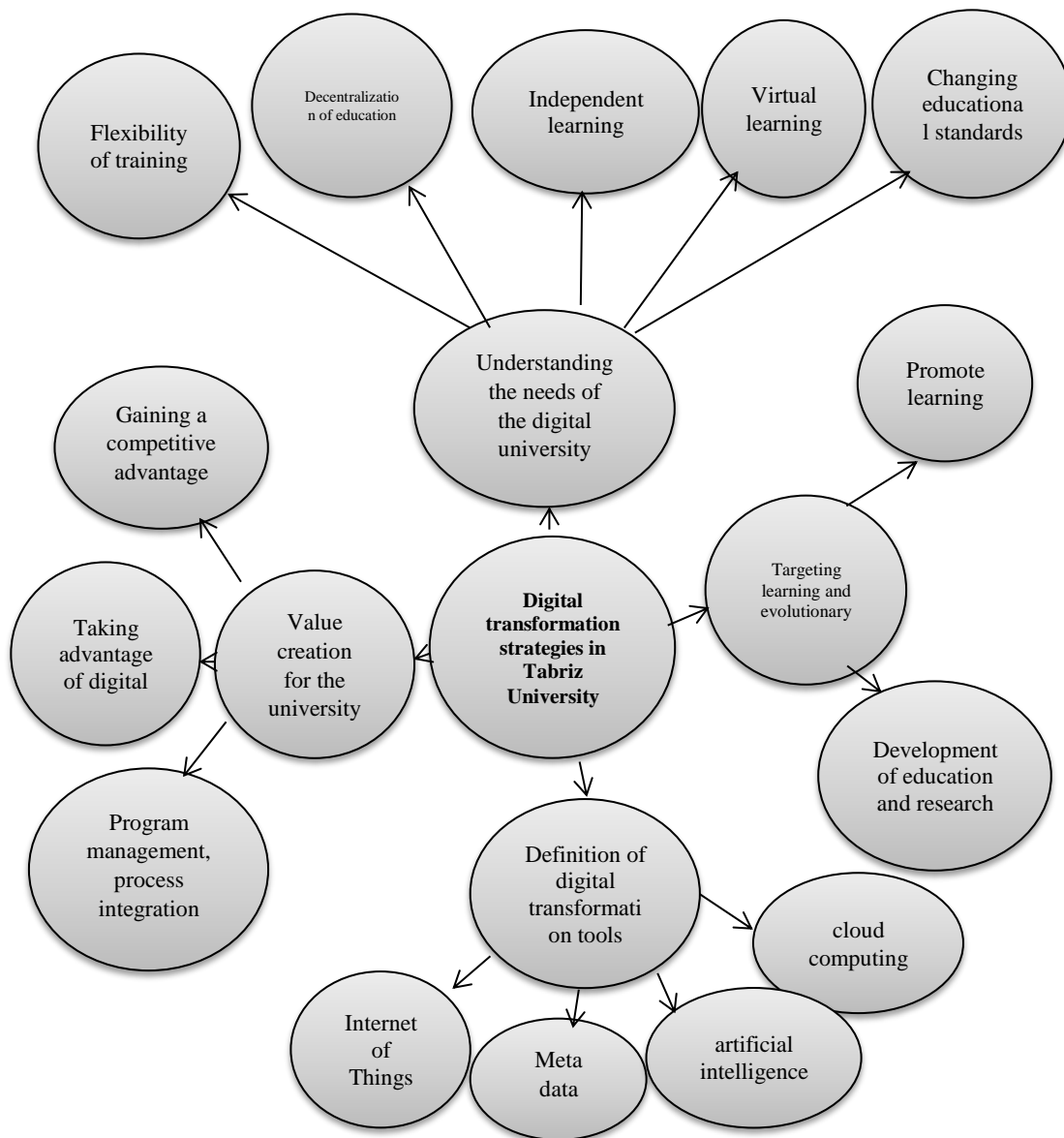


Figure 1. Digital transformation strategies in University of Tabriz



Conclusion: In conclusion, the research emphasizes the need for universities to leverage digital transformation strategies to enhance education and research practices in response to technological advancements. As universities increasingly rely on distance education and digital tools, students will depend heavily on the digitization of education driven by communication and information technology. The study underscores the significant implications of artificial intelligence for digital transformation, highlighting the importance of investing in technologies that can enhance pattern recognition and predictive capabilities. The emergence of online learning tools presents both challenges and opportunities for universities to strengthen their competitive advantages and adapt to the demands of globalization. Ultimately, universities must embrace technology as a means to design, deliver, and create digital learning experiences that align with their strategic goals and enhance their competitive position in the digital age.

