Transformation of Higher Education Through Digital Leadership (Systematic Literature Review)

Pipin Sukandi
Universitas Widyatama, Indonesia
Correspondent: pipin.sukandi2@gmail.com

ABSTRACT: This research aims to explore the implementation of digital leadership in higher education and its impact on the digital transformation process in the management of higher education institutions. With the rapid development of digital technology, universities are challenged to adopt leadership practices that are aligned with the current digital era. This research uses a systematic literature review method. The results revealed that digital leadership involves the ability to lead digital change, facilitate virtual collaboration, utilize data analytics for decision making, and create a digital culture that is open to innovation. The main challenges faced are resistance to change, limited resources, and data security. Success factors include a clear vision, digital training for leaders and staff, adequate technology infrastructure, and active engagement of all stakeholders.

Keywords: Digital Leadership, Higher Education

INTRODUCTION

Human resources are an essential part of business operations. Companies usually have a vision and mission to achieve it. To carry out management activities properly, adequate human resources are needed. Human thinking that can be improved so as to achieve the desired quality of the company in terms of quantity and quality. Even though currently some human work has been replaced by technology, humans are still an important point in operating company activities (Ahlquist, 2020; Amaliyah, 2014; Rahman, 2013).

Employees run the wheels of business life. The speed of the wheels will rotate well if employees have high work motivation and are productive. Ultimately, this will have a positive impact on the company's performance and achievements. However, companies won't succeed if employees don't do what they have to do. This shows that employees are not passionate, tenacious, and immoral (Amirault, 2021; Balyer & Öz, 2018; Bass, 1985).

The success of a company depends on leadership, an important and strategic component in management (Brown et al., 2018; Crick, 2021; Dasgupta, 2019). To achieve the company's goals well, the leader is responsible for setting goals, planning, organizing, moving, and supervising all the resources that the company has (Beaudoin, 2015; Brodjonegoro, 2008).

Organizational leaders must be able to create a satisfying work environment for employees so that they can get employees who are not only able to work but also willing to work to achieve the company's goals. (Northouse, 2013) said leadership style is the way a person acts to influence others.

In the rapidly evolving digital era, universities are faced with the challenge of adapting and utilizing technology effectively in the educational, research, and operational processes of organizations (Tanjung et al., 2022; Waller et al., 2019; Wicaksana, 2016). Advances in information and communication technology (ICT) have significantly changed the landscape of higher education, requiring innovative and visionary leadership approaches to deal with these changes (Aan Komariah, 2010; Fernandez & Shaw, 2020; Howell et al., 2014).

Several previous studies that discussed similar matters, namely Digital Leadership in Higher Education: Purposeful Social Media in a Connected World written by Josie Ahlquist Publisher: Routledge Year: 2020 discussed how higher education leaders can leverage social media and digital technology to increase student engagement, build community, and encourage innovation. Ahlquist presents a framework for effective digital leadership, including practical strategies and case studies from various higher education institutions (David & Stanley, 2006; Jameson, 2013; Kaplan & Haenlein, 2016).

Digital Leadership for Transforming Higher Education Author: Sheninger, Eric C. Publisher: Journal of Higher Education Management Year: 2019 This article discusses the importance of digital leadership in transforming higher education. Sheninger outlined seven pillars of digital leadership that can help higher education institutions adapt to technological changes and meet the needs of students in the digital era. If you look at this for digital leadership, it can still be discussed with the addition or theme of other variables (Keller, 2018; Khan, 2021; Kurniawan, 2017; Yulk, 2015).

Digital leadership in higher education refers to the ability and leadership strategies to effectively utilize digital technologies in achieving organizational goals, improving the quality of education, and facilitating sustainable digital transformation (Langitan, 2012; Leader, 2009; Mahadee, 2020). College leaders are required to have a deep understanding of digital technologies, as well as the ability to integrate them into the decision-making process, curriculum development, learning, research, and other organizational operations (Miller et al., 2013; Muhith, 2017; Octaviana & Silalahi, 2016; Persichitte, 2013).

Some of the key challenges facing universities in the context of digital leadership include:
1. Develop adequate and affordable technology infrastructure to support digital learning, research, and administration.
2. Building an organizational culture that is open to digital change and innovation.
3. Improving digital literacy and technological competence for lecturers, staff, and students.
4. Developing innovative and interactive learning models by utilizing digital technology.

