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Digital Transformation at King Khalid University in Light of International Experiences (Comparative Study)

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Abstract

The research deals with the digital transformation at King Khalid University in light of some international experiences by addressing the reality of digital transformation at King Khalid University, and the most prominent efforts made by the university to expand the promotion of digital transformation, and identify the similarities and differences that can be extracted through the comparative analytical study, and thus develop recommendations and proposals to enhance the digital transformation at King Khalid University in light of the results of the comparative study. The study uses the comparative approach with its descriptive analytical approach through a comprehensive description of the phenomenon and analysis of information and data related to the subject of the study in light of the cultural forces and factors, and this is done through the comparative cultural analysis of the axes that the study addresses in its various aspects**.**

Keywords: Digital Transformation - King Khalid University - International Experiences

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Introduction

Many countries have succeeded in achieving the digital transformation of universities, which has greatly contributed to the success of educational and research processes, while also covering a larger segment of society. Additionally, this transformation has helped overcome sudden crises, such as the COVID-19 pandemic, allowing universities to achieve various social, political, and economic goals. This comes amidst the growing influence of technology on human thought, which has been affected by various social, religious, and cultural changes resulting from these technological shifts. In turn, the thinking and performance of educational institutions have been significantly impacted by these changes.

The world entered the information age decades ago, where information and communication technology plays a pivotal role in modern development in all its aspects. While developed nations continue to progress by leveraging modern technologies, developing countries are striving to catch up and use these technologies to bridge the vast technological knowledge gap. The technological development that emerged since the late 20th century has fundamentally transformed life in general, and particularly the way scientific thinking and academic study are conducted. This has led to the emergence of a new type of society that increasingly relies on knowledge and digital technologies instead of traditional methods (Abdel Hadi, Sahar, 2017, p. 23).

University education, through its various institutions, contributes to developing the intellectual, skill-based, and ethical capacities of individuals, transforming them into creative, thinking, and productive

human resources. This requires continuous development of individuals to keep pace with the astonishing technological and digital transformations, thereby contributing to the development and advancement of society (Al-Dahshan, Gamal, Al-Sayed, Samah, 2020, p. 4).

Universities have worked to keep pace with the enormous digital transformation, which has been accompanied by advancements in information and communication technology and distance education. This transformation positively impacts the quality of education due to significant changes in how knowledge is delivered, along with increased academic and research collaboration. Additionally, it has made a large number of educational resources more accessible, contributing to the quick availability of curricula and learning materials (Altbach, Philip G., et al., 2009, p. 9).

The digital transformation of universities has become more comprehensive, extending beyond the mere use of technology within the educational institution. It now serves as an inclusive approach inside and outside the institution, targeting all demographics and providing educational services that are more comprehensive, faster, and easier to access, especially with the expanding reach of information technology and digital knowledge.

Recent international trends are based on various economic and political factors through the analysis of the economy and labor markets, which has influenced the university education environment. This shift has also redefined the relationship between students and faculty, transforming universities from places of learning into institutions that contribute to the success of all societal organizations. They now rely on comprehensive knowledge and smart information technology solutions within universities to provide educational and research services aligned with labor market needs (Morz, N., 2013, p. 9).

Traditional universities are gradually transforming into more interactive and dynamic institutions, as required by the modern era. This transformation is a natural and logical progression from e-learning, supported by the vast expansion of open-source cloud computing and educational platforms that have become one of the pillars of modern education, both globally and in the Arab world (Thamer, Jawad Otheil, et al., 2018, p. 168).

Digital transformation enhances universities' ability to compete with other academic institutions, both domestically and internationally, which strengthens scientific and technological knowledge. Additionally, it provides new capabilities that traditional systems may not offer, such as the development of self-learning skills, proficiency with information and communication technology, problem-solving, virtual teamwork, and digital literacy. These are achieved through training in technology, distance learning, and lifelong continuous education (Bakr, Abdel Gawad Al-Sayed, 2020, p. 35).

In Saudi Arabia, universities have begun taking effective steps towards digital transformation by enacting appropriate laws and regulations. This has led to significant improvements in technological infrastructure, replacing most traditional routine services with advanced technological services within universities. Furthermore, technology has been integrated into all organizational levels of the university, covering its various activities and services (Talba, Rania, 2023, p. 143).

King Khalid University (KKU) has given special attention to digital transformation. According to the university's official guidelines, a Digital Platforms Management Council has been established. This council, an extension of specialized boards at the university, is tasked with overseeing the university's digital transformation and managing its electronic platforms (King Khalid University, 1445, p. 5).