Value: This research contributes valuable insights into developing digital transformation strategies for universities, emphasizing the need to embrace technology and innovation to enhance education and research practices. By recognizing the importance of digital transformation in higher education, universities can adapt to the changing landscape of the academic industry and leverage technology to drive strategic growth and competitiveness.

References

- Abad-Segura, E., González-Zamar, M. D., Infante-Moro, J. C., & Ruipérez García, G. (2020). Sustainable management of digital transformation in higher education: Global research trends. *Sustainability*, *12*(5), 78-89. [dx.doi.org/10.3390/su12052107](https://doi.org/10.3390/su12052107)
- Acuña, J. M. M., Hernández-Perlines, F., & Cisneros, M. A. I. (2024). Digital transformation and student satisfaction at the Autonomous University of Chile. *Journal of Management and Business Education*, *7*(2), 220-243. <https://doi.org/10.35564/jmbe.2024.0013>
- Adebesin, A. A., Afolayan, A. O., & Ogunyemi, A. A. (2021). Digital literacy and employability skills of Nigerian university students: A case study of Lagos State University. *Journal of Education and Practice*, *12*(1), 131-140. <http://dx.doi.org/10.51983/ajist-2023.13.2.3587>
- Agina-Obu, R., & Okwu, E. (2023). Impact of Digital Literacy on University Students' Use of Digital Resources in Nigeria. *Asian Journal of Information Science and Technology*, *13*(2), 60-65. <https://doi.org/10.51983/ajist-2023.13.2.3587>
- Ali Asghari Jeloudar, H., Razavi, S. A. A., & Tahmasebi Limooni, S. (2024). Development and Validation of Digital Transformation Development Tool in Libraries of Medical Sciences Universities. *Journal of Mazandaran University of Medical Sciences*, *34*(235), 99-112. [In Persian]
- Amini, M., Hassanzadeh, M., & Morshedi, M. (2022). An Improved Methodology for Digital Transformation of Business Model. *Sciences and Techniques of Information Management*, *8*(1), 393-426. doi: 10.22091/stim.2021.7379.1654 [In Persian]
- Anita, A., Ariyandy, A., Aras, D., Rachmawaty, R., Arsyad, A., & Sinrang, A. W. (2022). A Retrospective Study: Correlation between the Provision of Conditioning Training and Changes in Flexibility, Agility and Performance in Sepak Takraw Athletes during the Covid 19 Pandemic. *Teikyo Medical Journal*, *45*(2), 5625-5632.
- Araash, H., & khabare, K. (2021). Digital University is a platform for digital learning in the Corona and post-Corona eras. *Rahyaft*, *30*(4), 1-15. doi: 10.22034/rahyaft.2021.10435.1143 [In Persian]
- Arifien, Y., Susdiyanti, T., & Maslahat, M. (2022). Implementation of Independent Learning in Independent Campus by Distance Learning at Private Universities in



Journal of
Knowledge-Research Studies
(JKRS)