5. Facilitate collaboration and strategic partnerships with other institutions through digital platforms.
6. Ensure data security and privacy in the digital environment.
7. Facing global competition in attracting student interest and maintaining university competitiveness.

To meet these challenges, college leaders need to have a clear vision of digital transformation, the ability to develop effective digital strategies, and strong leadership skills in communicating and implementing change effectively. In addition, digital leadership must also pay attention to the aspects of ethics, security, and privacy in the use of digital technology (Alqahtani, 2023; Arpaci, 2019; Crompton & Burke, 2023; Govender et al., 2022; Paniagua et al., 2022).

When Covid 19 hit the whole world, including Indonesia, all wheels of the economy came to a halt, including the world of education. Many universities are not ready when the education system has to change due to this Covid disaster. After a long time, many universities implemented face-to-face learning, but when Covid hit, it had to change to online learning, many were not ready (Abamosa et al., 2020; Miranda et al., 2021; Porfírio et al., 2021; Quy et al., 2023; Said et al., 2014; Sutiah et al., n.d.).

Many organizations are unprepared to face change. The change in universities in dealing with Covid 19 at that time that had a great impact was the digital change. When an organization is able to carry out digital change, it does not matter when Covid hits (Ramanathan, 2022; Rof et al., 2020; Sanjani, 2019).

When this is left in an organization without the control of a leader, employees will carry out their duties at will. Likewise in a university, leadership is very important in motivating employees, in this case educators and education personnel. When they are motivated, they will work optimally and the wheels of the organization will run even beyond expectations (Schwab, 2012; Sheninger, 2019; Siswopranoto, 2022).

METHOD

The method used in this study is Systematic Literature Review using the Preferred Reposrting Items for Systematic Review and Meta-Analysis (PRISMA) guideline . Systematic Review has an important role because it can provide a synthesis of a particular area of knowledge, be able to see which future research priorities can be identified, answer questions that cannot be answered by individual studies, identify a problem in a study that should be corrected in future research and can generate or evaluate theories about how or why a phenomenon occurs (Spires et al., 2020; Sunder M. & V., 2022).

The data collection carried out in this study is sourced from scientific publications indexed in the Google Scholar and Scopus databases. The tools used to collect data must have two qualities, namely validity and consistency. According to (Juliandi, 2018)

The following are the stages in conducting a systematic literature review:

Stage 1 : Literature Review

The initial stage of disbursement is carried out using the publish or perish application by entering several keywords such as leadership, transformational, transactional, digital leadership, motivation and higher education. Some of the questions included are:

- What is the leadership of a college?
- What is transformational leadership in higher education?
- How is transactional leadership in higher education?
- How is digital leadership in higher education?
- How is the relationship between leadership style and lecturer motivation in higher education?

After that, the selection of criteria (inclusion and exclusion of articles) is carried out.

The inclusion and exclusion criteria are carried out to re-screen journal articles obtained from the Scopus database. The purpose of this inclusion and exclusion selection is that the article taken can really answer from the formulation of this problem and research.

The criteria for selecting inclusion and exclusion articles are as follows:

Inclusion Criteria:

1. IC1 is a quantitative research type article journal.
2. IC2 is an article journal that discusses questions in the formulation of the problem, namely the theory used and the indicators used, namely digital leadership
3. IC3 is an article journal that researches objects in the world of education.
4. IC 4 is a fulltext journal article

Exclusion Criteria:

1. EC1 is a qualitative research type article journal.
2. EC2 is a journal of articles that does not discuss the object of the world of education.
3. EC3 is a journal of articles that are not listed on fulltext.