Research topic:

The Kingdom of Saudi Arabia is striving to enhance digital transformation, which requires development to meet the current era's requirements and global trends in digital transformation. This involves reviewing the educational requirements and standards for digital transformation. The sixth National Dialogue Conference (Education: Reality and Ways for Development), held in 2006, emphasized the need to reconsider certain aspects related to the technological advancements of the era. Given the importance of digital transformation in improving services in educational institutions and ministries, the conference on "Digital Transformation of Saudi Universities Towards Vision 2030," held on January 31, 2019, recommended the necessity of experimenting with new technologies in classrooms and assessing their positive impact on educational outcomes across various educational institutions, including schools and universities (Ghosh, 2020). In light of the importance of digital transformation in enhancing services in educational institutions and ministries, the aforementioned conference reiterated the necessity of testing new technologies in classrooms and their positive effects on educational results in different educational institutions.

To achieve digital transformation at King Khalid University, the regulatory framework for the open learning platform (KKUx) was defined by the University Council on the date of 4/10/41, during its tenth session on 12/9/1441 AH. This framework includes the organizational structure for the Digital Platforms Management Council, headed by the University President, who is responsible for economic affairs and knowledge management. The General Supervisor of the platform serves as a member and deputy, while the Assistant General Supervisor is a member and rapporteur. The membership includes the Executive Director of the platform, the Supervisor of the General Department of Legal Affairs, and the General Supervisor of Self-Funding, along with four members who are specialists in educational technologies and platform affairs, who are appointed based on the nomination of the General Supervisor. Additional specialists may be added if deemed necessary (King Khalid University, 1445, p. 24).

The research questions revolve around the following inquiries:

1. What are the main features of digital transformation in universities in the United States and Singapore?
2. What efforts have been made towards digital transformation at King Khalid University?
3. What are the similarities and differences in digital transformation among universities in the United States, Singapore, and King Khalid University in light of the influential cultural forces and factors ?
4. What proposed measures can enhance digital transformation at King Khalid University based on a comparative study between universities in the United States and Singapore?

Research Objectives

The research aims to achieve the following aspects:

1. Monitoring the Key Features of Digital Transformation in Universities in the United States and Singapore in Light of Cultural Forces and Factors.
2. Assessing the Current Efforts Made for Digital Transformation at King Khalid University.
3. Studying the Similarities and Differences in Digital Transformation Among Universities in the United States, Singapore, and King Khalid University in Light of Influential Cultural Forces and Factors.
4. Formulating Proposed Actions to Enhance Digital Transformation at King Khalid University Based on the Comparative Study Between the United States and Singapore.

+Importance of Research

- The significance of this research stems from the vital role of universities in the twenty-first century and their transition to global competitiveness. This research can contribute to providing insights into digital transformation and strengthening the capabilities of King Khalid University.
- It responds to the Saudi Vision 2030 aimed at positively achieving digital transformation for universities.
- There is a need for the Arabic library to address topics related to digital transformation in universities, which is lacking in Arab libraries compared to international studies due to the global interest in the issue of digital transformation in universities.
- The research provides opportunities for educators to benefit from identifying essential aspects of digital transformation in universities and understanding international experiences that contribute significantly to digital transformation in universities.

Research Methodology

This research employs a comparative approach using descriptive and analytical methods by studying and analyzing facts, information, data, and statistics related to the topic of research (digital transformation in universities) in light of cultural forces and factors. Consequently, it will provide a comparative cultural analysis of the research elements in their various aspects and identify similarities and differences among the countries being compared. This will enable the formulation of proposed measures that can enhance digital transformation at King Khalid University based on comparative analytical research of digital transformation in universities in the United States and Singapore.

Research Scope

The research is limited to the following boundaries:

1. **Subject Boundaries**: Pertaining to digital transformation in universities, which includes (its concept, objectives, pillars, tasks, and role in improving university standards).
2. **Geographical Boundaries**: The research focuses on studying digital transformation in the United States, Singapore, and Saudi Arabia, represented by King Khalid University.
3. **Temporal Boundaries**: This research emphasizes university internationalization during the twenty-first century.

Research Terminology

Digital Transformation

Digital transformation is defined as the transition from traditional generalization systems to a digital generalization system based on modern and evolving digital technologies, aimed at enhancing university management and restructuring it digitally through intelligent human resources, digital infrastructure components, and digital technological applications over the internet to increase the university's effectiveness and efficiency (Talaba, Rania, 2023, p. 147).

