

Designing Digital University Conceptual Framework; Grounded Theory Approach

Ashraf. Rahimian^{1*} 

¹ Assistant Professor, Department of Management, Payam Noor University, Tehran, Iran

* Corresponding author email address: a.rahimian@pnu.ac.ir

Article Info

Article type:

Original Research

How to cite this article:

Rahimian, A. (2023). Designing Digital University Conceptual Framework; Grounded Theory Approach. *Quarterly Journal of Research and Planning in Higher Education*, 29(2), 69-86.



© 2023 the authors. Published by Institute for Research and Planning in Higher Education (IRPHE), Tehran, Iran. This is an open access article under the terms of the Creative Commons Attribution 4.0 International (CC BY 4.0) License.

ABSTRACT

The present article seeks to identify the characteristics of the digital university using grounded theory. Snowball sampling was performed and 19 experts in the field of university and digital transformation were interviewed. The result of the interviews was a collection of basic topics that were collected during the open coding process and categories were extracted from them. Then, in the central coding stage, the link between the categories under the following headings: causal conditions, contextual factors, intervening conditions, phenomenon-oriented, strategies and consequences of digital university was determined. Then the cases were written in the selective coding stage. The causal conditions affecting the digital university were divided into two categories. Factors within the university: the need to rethink the mission of the university, the need to change teaching and research approaches, the cost and bureaucracy of education and the need to use new educational opportunities and factors outside the university: demographic challenges, the need to identify and meet scientific needs and job for society. Such are the policy and management strategies of research. In policy strategies, policy of education, hard and soft technologies, digital culture, finance and management and data preservation and educational equality are suggested, and in management strategies (executive), assessing the level of digital maturity of the university, providing infrastructure in humanities, leadership, economics and technology, and review of the education system process and definition of new processes are suggested.

Keywords: Digital university, digital transformation, foundational data theory.

Introduction

Technology is a set of techniques, skills, methods and processes used to create and manufacture goods and provide services or achieve goals such as scientific research. Digital technologies can be divided into two categories: maintenance technologies and transformational technologies. Maintenance technologies are technologies that, if used in an organization, do not lead to a competitive advantage, but their absence can disrupt the day-to-day operations of the organization (such as the Internet). But transformational technologies are those

technologies whose absence does not necessarily impair the performance of an organization, but whose presence can lead to a competitive advantage (such as artificial intelligence and the Internet of Things). The development of digital technology at an unprecedented rate has led to fundamental changes in higher education as well as in society. For this reason, the International Association of Universities (IAU) has made technology in higher education one of the top priorities for discussion and exchange of higher education leaders and policymakers in this field to address its challenges and opportunities (Jensen, 2019: 5). Some of the changes resulting from digital technology in the education system are as follows: from "teacher-centered" to "learner-centered"; From "classroom-based teaching" to "learning everywhere and all the time"; From "compulsory courses" to "completely individual learning"; From "consumer group" to "growing producer group". In the near future, learning will become completely "individual". Students learn whatever they like whenever they want. Many existing barriers to learning will be removed. As a result of these changes, significant changes will occur in society (Habibi Fahim, 2020: 33). Digital technology enriches learning in a variety of ways and offers new learning opportunities that should be accessible to all. This access to information provides extensive resources. Digital transformation has enormous and largely untapped potential for improving education (Abdukhidov et al., 2021).

Therefore, digitalization is a key strategic issue. However, many companies face fundamental challenges in developing their digital strategy (Lipsmire et al., 2020). On the other hand, the education system is increasingly facing the challenge of how to retrain people and how to change their direction to new professions needed in society as well as the digital economy because it has not fully exploited the benefits of digital transformation and is necessary. Is to redefine and reorganize itself in accordance with the digital age. Realizing this, universities have turned to digital technologies both for higher productivity and to prepare skilled graduates for the digital age. It should be noted that Digital University is not an electronic or distance university, but a digital university, a university that based on digital technologies, has transformed its management and learning system with an ecosystem approach and has achieved excellent performance by creating an attractive experience for its stakeholders (Shami Zanjani et al., 2020).

One of the most important and relevant topics is digital economics. Digital economy is the economic activity that takes place daily with billions of online connections between citizens, organizations, data and devices. Although the digital economy is often examined from a business perspective, it has a direct and profound effect on education (Abdokhidov, quoted in Abdikayev, 2021). In the past, the digital economy grew by only 2% per year, but now it is growing by about 10% per year. New jobs require mastery of digital skills, and the workforce must have these skills to turn a job into a profession. According to Ryff (president of the Massachusetts Institute of Technology), the relative lack of people ready for such jobs creates a bottleneck in countries' economic growth. Therefore, all educational pathways from internship to online education and combination education to the issuance of skills certificates should be re-examined (Matin, 2021: 54). Digitalisation affects all sectors of the economy and existing companies need to make fundamental changes. The university, as a public institution, needs to create a new knowledge, language and discourse that re-evaluates the concept of "public" and "institution" in the digital global economy, which is characterized by coherence, interculturalism and internationalism. Given the importance of digitalization of society and its impact on various sectors such as economics and the role of digital university in it, what are the characteristics of digital university, what are the reasons and necessity of its creation, what are the factors affecting it, what strategies to achieve it exists and what are the consequences of its creation? In this research, an attempt has been made to design and present a model of a digital university in Iran. Therefore, the most important goal, or in other words, the main goal of research, is to develop and present a conceptual model for a digital university in Iran. In order to achieve the mentioned main goal, the following subsidiary goals have been compiled:



1. Identifying the central category of digital university in Iran;
2. Identifying the causal factors affecting the establishment of a digital university in Iran;
3. Identifying the contextual factors of the digital university in Iran;
4. Identifying interfering factors in digital university in Iran;
5. Identifying strategies for achieving a digital university in Iran;
6. Identifying the results and consequences of establishing a digital university in Iran

Methodology

In the present study, the Strauss-Corbin approach has been used because it has a systematic method for data analysis. The method of data collection in this study was in-depth semi-standard or semi-structured interviews with experts. The statistical population in this study includes digital transformation experts and faculty members familiar with digital university and technology and higher education. For sampling, purposeful sampling design and reference technique of chains (snowball) have been used. In this way, first an initial group was selected for the interview and then the next groups were introduced for the interview by the same group, and sampling continued until a new idea emerged with the continuation of sampling, and the so-called research. It has reached theoretical saturation and adequacy. It should be noted that the theoretical saturation of the fifteenth sample was formed to some extent, but the research process continued until the nineteenth person. The time domain of this research was 2020 and 2021. In terms of spatial territory in Iran.

Findings

For the selective coding process, five theoretical theorems based on a paradigm model are presented. Theorem 1: In-university factors including the cost and bureaucracy of higher education, reducing the efficiency of universities, the need to use new opportunities for higher education, the need to change teaching and research approaches, the need to rethink the university mission and out-of-university factors including challenges Demographics, the need to identify and meet the scientific and professional needs of society, the need to implement upstream documents, the need to provide skilled manpower for the digital age are the causal conditions for the formation of a digital university in Iran.

Theorem 2: Macro factors including the emergence of new technologies, enormous environmental changes, digital economy, competitiveness of universities, reducing university budgets and micro factors including increasing information and digital literacy, the need to link education with skills, data-driven and experience-oriented conditions are the basis for the formation of a digital university in Iran.

Theorem 3: The existence and maturity of human, knowledge and financial resources of the internal interventionist university and the appropriate scientific and institutional environment and the Ministry of Science facilitate the foreign interventionist formation of the digital university in Iran.

Theorem 4: Digital university formation strategies include policy (digital curriculum policy, digital education quality policy, soft and hard technology policy and support policy, digital culture policy, educational equality policy, financial policy, internationalization course policy Educational and policy management and data retention and use of big data) and executive (assessing the level of digital maturity of the university, providing human, leadership, economic and technological infrastructure and reviewing the process of the education system and defining new processes).

Theorem 5: The formation of a digital university inside and outside the university has several consequences. Internal consequences of digital university include university adaptation to the job needs of society, clarification



of university relationship with stakeholders, development of university and higher education system, creation of new teacher-student role, possibility of unlimited student admission from all over the world, possibility of paying attention to students' individual differences, appropriate storage of knowledge, reducing the cost of training and improving the quality of training using data. The external implications of the Digital University include the possibility of attracting cooperation from all over the world, reducing economic and geographical inequality, increasing social equality, scientific diplomacy, and the generalization of education.

Discussion

Digital University addresses complex ontological, epistemological, ethical, and identity issues. These issues arise from digital technologies, but are not determined by these technologies. Digital technologies accelerate the transmission, storage and retrieval of information and change the way humans read, write and observe. The digital age is dialectically intertwined with the nature of human existence, knowledge, action and institutions. Digital systems are transforming knowledge organization, and higher education technology policies are changing the mindsets of students and faculty.

Since in our country, the role and position of the government in any of the fields is undeniable. Also, a suitable political and institutional environment can play a facilitating role in the formation of a digital university. The attitude of officials and decision makers towards the digital concept is considered as one of the most important intervention conditions. The capacity and human, managerial, technological and cultural infrastructure of the university are also considered as internal factors.

In previous studies, consequences such as increasing social equality (Abdokhidov et al., 2021), improving the quality of education (Arasteh & Khabazeh, 2020), improving science production using data (Jandrick and Peters, 2017), changing the role of teacher and student, etc. Afrini was mentioned in knowledge production (Peters, 2016), reduction of education costs (Kozina, 2020), but consequences such as university adaptation to the job needs of society, clarification of university relationship with stakeholders, university development and higher education system, possibility of unlimited student admission from all over the world, the appropriate store of knowledge and scientific diplomacy has been identified in this study, while it has been less addressed in previous literature and research. In order to digitize the university, it is necessary to redefine the mission of the university. Provide leadership, human, technical and economic infrastructure. Policy-making in the fields of education, technology, culture, etc.