Stage 2: Conduct a Review

In this stage, the review methodology begins with identification by entering several keywords as shown in table 1 below:

Table 1. Systematic Literature Review, String and Keyword Search

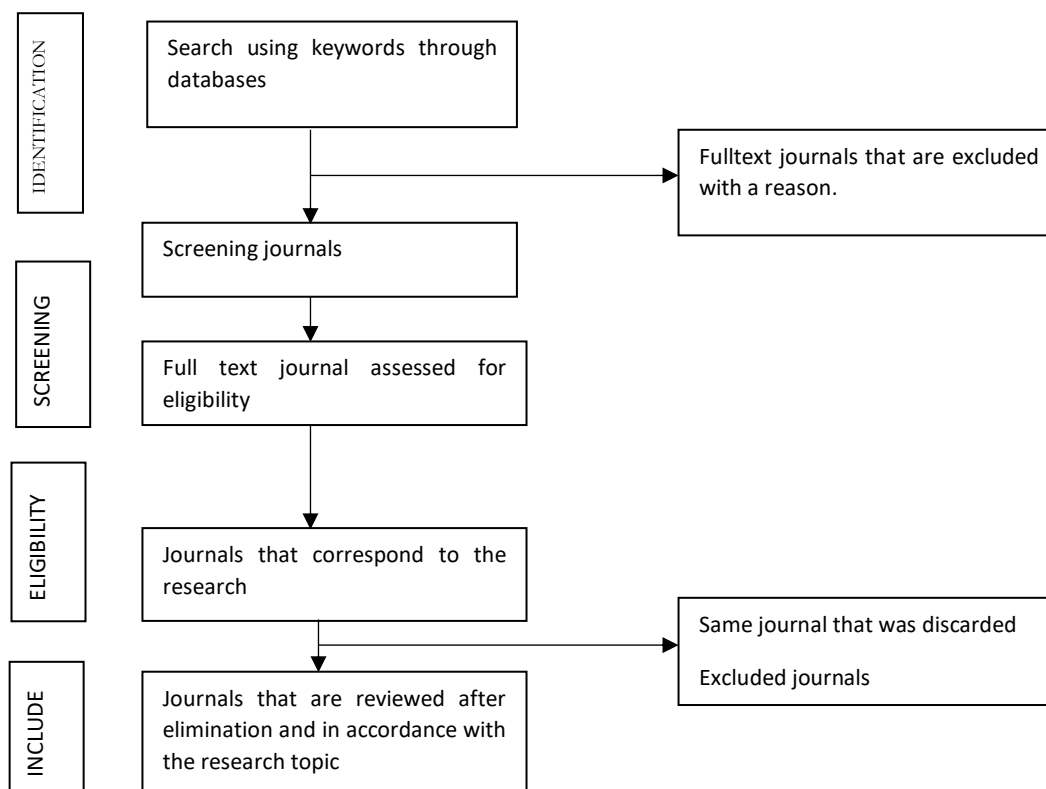| SYSTEMATIC LITERATURE REVIEW SEARCH STRINGS AND KEYWORDS	
Search String Number	**Keywords**
Search String 01	**Leadership**
Search String 1a	**Leadership Style**
Search String 1b	**Leadership In Higher Education**
Search String 1c	**Leadership at University**
Search String 02	**Digital Leadership (DL)**
Search String 2a	**DL in Higher Education**
Search String 2b	**DL at University**

Literature is selected based on search strings such as titles and abstracts. Screening based on inclusion and exclusion criteria is carried out to get the relevant ones. Citations and references from these articles are examined to determine their inclusions or exclusions. A total of 185 papers were identified in the initial search. These papers were then further refined in the review process.

In selecting articles on transformational, transactional and digital leadership as well as lecturer motivation. The first step is for the author to collect all articles, both national and international, related to the variables to be researched.

After being collected, it is sorted out which makes the object of research in the field of education, both schools and universities. After getting more cones, the author looks at the journals he publishes based on the categories Q1, Q2, Q3 or Q4 and from Sinta 1 to 4. After that, the author takes references that match the title of this study.

Data Extraction and Synthesis

The extraction process in this study is intended to select literature criteria that are in accordance with the formulation of the problem. In the literature extraction process, The Prisma Flow Diagram is used as follows:

Source : https://estech.shinyapps.io/prisma_flowdiagram/

Stage 3: Reporting and Dissemination

This section explains a summary of transformational, transactional and digital leadership leadership as well as motivation in higher education contained in several journals that have been filtered.