A comprehensive definition of digital transformation encompasses the academic environment, education, banking services, and nearly all industries that are "digitally transforming" during the Fourth Industrial Revolution. Digital transformation is linked to technology and pertains to the client and target groups, supporting organizational change processes and integrating digital culture (Hemerling, J., et al., 2018).

The procedural definition for this research considers digital transformation as the ability to use new digital technologies in higher education and enrich the learning environment to meet scientific and research requirements that contribute to improving university performance by investing in technological means, establishing controls and mechanisms for the quality of digital services provided, and supporting

the establishment and maintenance of digital communication infrastructure to enhance the acquisition of new skills, subsequently raising the level and performance of universities.

Previous studies:

Arabic studies

1. Study by Abu Haram, Fergal, and Shurbini, Ghada (1430 AH) , Titled "A Proposed Framework for Activating E-Learning at the Colleges of Arts and Education for Girls in Abha, King Khalid University, in Light of Evaluating the Current Reality of E-Learning Use from the Perspective of Faculty Members and Female Students." This study aimed to propose a framework for e-learning in the Colleges of Arts and Education by identifying the skills of female students and faculty members in using computers and the Internet, as well as the extent to which faculty and students utilize e-learning. The study identified obstacles faced by both students and faculty in utilizing e-learning. A proposed framework for activating e-learning at the Colleges of Arts and Education for Girls in Abha, King Khalid University, was developed using a descriptive analytical approach to assess the current reality through designing a questionnaire directed at students and another for faculty members. After applying the questionnaire and processing the data statistically, the results indicated that female students possess computer skills but are unable to use the Internet regularly due to family refusal to provide Internet access at home, which is the largest obstacle to activating e-learning for female students. The results also showed that faculty members have computer skills and contribute to activating e-learning by preparing electronic courses for students. The obstacles faced by them in using e-learning include: the continued reliance on traditional education systems as an obstacle to moving towards e-learning, the heavy teaching and administrative burdens, resistance from students to this type of education, and the lack of substantial financial incentives to work with e-learning systems. Finally, the study presented a proposed framework for activating the use of e-learning in the Colleges of Arts and Education in Abha.

2. Study by Al-Amri, Fariha, and Al-Harthi, Abdul Rahman (2023) Titled "The Role of Education Policies in Digital Transformation in Light of the Kingdom's Vision 2030 from the Perspective of Female Teachers." This current study aimed to identify the role of education policies in digital transformation in light of Vision 2030 from the perspective of female teachers in Al-Qunfudhah Governorate. To achieve this goal, a descriptive methodology was used, with responses from female teachers in Al-Qunfudhah totaling (3,544). A stratified random sample of (380) teachers was surveyed. The results indicated that the impact of education policies on digital transformation in light of Vision 2030 is high in the first area. The study results showed significant statistical differences in the second area (the role of education policies in designing digital educational programs), the third area (the role of education policies in preparing qualified human resources), and the fourth area (the role of education policies in financing digital transformation) based on the variable of years of experience, favoring the category "from 5 to less than 10 years." However, there were no differences in the first area (the role of education policies in spreading the culture of digital transformation) based on years of experience. The researcher recommends that educational institutions in the Kingdom, both public and private, should continuously monitor and evaluate their internal and external environments during their digital transformation.

3. Study by Talab, Rania (2023) This study aimed to explore the nature of digital transformation in universities in the United States and Saudi Arabia and how to benefit from it in Egypt. The study used a comparative methodology and reached a set of proposals for digital transformation in Egyptian universities based on the experiences of the United States and Saudi Arabia. These proposals include promoting a culture of digital transformation, establishing digital transformation units within universities, equipping them with specialists, and setting criteria for their selection, as well as establishing foundations for electronic services for university affiliates.

Foreign Studies

1. Study (2019) by Marcon et al. Titled "Obstacles to Digital Transformation", This study aimed to identify the obstacles to digital transformation in higher education through interviews with managers,

officials, consultants, and research and consulting centers in Singapore. The study employed a descriptive analytical methodology. The findings highlighted a variety of obstacles, categorized into strategic obstacles (governance, trust, transparency, and beneficiaries' needs) and operational obstacles (financial resources, infrastructure, information security, and operational processes required for digitization). Additionally, there were obstacles related to human resources (capabilities, skills, resource shortages, and resistance to change). Among these, the obstacles of resistance to change, capabilities, and skills were found to have the most significant impact, while information security represented the least impactful obstacle.