Vol 3

Issue 2

Serial Number 8

- Bogor During the Covid 19 Pandemic. *Advances in Social Sciences Research Journal*, 9(2),22-31. <http://dx.doi.org/10.14738/assrj.92.11484>
- Avdoshin, S., Pesotskaya, E., & Chernov, A. (2019). Superbook concept for a digital university. In *CEUR Workshop Proceedings* (Vol. 2514, pp. 248-258).
- Berdykulova, G., Ipalakova, M., Kamysbayev, M., & Daineko, Y. (2020, September). Towards digital university: Experience of kazakhstan. In *Proceedings of the 6th International Conference on Engineering & MIS 2020* (pp. 1-7).
- Bolboli, S. (2019). Presenting a model in order to evaluate the effective factors on expanding the teaching of perceived agility (The Case of High School Students of Isfahan City). 16(2),85-93. doi: 10.30486/jsre.2019.665146 [In Persian]
- Charmaz, K., & Belgrave, L. L. (2007). Grounded theory. The Blackwell encyclopedia of sociology. Wiley Online Library.
- Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications.
- Fernández, A., Llorens, F., Céspedes, J. & Rubio, T. (2021) Modelo de Universidad Digital. Publicaciones de la Universidad de Alicante.
- Fernández, A., Llorens, L. F., Molina, C. R., & Claver, J.M. (2023, June14 – 16). *Digital maturity evolution of Spanish universities*[Presentation of speech]. Vigo (Spain).
- Goodfellow, R., & Lea, M. R. (2013). *Literacy in the digital university*. Taylor & Francis.
- Hancock, S. (2019). A future in the knowledge economy? Analysing the career strategies of doctoral scientists through the principles of game theory. *Higher Education*, 78(1), 33-49. DOI:10.1007/s10734-018-0329-z
- Hassanzadeh, M. (2023). Virtual transformation: an operational model and requirments. *Sciences and Techniques of Information Management*, 9(1), 7-16. doi: 10.22091/stim.2023.2453 [In Persian]
- Jafari, E., Yazdi, M. T., & Hamedani, S. S. (2021). Reviewing the Studies on Digital University in the Corona and Post-Corona Pandemics. *Clinical Excellence*, 11(3), 125-137. [In Persian]
- Jalali, P., salami, M., Neinavaie, M., & Irannejad, P. (2024). Validation of the leadership model of digital transformation in the education of Alborz University of Medical Sciences. *Human Resources Excellence*, 2(5), 78-102. [In Persian]
- Jones, C. (2013). The digital university: a concept in need of definition. In *Literacy in the digital university* (pp. 162-172). Routledge.
- Julita, J., Helmi, S., Gunarto, M., & Sartika, D. (2024). The Effect of Digital Transformation on University Brand Image with Ownership as a Moderating Variable. *International Journal of Finance Research*, 5(1), 69-87. <http://dx.doi.org/10.47747/ijfr.v5i1.1695>
- Kane, G. C. (2017). MetLife centers its strategy on digital transformation. *MIT Sloan Management Review*, 59(1),88-96.
- Kazemi Saraskanrood, Z., & Safari, M. (2024). Designing a Marketing Process Model Based on Artificial Intelligence: Application of Systematic Review Strategy. *Commercial Surveys*, 21(123), 109-126. doi: 10.22034/bs.2023.1999484.2765 [In Persian]
- Khalid, A., Ram, B. R., Soliman, M., Ali, A. J., Khaleel, M., Islam, Sh. (2018). Promising digital university: a pivotal need for higher education transformation. *Management in Education*, 12(3), 55-65. <https://doi.org/10.1504/IJMIE.2018.092868>.
- Khurniawan, A. W., & Supriadi, D. (2024). The impact of digital leadership on digital transformation in university organizations: an analysis of students' views. *Perspectives of science and education*, 67(1),677-690. DOI: 10.32744/pse.2024.1.38
- Khurniawan, A. W., & Irmawaty, D. S. (2024). The impact of digital leadership on digital transformation in university organizations: an analysis of students' views. *Education*, 67(1), 677-690.<http://dx.doi.org/10.32744/pse.2024.1.38>
- Klug, W. E. (2014). *The Determinants of Cloud Computing Adoption by Colleges and Universities* [Master's thesis, Northcentral University]. ProQuest.



Journal of
Knowledge-Research Studies
(JKRS)