RESULT AND DISCUSSION

This research uses the help of the Publish or Perish and Vosviewer applications in combining existing research on digital leadership in higher education so that there is newness.
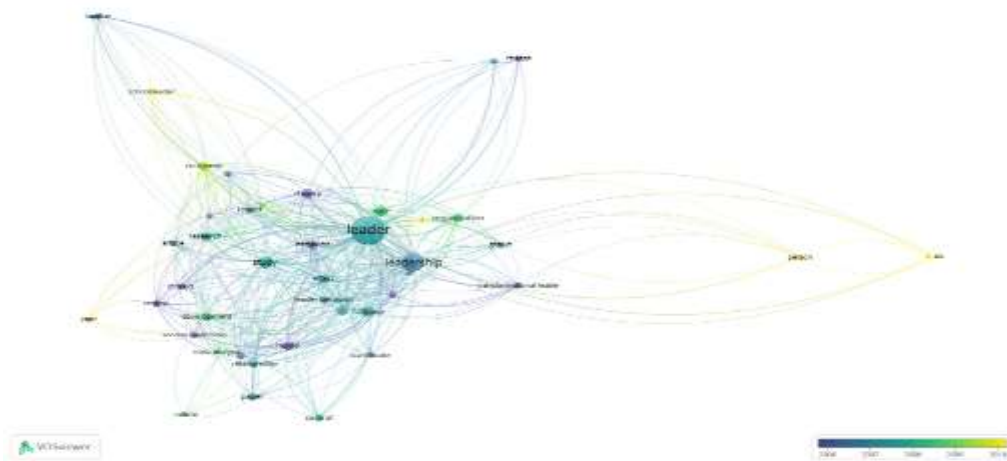
The following is an overview of the selection of variables using publish or perish and vosviewer to eliminate from many studies on:

Leadership

Picture. 1 Network Visualization Leadership
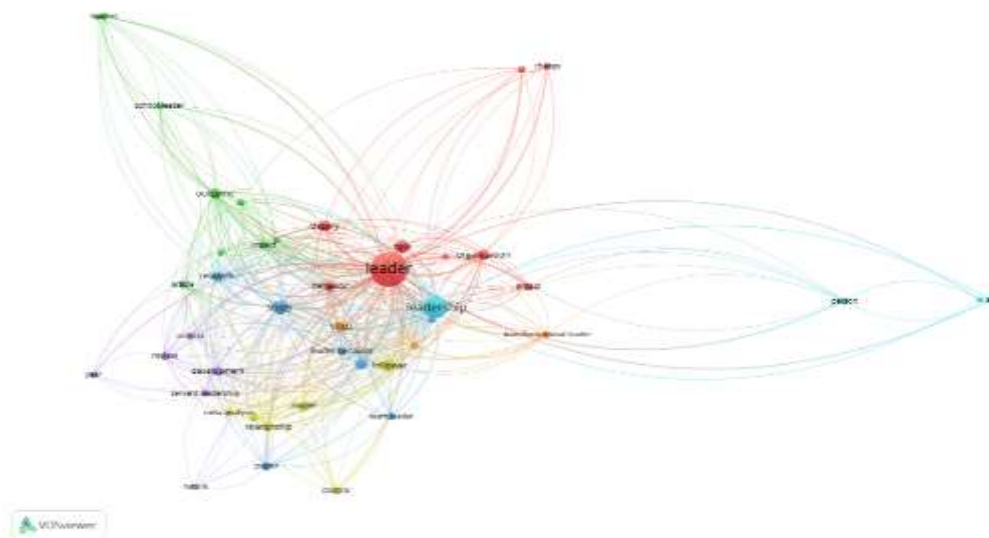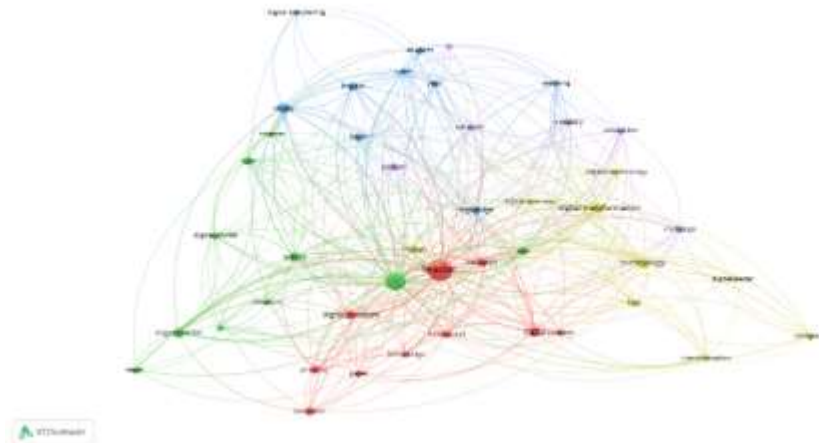