Commentary on Previous Studies

The previous studies addressed many aspects related to digital transformation, both internationally and regionally, alongside the experimental applications and related aspects in higher education. They also examined Saudi experiences in digital transformation and the accompanying educational policies. Additionally, they discussed the obstacles to digital transformation in higher education at both international and regional levels. The results of these studies clarified the necessity of digital transformation for higher education and highlighted the varying capabilities for implementing digital transformation based on material and human resources. Moreover, they emphasized the social impact on the acceptance of digital transformation among students in Saudi Arabia and how to leverage the available resources, as highlighted in the study by Abu Haram, Fergal, and Shurbini. The study is similar to Al-Amri, Fariha, and Al-Harthi's research in identifying the impact of educational policies on digital transformation. In contrast, the current study differs from Talab, Rania's study (2023) by focusing specifically on Saudi Arabia, particularly King Khalid University, and it also differs from the **Marcon et al. study (2019)** in its comprehensiveness regarding digital transformation and its mechanisms**.**

The State of Digital Transformation in American Universities

1. Digital Transformation at Harvard University

American universities are among the pioneers in digital transformation, with Harvard University being one of them. Harvard has sought to achieve digital transformation by developing a digital strategic plan aimed at enhancing digital content and digital assets for information technology, as well as expanding internet usage within the university. The goal is to facilitate communication between faculty members and students in educational and research processes, along with communication with administrators regarding administrative aspects. The university employs the (ZOOM) application, in addition to various digital platforms that serve large sectors like libraries (Harvard University, 2022).

Harvard University launched a smart educational platform that supports faculty members academically and research-wise, allowing for the integration of curricula and digital tools within the university, called (HarvardX). This platform serves (90) colleges, alongside open courses that provide services to numerous students and trainees worldwide through features such as live chat, dialogue, assignment submissions, exams, and student work related to the educational process within the university's colleges. It also offers electronic training courses and provides available electronic curricula for users (Harvard University, 2013, P. 3).

Additionally, the (Harvard University Zoom Video) application serves as a communication tool for all university elements, making it easy to use across various devices such as smartphones, computers, and conference rooms, allowing users to connect with a large number of participants (Harvard University, Zoom Video, 2024, P. 6).

Harvard has also relied on services to develop digital education and virtual learning based on computer technology and the use of modern telecommunications devices to enhance course materials, equipping them with digital programs and smart technological devices through large centers and projects. The university offers a wide range of services for all parties in the educational process, including educational

services, learning, technological research, and supported technological platforms that meet technical needs, providing tools, platforms, data, consulting, and training (Talab, Rania, 2023, P. 143).

Harvard has adopted several applications to securely serve faculty, students, and staff, allowing participation outside the university. For faculty and staff, there is the (One Drive for Business) application, which allows for secure storage of faculty and staff data and enables access to and sharing of data securely over the internet. For students, there is the (Office 365) application, which displays educational content for students to manage and share individual files, facilitating the educational process. Additionally, the (Accellion Kite works for FAS) application enables the secure exchange and sending of large, private files between faculty, students, affiliates, and other beneficiaries (Harvard University, 2024).

There are also collaborative applications like (SharePoint and Microsoft Teams) for teams and workgroups to store project-related and research information, along with (Microsoft Teams), which serves as a messaging application for storing documents and files, as well as for meetings, lectures, and programs. Other applications for large data include (HUIT Economy Storage), which is economical and suitable for large media files, and (HUIT Standard Storage) for storing large data and databases, along with (Harvard Dropbox), an application available to members and users, promoting international collaboration between universities beyond Harvard University (Harvard University, 2024).

2. Digital Transformation at Fayetteville State University

Fayetteville State University has developed plans for digital transformation that align with the university's educational, social, cultural, and economic developments in North Carolina to serve the teaching and research aspects of the state and achieve the university's scientific goals. Technology and communication programs hold significant importance in the digital transformation across all levels (bachelor's, master's, doctorate), and the university emphasizes languages that add a global dimension to digital transformation, such as Spanish, which is prevalent in South America (Fayetteville State University, 2017, P. 3).

Fayetteville State University has achieved significant success in digital transformation, offering its research and educational programs across many countries through modern technology. This includes the (COIL) program, which stands for Collaborative Online International Learning, in collaboration with the American Council on Education (ACE). The university has successfully collaborated with universities in other countries such as Singapore and Spain through its technological programs and applications (American Council on Education, 2016, PP. 1-3).

The university has partnerships within the framework of digital transformation, such as its partnership with the U.S. Department of Defense, which focuses on various partnerships, including research related to defense in technology, engineering, science, and mathematics. There is also another partnership with research institutions, including the Fort Bragg Research Center and the U.S. Army Laboratory (University of North Carolina System, 2019, P. 2).