Vol 3

Issue 2

Serial Number 8

- <https://www.proquest.com/openview/3595d55851ebefcf221ed238e33f19ad/1.pdf?pq-origsite=gscholar&cbl=18750&diss=y>
- Marrero-Sánchez, O., & Vergara-Romero, A. (2023). Digital competence of the university student. A systematic and bibliographic update. *Amazonia Investiga*, 12(67), 9-18. <https://doi.org/10.34069/AI/2023.67.07.1>
- Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. *Business and Information Systems Engineering*, 57(5), 339–343. <http://dx.doi.org/10.1007/s12599-015-0401-5>
- Militaru, G., Niculescu, C., & Teaha, C. (2013). Critical success factors for cloud computing adoption in higher education institutions: A theoretical and empirical investigation. *International Conference on Management and Industrial Engineering*, 6(1), 213–220.
- Moghimi Bidhendi, D. (2022). The effectiveness of virtual education on the learning of middle school students in the Corona era. *JNIP*, 13 (17),1-17. [In Persian]
- Moradi, A., & Kordlo, M. (2019). Phenomenology of ethical bottlenecks in e-learning in iranian virtual higher education. *Information and Communication Technology in Educational Sciences*, 9(36), 61-76. [In Persian]
- Nicola, C. B., & Dalessio, D. (2019). Artificial intelligence and the impact on business curricula. *Academy of Business Research Journal*, 3, 30-53.
- Panahzadeh Khanamiri, A., Sohail Dar, S., Nejadhaji A., & Irani, F. (2023, November 30). *Digital literacy and its role in the development of digital entrepreneurship (case study: art universities in Tabriz)*. Tehran. <https://civilica.com/doc/1861577/> [In Persian]
- Portillo, J., Garay, U., Tejada, E., & Bilbao, N. (2020). Self-perception of the digital competence of educators during the COVID-19 pandemic: A cross-analysis of different educational stages. *Sustainability*, 12(23), 10128. <https://doi.org/10.3390/su122310128>
- Powell, L., & McGuigan, N. (2021). Teaching, virtually: A critical reflection. *Accounting Research Journal*, 34(3), 335-344. doi: 10.1108/ARJ-09-2020-0307 .
- Raju, M. S., & Devarani, L. (2023). Challenges Faced and Coping Strategies Adopted by Agricultural Students in India During the COVID-19 Pandemic. *Journal of Community Mobilization and Sustainable Development*, 18(3), 741-749. <http://dx.doi.org/10.5958/2231-6736.2023.00005.4>
- Ramachandran, N., Sivaprakasam, P., Thangamani, G., & Anand, G. (2014). Selecting a suitable cloud computing technology deployment model for an academic institute: A case study. *Campus-Wide Information Systems*, 31(5), 319-345. <https://doi.org/10.1108/CWIS-09-2014-0018>
- Rosin, A. F., Proksch, D., Stubner, S., & Pinkwart, A. (2020). Digital new ventures: Assessing the benefits of digitalization in entrepreneurship. *Journal of Small Business Strategy (archive only)*, 30(2), 59-71.
- Rouse, M. (2019). *What is AI (artificial intelligence)?* - Definition from WhatIs.com. [online] Search. Enterprise AI. Available at: <https://search.hentehente.com/definition/AI-Artificial-Intelligen>.
- Sarmadi, M. R., Zarrabian, F., seif, M., & fatemiaan, A. (2019). A Study of the Epistemological Foundations of Education Based on Virtual Social Networks. *Educational and Scholastic studies*, 8(1), 155-180. Dor: 20.1001.1.2423494.1398.8.1.7.8
- Seifollahi Onar, N., & akbari arbatan, G. (1402). Presentation a model for business sustainability based on digital skills in the Corona pandemic. *Journal of International Business Administration*, 6(4), 179-198. doi: 10.22034/jiba.2023.56173.2038 [In Persian]
- Shaughnessy, H. (2018). Creating digital transformation: Strategies and steps. *Strategy & Leadership*, 46(2), 19-25. <https://doi.org/10.1108/SL-12-2017-0126>



Journal of
Knowledge-Research Studies
(JKRS)

Vol 3

Issue 2

Serial Number 8

- Siemens, G., Gašević, D., & Dawson, S. (2015). *Preparing for the digital university: A review of the history and current state of distance, blended and online learning*. <https://linkresearchlab.org/PreparingDigitalUniversity.pdf>
- Sultan, N. (2010). Cloud computing for education: A new dawn?. *International Journal of Information Management*, 30(2), 109-116. <http://dx.doi.org/10.1016/j.ijinfomgt.2009.09.004>
- Totty, M. (2019). *The Worlds That AI Might Create*. Wall Street Journal. <https://www.wsj.com/articles/the-worlds-that-ai-might-create-11571018700?mod=ig-artificial-inteligen-cerep-ortoc-tober-2019>. Accessed 7 Sep. 2021.
- Venugopal, R., & Mamatha, V. (2023). Impact Of Artificial Intelligence (AI) On Teaching And Learning In India's Higher Education Sector. *IOSR Journal of Research & Method in Education (IOSRJRME)*, 13(5), 1-6. DOI:10.9790/7388-1305020106
- Villegas-Ch, W., Palacios-Pacheco, X., & Luján-Mora, S. (2019). Management of educative data in university students with the use of big data techniques. *RISTI - Revista Iberica De Sistemas e Tecnologias De Informacao*, 19(2), 227–238.
- Viloria, A., Lezama, O. B. P., & Mercado-Caruzo, N. (2020). Factors that describe the use of digital devices in Latin American universities. *Procedia computer science*, 175, 127-134. <https://doi.org/10.1016/j.procs.2020.07.021>
- Zhang, J. (2021). Application of big data collection-analysis-visualization in the teaching process of colleges and universities under the background of the epidemic. *Journal of Physics: Conference Series*, 1800(1), 1–8. DOI 10.1088/1742-6596/1800/1/012009
- Zarubina, V., Zarubin, M., Yessenkulova, Z., Salimbayeva, R., & Satbaeva, G. (2024). Digital transformation of the promotion of educational services of Kazakhstani universities. *Journal of Innovation and Entrepreneurship*, 13(1), 3-23. <http://dx.doi.org/10.1186/s13731-023-00355-3>



Journal of
Knowledge-Research Studies
(JKRS)

Vol 3

Issue 2

Serial Number 8