Picture. 2 Overlay Visualization Leadership

From the findings of the variables regarding leadership using the publish or perish and vosviewer applications, they are as follows:

|	
Publication years :	2000-2023
Papers :	200
Citations :	482436
Cites/year :	20101.50
Cites/paper :	2412.18
Cites/author :	307765.71
Papers/author :	115.69
Authors/paper :	2.34
h-index :	174

If you look at the data above, it can be explained by using the help of the vos viewer application, especially about leadership from 200 articles taken from 2000 to 2023, quite a lot of people are researching about leadership. But there are not too many who research on digital leadership and will be discussed below.

Digital Leadership

Picture. 3 Network Visualization Digital Leadership

Pic. 4 Overlay Visualization Digital Leadership
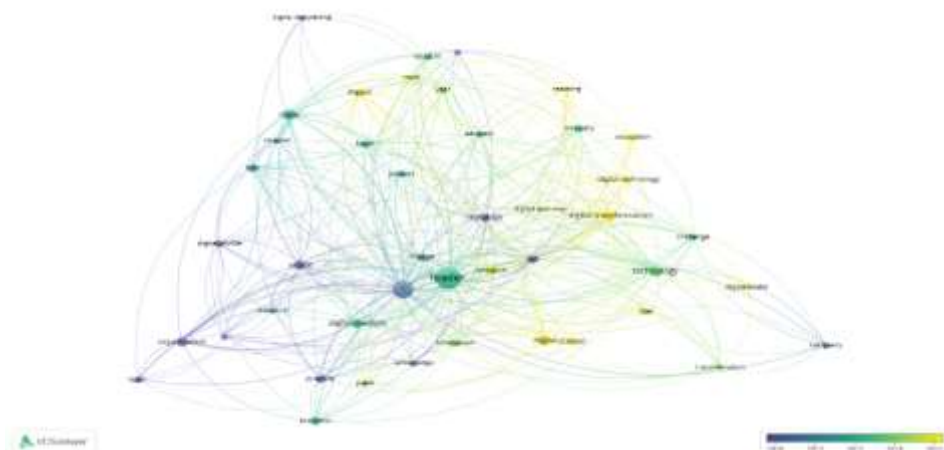
From the findings of the variables regarding digital leadership using the publish or perish and vosviewer applications, they are as follows:

Publication years :	2000-2023
Papers :	200
Citations :	404453
Cites/year :	16852.21
Cites/paper :	2022.27
Cites/author :	267695.55
Papers/author :	126.30
Authors/paper :	2.14
h-index :	187

If you look at the data above regarding digital leadership taken from 200 to 2023, as many as 200 articles on digital leadership have not been researched, especially about digital leadership in the world of education, so this is what can see the newness of this research.

CONCLUSION

This research discusses the role of digital leadership in improving the quality of higher education, several articles on digital leadership show that currently digitalization has entered to show quality in an organization. This is shown in several articles on digital leadership in previous research. This discussion also shows that digital leadership in higher education can improve the quality both administratively and in learning activities for both lecturers and students. However, the limitation in digital leadership must be that there must be a personal supporter regarding knowledge about digitalization to the operators who run it. So that the next recommendation to researchers is about more effective digital training strategies and can implement sustainable technology in educational institutions. This finding makes an important contribution to the development of technology, especially in the field of education.

REFERENCE

Aan Komariah, E. (2010). Educational Administration. Alfabeta.

Abamosa, J. Y., Hilt, L. T., & Westrheim, K. (2020). Social inclusion of refugees into higher education in Norway: A critical analysis of Norwegian higher education and integration policies. Policy Futures in Education, 18(5), 628–647. https://doi.org/10.1177/1478210319878327

Ahlquist, J. (2020). Digital Leadership in Higher Education: Purposeful Social Media in a Connected World. Routledge.

Alqahtani, M. M. (2023). Artificial intelligence and entrepreneurship education: A paradigm in Qatari higher education institutions after covid-19 pandemic. International Journal of Data and Network Science, 7(2), 695–706. https://doi.org/10.5267/j.ijdns.2023.3.002

Amaliyah, F. N. (2014). The effect of transformational leadership style on employee job satisfaction with work motivation at PT.