These partnerships have resulted in the establishment of several entities supporting digital transformation, including the Small Business and Technology Development Center, which works to address contemporary technological developments by developing and marketing technology. Fayetteville State University received an award from the COIL program for its significant efforts in digital transformation and technological development (American Council on Education, 2016, PP. 1-3).

It is evident that American universities, represented by Harvard University and Fayetteville State University, operate according to clearly defined strategic vision and plans that achieve the overall goals of American education, providing innovation and progress sought by American education through educational institutions in general and higher education institutions in particular. The general plans for digital transformation in American universities also consider the nature of each state to which the university belongs, the significant differences in cultural and social heritage, and the available resources

despite their proximity and the nature of the region's or state's population. The specific objectives of technological transformation, its pillars, mechanisms, and tools vary accordingly. Additionally, it is noticeable that there is an international dimension to digital transformation that extends to several countries based on agreements between American universities and other international universities and institutions. Thus, the services provided by American universities locally integrate technological services for students, faculty members, and staff at these universities and internationally extend the influence of American culture and education through possessing digital transformation tools, impacting numerous universities and educational institutions in various countries beyond the state. Therefore, digital transformation in American universities encompasses multiple goals and dimensions.

The State of Digital Transformation in Singapore:

The National University of Singapore as a Model

The National University of Singapore (NUS) is considered one of the world's leading universities, ranking 11th globally according to QS rankings. It has made significant strides towards digital transformation through various applications in its programs. Additionally, there are programs extending beyond the university that enhance e-learning and technological needs, including cybersecurity and software engineering, based on national technical business analyses through various applications and practices that meet community needs (NUS Office of Corporate Relations, 2017, P. 26).

There is significant government support for NUS in the context of digital transformation, particularly concerning technical programs and talent discovery, along with numerous scientific and technological competitions and programs supporting the technological advancement of the National University of Singapore (Mok K. H., 2013, P. 78).

Since 2011, NUS has collaborated with telecommunications companies to initiate technology through the (Blk71) initiative, which includes startups, investors, and organizations such as incubators, aiming to achieve localization economies and develop a high-tech center, alongside maritime navigation and port authorities, significantly impacting the community by providing numerous job opportunities (NUS Office of University Communication, 2018, P. 53).

NUS focuses on improving innovative capabilities in research and education as part of Singapore's vision while seeking technical outreach beyond the university and attracting a large number of foreign talents. This aims to enhance the country's creative capacities, resulting in significant advancements for Singaporean universities in general and NUS in particular in global university rankings (Charisse. N. R., 2016, P. 144). The university has a dedicated technology office, the Vice President for Research and Technology, which focuses on organizing and achieving research ethics and legal compliance, serving all university personnel and working extensively to invest in technology (National University of Singapore, 2024).

NUS has worked to extensively market technology through several avenues, including reorganizing the Industry and Technology Relations Office (INTRO) to align with technical marketing and accommodate inventors, thus enhancing innovation efficiency. Its name was changed to the Industry Liaison Office (ILO), expanding its roles between productivity and technological marketing (Wong, P.-K., Ho, Y.-P., Singh, A., 2019, P. 17).

NUS's role extends to national influence through the Innovative Local Enterprise Achiever Development (ILEAD) program, aimed at enhancing technical efficiency, alongside the Extra Chapter Challenge program designed for university students to improve their technical skills. Moreover, the investment aspect has emerged through these programs, represented by the NUS Enterprise Incubation project, which aims to establish communication networks with investors to support spin-off projects for faculty, students, and graduates, as well as conducting scientific and applied research to develop knowledge related to technology policies and practices (Wong, P.-K., Ho, Y.-P., Singh, A., 2019, PP. 18-20).

NUS contributes to the professional scientific structure of the country through its technological elements and the resulting scientific and technological outputs. The university has evolved to achieve a professional level in education and research through strong commitment to developing and attracting outstanding students and faculty members (Wang, J., 2018, P. 105).

Additionally, NUS is distinguished by its international dimension in the context of digital transformation, attracting many students through technical programs from countries such as South Korea, Taiwan, Hong Kong, Japan, and Malaysia. There is also the Singapore International Graduate Award to attract students to study up to doctoral programs in technology, targeting potential students from Eastern Europe and the Middle East (Wong, P.-K., Ho, Y.-P., Singh, A., 2019, P. 3).

NUS has an international relations office specializing in international partnerships with institutions worldwide to enhance the university's status on all fronts, including technological aspects and digital transformation. This aims to achieve the university's vision by fulfilling technical and research objectives and attracting as many partnerships as possible in scientific and research fields (National University of Singapore, 2024).