Implementing digital technology in higher education institutions is not an easy task. This process in the early stages may cause problems that have negative consequences themselves. Future research can therefore focus on the implications of implementing digital technology at the university, such as lifestyle-changing educators, global networks, and cost-benefit analysis related to digital technology implementation.

References

- Abasi, A., Farasatkah, M., & Moazzami, M. (2023). Analyzing higher education accreditation results with an emphasis on internationalization of higher education. *Quarterly Journal of Research and Planning in Higher Education*, 27(4), 25-54. <https://doi.org/10.52547/IRPHE.27.4.25>
- Abdovakhidov, A. M., Mannapova, E. T., & Akhmetshin, E. M. (2021). Digital Development of Education and Universities: Global Challenges of the Digital Economy. *International Journal of Instruction*, 14(1), 743-760. <https://eric.ed.gov/?id=EJ1282222>
- Arasteh, H., & Khabare, K. (2021). Digital University is a platform for digital learning in the Corona and post-Corona eras. *Rahyaft*, 30(80), 1-15. <https://doi.org/10.22034/rahyaft.2021.10435.1143>

- Bernstein, A., & Raman, A. (2015). The great decoupling: An interview with erik brynjolfsson and andrew mcafee. *Harvard Business Review*, 93(6), 66-74. <https://hbr.org/2015/06/the-great-decoupling>
- Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative sociology*, 13(1), 3-21. <https://doi.org/10.1007/BF00988593>
- Danaeifard, H., & Ismaili, A. (2011). *Making the Theory of Organizational Indifference: Applying the Research Strategy of Data Foundation Theory in Practice*.
- Dehghanan, H., Afjahi, S. A., Soltani, M., & Javaheri, E. (2019). The Grounded Theory Model in the Talent Management Process. *Journal of Research in Human Resources Management*, 10(4), 185-217. https://hrmj.ihu.ac.ir/article_204316.html
- Fischer, M., Imgrund, F., Janiesch, C., & Winkelmann, A. (2020). Strategy archetypes for digital transformation: Defining meta objectives using business process management. *Information & Management*, 57(5), 103262. <https://doi.org/10.1016/j.im.2019.103262>
- Galina, K. (2020). The concept of a digital transformation of a traditional university to a “digital university”. *E-management*, 90. <https://doi.org/10.26425/2658-3445-2020-2-89-96>
- Habibi Fahim, H., & Frey, T. (2020). *The future of education; Eight educational trends for the future*.
- Haghgooyan, Z., Zarei Matin, H., Jandaghi, G., & Rahmati. (2015). Understanding the process of cheerfulness formation using data theory. *Quarterly Journal of Organizational Behavior Studies*, 4(2), 141-199. https://obs.sinaweb.net/article_14506.html
- Jensen, T. (2019). Higher education in the digital era. The current state of transformation around the world. *International Association of Universities, 2019*, 28-42. www.iau-aiu.net
- Johnston, B., MacNeill, S., & Smyth, K. (2019). *Conceptualising the digital university: The intersection of policy, pedagogy and practice*. Springer. <https://doi.org/10.1007/978-3-319-99160-3>
- Limani, Y., Hajrizi, E., Stapleton, L., & Retkoceri, M. (2019). Digital transformation readiness in higher education institutions (HEI): The case of Kosovo. *IFAC-PapersOnLine*, 52(25), 52-57. <https://doi.org/10.1016/j.ifacol.2019.12.445>
- Lipsmeier, A., Kühn, A., Joppen, R., & Dumitrescu, R. (2020). Process for the development of a digital strategy. *Procedia cirp*, 88, 173-178. <https://doi.org/10.1016/j.procir.2020.05.031>
- Mashayekh, F. (2020). *Pedagogy of science and art of teaching - learning from ancient times to the present (theory and application)*.
- Matin, A. (2021). *Science; Endless border*.
- Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government information quarterly*, 36(4), 101385. <https://doi.org/10.1016/j.giq.2019.06.002>
- Peters, M. A. (2016). Inside the global teaching machine: MOOCs, academic labour and the future of the university. *Learning and Teaching*, 9(2), 66-88. <https://doi.org/10.3167/latiss.2016.090204>
- Peters, M. A. (2019). Technological unemployment: Educating for the fourth industrial revolution. In *The Chinese dream: Educating the future* (pp. 99-107). Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9780429329135-10/technological-unemployment-michael-peters>
- Sedghi, J., Mahmoodi Khodaei, R., Iranzadeh, S., & Alavi Matin, Y. (2023). Designing a policy-making model in skill based education using a Grounded Theory approach. *Research and Planning in Higher Education*, 27(4), 111-141. <https://doi.org/10.52547/IRPHE.27.4.111>
- Shamizanjani, M., Nabi, F., & Irandoost, S. (2020). *Digital Captain*. Tehran: Ariana Ghalam.