Amirault, R. J. (2021). The Next Generation Digital Learning Environment: Strategies for Higher Education Leaders. Routledge.

Arpaci, I. (2019). A hybrid modeling approach for predicting the educational use of mobile cloud computing services in higher education. Computers in Human Behavior, 90, 181–187. https://doi.org/10.1016/j.chb.2018.09.005

Balyer, A., & Öz, Ö. (2018). Academicians' views on digital transformation in education. International Online Journal of Education and Teaching, 5(4), 809–830.

Bass, B. M. (1985). Leadership and Performance Beyond Expectation. Free Press.

Beaudoin, M. F. (2015). Distance education leadership in the context of digital change. Quarterly Review of Distance Education, 16(2), 33–44.

Brodjonegoro, S. S. (2008). Some Thoughts in the Context of Improving the Quality and Competitiveness of Higher Education, Makalah. Universitas Brawidjadja.

Brown, C., Czerniewicz, L., & Huang, C. W. (2018). Digital Leadership. In Encyclopedia of Information Science and Technology, Fourth Edition (pp. 2995–3004). IGI Global.

Crick, T. (2021). Covid-19 and Digital Education: a Catalyst For Change? ITNOW, 63(1), 16–17.

Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: the state of the field. International Journal of Educational Technology in Higher Education, 20(1). https://doi.org/10.1186/s41239-023-00392-8

Dasgupta, P. (2019). Transforming Higher Education Through Digital Leadership. In Handbook of Research on Digital Content, Mobile Learning, and Technology Integration Models in Teacher Education (pp. 382–398). IGI Global.

David, G. L., & Stanley, D. B. (2006). Quality Management: Introduction to Total Quality Managemen for Production, Processing and Service. Pearson Education. Inc.

Fernandez, A. A., & Shaw, G. P. (2020). Academic Leadership in a Time of Crisis: The Coronavirus and COVID-19. Journal of Leadership Studies, 14(1), 39–45.

Govender, K. K., Soni, S., & David, E. (2022). Students as customers of higher education: Perceptions of South African students. Innovative Marketing, 18(2), 174–185. https://doi.org/10.21511/im.18(2).2022.15

Howell, M. P., Reames, E. H., & Andrzejewski, C. E. (2014). Educational leadership program faculty as technology leaders : What support will they need ? New Waves Educational Research & Development, 17(1), 31–50.

Jameson, J. (2013). E-Leadership in higher education: The fifth "age" of educational technology research. British Journal of Educational Technology, 44(6), 889–915.

Juliandi, A. (2018). Structural Equation Model Based Partial Least Square (SEM-PLS): Using Smart PLS. Batam University.

Kaplan, A. M., & Haenlein, M. (2016). Higher education and the digital revolution: About MOOCs, SPOCs, social media, and the Cookie Monster. Business Horizons, 59(4), 441–450.

Keller, C. (2018). Digital Leadership in Higher Education. In Encyclopedia of Information Science and Technology, Fourth Edition (pp. 1806–1813). IGI Global.

Khan, B. H. (2021). Digital Leadership in Higher Education: A Handbook for Emerging Leaders. Routledge.

Kurniawan, Y. A. (2017). Principal Leadership. Jurnal Manajemen Pendidikan, 8(2), 182–190 134. https://doi.org/10.21009/jmp.08117

Langitan, B. (2012). Research to Improve Higher Education Competitiveness. Papers of the National Coordination Meeting on Research and Community Development.

Leader, S. (2009). Essential Guide to Leadership. Havard Business Review, 1–92.

Mahadee, I. M. (2020). Keywords: perception, cheating. Malaysian Journal of History, Politics, Strategic Studies, 47(December), 1–6.

Miller, G., Benke, M., Chaloux, B., Ragan, L. C., Schroeder, R., Smutz, W., & Swan, K. (2013). Leading the e-Learning Transformation of Higher Education: Meeting the Challenges of Technology and Distance Education. Stylus Publishing.