Efforts of King Khalid University in Digital Transformation in Higher Education

Saudi Arabia began its digital transformation in educational institutions, particularly in higher education, at the end of the twentieth century. The use of computers in universities started in 1996, marking the beginning of e-learning in Saudi universities. E-learning deanships were established, and the Saudi Ministry of Higher Education approved distance education and the use of technology in e-learning. Additionally, the National Center for E-Learning was created to employ educational, informational, and communication technologies to enhance educational and research efficiency, ultimately achieving quality in education (Al-Asmari, 2014, P. 2).

King Khalid University responded quickly to the digital transformation in Saudi Arabia. In 2006, the Deanship of E-Learning and Distance Education was established. In 2017, the (KKUx) platform was launched, dedicated to various educational, research, and training activities, serving the university's academic communities, which number over 40, as well as the course offerings for all university subjects (King Khalid University, Introduction to King Khalid University Platform, 2019).

King Khalid University has effectively implemented digital transformation by adopting information and communication technology systems and activating their uses to achieve an informational society and a digital economy. The university has executed a strategic plan for digital transformation to enhance educational services and curricula while formulating policies related to digital levels at the general device level and establishing necessary plans and programs for implementation to benefit students and teachers, thereby enhancing the educational process to facilitate academic achievement and contribute to the quality of education and life (Yusuf, Fath al-Rahman, 2019).

King Khalid University is tasked with developing plans for the promotion and marketing of the platform, forming partnerships and agreements with various sectors within Saudi Arabia. There is also an annual operating budget for the platform prepared by the executive director regarding revenues, expenses, and other financial resources in accordance with regulations and guidelines (King Khalid University, Governance Guide for Councils, 1445 AH, P. 25).

Several entities are responsible for the digital transformation at King Khalid University. The General Administration of Information Technology oversees information systems and aims to move towards an integrated technological world based on the latest global technologies. Its mission is to achieve leadership in the transition to electronic services and provide integrated technical services that compete with global universities. This administration targets the improvement of electronic services to international standards, enhancing internal efficiency by upgrading old systems, converting all paper correspondence to electronic formats, integrating all electronic systems across various university sectors, and aligning the university's strategy with the electronic government transactions program to maximize the use and

benefit from essential governmental documents. It also aims to balance current IT requirements with anticipated future needs, along with the Deanship of E-Learning, which seeks to actively contribute to enabling university affiliates to meet their needs using the tools and practices provided by e-learning. It aims to incorporate e-learning into all educational activities at the university and establish partnerships with global universities (Talab, Rania, 2023, P. 157).

An executive committee has been formed, appointed by the Chairman of the Digital Platforms Council, to name its members and determine its president and responsibilities. The committee is to meet at least once a month, chaired by its president or a representative, and will convene whenever necessary. The meeting is considered valid only with the attendance of the majority of members, and recommendations are raised according to the majority votes of those present. In the case of a tie, the president's vote is decisive. The committee has the right to seek assistance from those it deems necessary. A scientific committee will be formed from among the council members to oversee the scientific and academic affairs of the open education platform, with members named and subject to the same rules mentioned (King Khalid University, Governance Guide for Councils, 1445 AH, P. 26).

The responsibilities of the Digital Platforms Council include reviewing matters related to the platform, including its governance, approval of its general strategy, vision, goals, and values, as well as proposing policies and strategic plans necessary to achieve the platform's objectives and tasks. The council will also discuss the executive rules and general policies raised by the general supervisor or executive director, which will then be submitted to the university director for approval. The council will nominate the executive director of the platform, the executive committees, and the scientific committee, approving the mechanism for providing content services to the platform and quality control standards in light of the best global standards and practices (King Khalid University, Governance Guide for Councils, 1445 AH, P. 24).

There are several digital transformation tools at King Khalid University, including the Akadimia system, which allows students and faculty members to execute and track all academic transactions, including direct registration and accessing various services such as academic records, schedule adjustments, and attendance rates. This system, launched by the Deanship of Admissions and Registration, is one of the most effective tools as it saves time and effort for faculty members. Additionally, the Akadimia mobile application targets viewing lists of enrolled students and course schedules for each semester, as well as tracking student absences via mobile devices. The Akadimia application represents a technological leap in smart education, facilitating interaction and monitoring of the educational process (King Khalid University, Deanship of Admissions and Registration, 2024).

Another digital transformation tool at King Khalid University is the e-learning platform (Blackboard), which operates as a comprehensive educational system for e-learning based on the use of the Blackboard system. The National license for Blackboard was provided by the Saudi Electronic University to several universities, including King Khalid University. This system offers users several options to choose what suits their needs and provides tools for interaction with peers, supporting various file formats and enabling file sharing over the internet (Siyaf, Amer, and Al-Qahtani, Mohammed, 2014, P. 7).

The virtual classrooms associated with the e-learning system (Blackboard) were widely implemented during the COVID-19 crisis due to precautionary measures, which included the continuation of education through remote learning and virtual classrooms to maintain social distancing among educational parties. Consequently, educational institutions across the Kingdom have intensified their efforts to adopt these new learning patterns, in addition to responding to university requests for everything new in technology and communications to facilitate the learning process. The role of the student has shifted from a passive receiver of information to an active participant in the educational environment through technology, utilizing available resources that enhance positives over negatives (Sara Al-Ahmari, 2021, P. 288).

King Khalid University has also focused on artificial intelligence through the Artificial Intelligence Center, aiming to improve quality of life by empowering individuals through innovative AI solutions. Its

mission seeks to achieve innovative and qualitative research for AI applications and systems that serve humanity and contribute to implementing advanced AI technologies in various fields, qualifying researchers and developers in the field of AI and its applications. The center's primary goals include the following (King Khalid University, Artificial Intelligence Center, 2024):

1. Enhancing development and innovation in the field of artificial intelligence to serve interdisciplinary research.

2. Localizing and disseminating AI technologies that contribute to improving community life and enhancing future economies.

3. Training and developing interested parties in the field of AI from students, researchers, and beneficiaries.

4. Developing strategic collaborations in the field of artificial intelligence**.**

In 2024, King Khalid University introduced a "Summer AI School" to train students and faculty members, alongside a number of general education students from outside the university. The program included an introduction to Python, covering the basics of programming and data structures using the Python language. It was designed to prepare participants to engage with various AI applications. Additionally, there was a module on "Training Machine Learning Models Using Python," which provided practical applications for data analysis and model training, emphasizing the importance of using machine learning techniques to solve complex problems and develop innovative solutions. This also included AI applications in languages, particularly the Arabic language, and in medical education, such as diagnosing early Parkinson's symptoms using deep learning. This segment showcased innovative techniques for using AI to develop medical diagnostic tools (Digital Government Authority, 2024).

Comparative Analytical Study:

From the previous discussion on digital transformation at King Khalid University and some universities in the United States and Singapore, along with their relation to various cultural forces and factors, the following sections present several key themes related to the study.

1. Similarities and Differences in Digital Transformation Strategies

King Khalid University, American universities, and the National University of Singapore share similarities in having a digital strategic plan to enhance digital content and digital assets for information technology and expand internet usage. They also develop digital transformation plans that align with the

universities' evolution across various fields, employing digital transformation tools through certain regulations, deanships, or centers.

However, differences arise as American universities expand their international and regional digital transformation and offer their research and educational programs across many countries using modern technology. In contrast, King Khalid University focuses its digital transformation primarily on academic and research services for its members.

Interpretation of Similarities and Differences in Digital Transformation Strategy

Similarities can be interpreted through cultural forces and factors (such as the political factor), represented by the desire to achieve international leadership and explore new horizons for higher education institutions. The similarities can also be explained in light of the (economic factor), represented by the strong economies of the United States, Singapore, and Saudi Arabia and increased financial allocations for universities, which enable the successful implementation of strategic digital transformation plans.

Differences can be interpreted through cultural forces and factors (specifically the political factor) as American educational institutions seek to integrate international elements into American society, while the National University of Singapore aims to export technology to neighboring countries. In contrast, Saudi Arabia has its own cultural and religious specifics, alongside the (social factor) associated with the open and diverse nature of American and Singaporean societies compared to the conservative Saudi society.

2. Similarities and Differences in Elements of Digital Transformation

King Khalid University, American universities, and the National University of Singapore are similar in their digital transformation elements, which include launching educational platforms for faculty and students and implementing various educational processes such as submitting assignments, exams, and student projects related to the educational process. They also collaborate with local councils and agencies and telecommunications companies to activate information technology and communication systems.

However, differences exist in the approach to digital transformation. Harvard University uniquely integrates educational curricula and digital tools under the name (HarvardX), while Fayetteville State University focuses on global digital transformation, particularly emphasizing languages like Spanish, which is widely spoken in South America. On the other hand, the National University of Singapore emphasizes technological programs and talent discovery.

Interpretation of Similarities and Differences in Elements of Digital Transformation

Similarities can be interpreted through cultural forces and factors regarding (the economic factor), which represents the strength of the economies in the countries being compared, thus providing significant financial support that enables the diversity and plurality of digital transformation elements, along with the (social factor) regarding the university communities' ability to interact with digital transformation elements.