Miranda, J. P., Batista, M., Duarte, C., & Sanches, T. (2021). Interdisciplinary class observation in higher education: Lessons learned from the professional development experience of four teachers. Education Sciences, 11(11). https://doi.org/10.3390/educsci11110706

Muhith, A. (2017). Fundamentals of Integrated Quality Management in Education. Journal of Chemical Information and Modeling, 53(9), 1–152.

Northouse, P. G. (2013). Leadership: Theory And Practice (6th ed.). SAGE Publication.

Octaviana, M., & Silalahi, D. K. (2016). Leadership of the Principal's Transformational Leadership. Principal's Transformational Dream Leadership, 12, 7.

Paniagua, J., Villó, C., & Escrivà-Beltran, M. (2022). Cross-Border Higher Education: The Expansion of International Branch Campuses. Research in Higher Education, 63(6), 1037–1057. https://doi.org/10.1007/s11162-022-09674-y

Persichitte, K. A. (2013). Leadership for educational technology contexts in tumultuous higher education seas. TechTrends, 57(5), 14–17.

Porfírio, J. A., Carrilho, T., Felício, J. A., & Jardim, J. (2021). Leadership characteristics and digital transformation. Journal of Business Research, 124, 610–619. https://doi.org/10.1016/j.jbusres.2020.10.058

Quy, V. K., Thanh, B. T., Chehri, A., Linh, D. M., & Tuan, D. A. (2023). AI and Digital Transformation in Higher Education: Vision and Approach of a Specific University in Vietnam. Sustainability (Switzerland), 15(14). https://doi.org/10.3390/su151411093

Rahman, A. (2013). The Influence of Individual Characteristics, Motivation and Work Culture on Employee Performance at the Family Planning and Women's Empowerment Agency of Donggala Regency. Jurnal E-Jurnal Katalogis, I(mor 2).

Ramanathan, A. (2022). Digital Leadership in Higher Education: Rediscovering the Human Side of Leadership in the Digital Era. International Journal of Digital Leadership in Education, 1(1), 45–58.

Rof, A., Bikfalvi, A., & Marques, P. (2020). Digital transformation for business model innovation in higher education: Overcoming the tensions. Sustainability, 12(12), 4980.

Said, M. M., Muhammad, N., & Elangkovan, K. (2014). The continuity and change of Indonesia's Islamic higher educational institutions in the amid of educational policy change. Asian Social Science, 10(6), 71–80. https://doi.org/10.5539/ass.v10n6p71

Sanjani, M. A. (2019). Democratic Leadership of the Principal. Jurnal Serunai Administrasi Pendidikan, 7(1), 75– 83. https://doi.org/10.37755/jsap.v7i1.131

Schwab, K. (2012). The Global Competitiveness Report 2012-2013. World Economic Forum.

Sheninger, E. C. (2019). Digital Leadership for Transforming Higher Education. Journal of Higher Education Management, 34(1), 32–46.

Siswopranoto, M. F. (2022). Education Quality Standards. AlIdaroh: Jurnal Studi Manajemen Pendidikan Islam, 6(1), 17–29. https://doi.org/10.54437/alidaroh.v6i1.372

Spires, H. A., Morris, C. B., & Kerkhoff, S. N. (2020). Digital Transformation and Innovation in Chinese Education. IGI Global.

Sunder M., & V. (2022). Digital Leadership in Higher Education. In Handbook of Research on Future of Work and Education: Implications for Curriculum Delivery and Work Design (pp. 276–291). IGI Global.

Sutiah, S., Kholid, A., Purba, A. S., & Slamet, S. (n.d.). Improving the competitiveness of Islamic higher education: Study approaches to development of human resource competencies (HR. Review of International Geographical Education, 11(3), 477–493.

Tanjung, R., Supriani, Y., Mayasari, A., & Arifudin, O. (2022). Quality Management in the Implementation of Education. Jurnal Pendidikan Glasser, 6(1), 29. https://doi.org/10.32529/glasser.v6i1.1481.

Waller, R. E., Lemoine, P. A., Mense, E. G., & Richardson, M. D. (2019). Higher education digital leadership in the 21st century. International Journal of Education Humanities and Social Science, 2(3), 1–17.

Wicaksana, A. (2016). The Role of Transformational Leadership of School Principals in Realizing Character Education in Schools (Vol. 1, pp. 1–16 139). https://Medium.Com/,

Yulk. (2015). Leadership in Organizations.