Differences can be interpreted through cultural forces and factors based on (the political factor), where the goals of digital transformation differ according to educational philosophy and executive policies, as well as (the environmental and social factors) which represent differing local and social needs in each of the countries being compared. Additionally, geographical factors play a role in the proximity of the United States to South American countries, where Spanish is the most widely spoken language.

3. Similarities and Differences in Digital Transformation Applications

King Khalid University, American universities, and the National University of Singapore share similarities in their digital transformation applications, whether providing access to applications via mobile phones, computers, or conference rooms, as well as using smart technological devices and

artificial intelligence or educational tools such as the Blackboard, Akadimia, and Zoom in educational processes and communication.

However, the universities in the compared countries differ in terms of free access to applications; for example, Harvard University has paid applications and group applications for teams, along with investment-oriented digital transformation programs at the National University of Singapore, whereas King Khalid University offers free digital transformation applications that gained increased importance during the COVID-19 crisis.

Interpretation of Similarities and Differences in Digital Transformation Applications

Similarities can be explained through cultural forces and factors concerning (the political factor) represented by the presence of an educational philosophy that supports technological applications and enhances their role. Additionally, the (economic factor) reflects the significant financial resources available in the countries being compared, making achievements challenging for universities with fewer financial resources.

Differences can be explained through cultural forces and factors based on (the political factor) where King Khalid University aims to provide free technology for educational participants, while American universities and the National University of Singapore aim to reduce expenses.

4. Similarities and Differences Related to Partnerships and the International Dimension of Digital Transformation

King Khalid University, American universities, and the National University of Singapore share similarities regarding the existence of group applications and partnerships with multiple local entities, alongside the ability to benefit from technological applications from anywhere in the world. However, King Khalid University differs from American universities and the National University of Singapore in the nature of the international dimension of digital transformation and partnerships. Harvard University is keen on international outreach beyond its university framework, while Fayetteville State University participates in partnerships and an international collaborative online program. The National University of Singapore extends its international reach through online educational programs. Additionally, NUS organizes international relations through an office dedicated to international partnerships with institutions worldwide, whereas King Khalid University focuses on local partnerships to enhance benefits for students and staff.

Interpretation of Similarities and Differences Related to Partnerships and the International Dimension of Digital Transformation

Similarities can be explained through cultural forces and factors based on (the political factor), represented by a vision for leveraging technological programs and expanding partnerships, as well as (the economic factor), which reflects the significant financial resources in the universities of the compared countries, alongside increased funding and allocations.

Differences can be interpreted through cultural forces and factors based on (the social factor), which influences the forms of partnerships in American universities due to cultural diversity. Additionally, (the political factor) reflects the desire of American universities and the National University of Singapore to expand internationally. Furthermore, geographical and historical factors have influenced the nature of international partnerships, which have largely been with neighboring countries or countries with cultural and historical ties.

Proposed Actions to Enhance Digital Transformation at King Khalid University Based on the Comparative Study with Universities in the United States and Singapore

First: Related to the Digital Transformation Strategy

It is suggested that the digital transformation strategy should focus on planning to benefit from King Khalid University's digital transformation both regionally and internationally, offering its research and

educational programs across many countries through modern technology alongside academic and research services for university affiliates.

Second: Related to Elements of Digital Transformation

The impact and effectiveness of digital transformation elements at King Khalid University can be increased through several measures, such as integrating educational curricula and digital tools under the name (HarvardX), alongside an emphasis on technological programs that enhance talent discovery. Additionally, establishing digital transformation elements that align with global digital transformation trends, utilizing various languages, particularly Arabic, which represents a cultural depth for Saudi Arabia and its Arab neighbors, as well as culturally relevant languages like Turkish, Urdu, Malay, and others associated with Islamic countries.

Third: Related to Digital Transformation Applications

King Khalid University possesses excellent digital transformation applications that facilitate sharing applications in a way that generates economic support and developmental benefits for the university, thereby enhancing investment-oriented digital transformation programs that provide significant strength in global rankings and contribute to the university's financial independence.

Fourth: Related to Partnerships and the International Dimension of Digital Transformation

Encouraging external partnerships for King Khalid University would enhance its international dimension by extending beyond the university framework, alongside efforts to strengthen community and international partnerships. Establishing a mechanism for international collaborative online cooperation, whether with educational institutions or other organizations, and organizing the university's international relations through international relations offices dedicated to partnerships with institutions worldwide.

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