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"Run at Most Once" Reform in Higher Education: Change from Informatization to Digitalization of Administration in University X

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Abstract

With the rapid development of Information and Communications Technology (ICT), digitalization is widely believed to have a positive impact on the effectiveness of education around the world. More and more universities have been using digital methods to improve administrative efficiency. Understanding how digitalization was implemented in a university would be beneficial for ensuring its success. However, little research has been done to investigate the process of digitalization. This study utilized SWOT analysis to examine the strengths, weaknesses, opportunities, and threats of University X in relation to implementing administrative digitalization. A qualitative research method was selected to gather empirical data. The findings of the study revealed that University X had more favorable conditions to facilitate change, such as policy support, ICT support, qualified staff, and less resistance to change, despite the pandemic. Attention should also be given to harmful conditions such as disconnection between departments, information security risks, and the lack of digital talent.

Keywords

Administrative digitalization, higher education, "run at most once" reform, SWOT analysis

1. Introduction

According to Song and his colleagues (2020), to get administrative support, Chinese students need to travel between administrative departments 2-4 times, with 67.5% of them communicating between administrative staff and counselors at least 3 times. With the rapid development of "micro-technology", the outdated information construction can no longer meet people's demand for efficient and convenient digital services. More and more service items are expected to be shared online and get done "handheld" and "fingertip". Hence, the "run at most once" reform was increasingly implemented in higher education institutions. The concept of "run at most once" in higher education means departments or organizations fully apply digital means to conduct office, manage and provide public services in administration management (Zheng et al., 2022). It aims to improve administrative efficiency and promote teachers' and students' satisfaction by eliminating waste of time, resources, and repetitive communication. Understanding how digitalization was implemented in a university would be beneficial. However, few writers have been able to draw on any systematic research into the change process: how this reform is implemented, what challenges are encountered in the implementation, and what else can be done to ensure its success. To answer these questions, this paper will use the SWOT analysis to investigate the strengths, weaknesses, opportunities and threats of University X that enable the implementation of this project, together with changes

that University X experienced from the reform.

2. Literature review

2.1 The definition of digitalization

Digitalization refers to the adoption of digital technologies and digitized information and data, leveraging its power and enhancing the existing processes (Insight, 2021). With the rapid development of technology, different applications of digitalization are now a part of our daily lives. Higher education is no exception and there is a lot of optimism about the effects of ICT on the effectiveness of education (Hatos, 2019).

2.2 The driving force of change to digitalization in higher education

According to Kituyi and Tusubira (2013), factors involve the wave of globalization and technological progress. Dampson et al. (2020) believed that some students' learning was hampered by the poor ICT support services provided by higher education institutions (HEI). Hatos (2019) indicated that there is a lot of optimism about how ICT will affect education's effectiveness. Hence, a lot of money is being invested in the digitalization of education with high expectations to support learning by improving efficiency.

Besides technological advancement, dissatisfaction with inefficient administrative services is another factor. In universities, there has long been a substitution and suppression of academic power by administrative power (Zhong, 2010), and the neglect or even disregard of the rights of teachers and students by administrative power severely hampers the management process of universities (Wang, 2019).

Additionally, digitalization is sometimes viewed as being facilitated by governmental policies and interventions (DiMaggio et al., 2004). Many researchers believe that the digitalization changes in some HEIs were highly promoted by governmental policies (Xu, 2019).

At last, the COVID-19 emergency undoubtedly provided the non-negotiable impetus to the call for digitalization (Dampson et al., 2020).

2.3 SWOT analysis

Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis is regarded as a strategic planning tool in which these factors are investigated and evaluated (Abdel-Basset et al., 2018). After a thorough examination of an organization's internal and external environments, it is used to determine the best survival and development strategy (Kenneth, 1971). During the process, change occurs when one group of forces is stronger than the opposing group of forces because the "driving forces" push changes into the desired direction and the restraining forces hinder changes to the contrary (Robbins, 2000). These forces in the process of change can be examined using the SWOT analysis. By using a SWOT analysis, decision-makers can make good use of the organization's development advantages, fully utilize its potential, remove threats, and weaken disadvantages to advance organizational development.

Table 1. The SWOT analysis of the digital reform in University X

	Helpful	Harmful
Internal	**Strength** **(What university X has that enable the change)** ● Top-down support from the managerial level ● technological foundation ● qualified staff ● changing environment	**Weakness** **(What university X has that hinders the change)** ● poor information connection between departments ● resist to change ● lack of information talents
External	**Opportunities** **(What conditions university X can make benefit of to make the change happen)** ● trend of times ● successful experience of other universities to learn from ● pandemic outbreak, quarantine ● policy/government support	**Threats** **(What conditions university X might face to place the change at risk)** ● competition with other universities

3. Methodology

This study used a qualitative approach to investigate how University X's administrative processes went from informatization to digitalization. Semi-structured interviews were conducted to collect empirical data. Thematic analysis was chosen as the data analysis technique to organize large data sets.

3.1 Data Collection

To get detailed and reliable data, semi-structured interviews were conducted. The interview questions were pre-designed according to the objectives of the study. Five participants in University X were selected with purpose: two students who have experienced the digital change of the administration, two administrative staff who have implemented the change, and one leader who made development strategy plans. Permission was asked in advance and ethics information was informed at the beginning of the interview. All the participants were interviewed face-to-face on campus separately. Participants introduced themselves in Chinese and were asked open-ended and followed-up questions to clarify, elaborate, or rephrase their answers about their experience and opinions of digital change. At last, the verbal data was transcribed into textual transcriptions.

3.2 Data Analysis

Thematic analysis was chosen because it enables the researcher to divide and organize massive amounts of data into manageable chunks. According to Bingham and Witkowsky (2022), all qualitative data analysis techniques will either fall into the deductive or inductive categories. Deductive coding is a top-down approach. In this study, the researcher first categorized the data by participants, then started with a set of predetermined codes based on research questions, including strengths, weaknesses, opportunities, threats of University X, and their attitudes toward the change. And then the researcher found excerpts that fit those codes. On the other hand, as the researcher reads through the data, codes begin to emerge, making inductive analysis more of a "bottom-up" analytical approach (Bingham & Witkowsky, 2022). After the first round of deductive coding, the researcher read through the data again in each category, and discerned emerging topics or concepts to identify patterns.

4. Findings

4.1 Theme 1: Internal Strengths

The most frequently mentioned strength of University X is the top-down support from the managerial level. The "support of school leaders is the most powerful support and guarantee for the implementation and development of the administrative digital reform" (P3), motivating employees to think and implement it more proactively.

Another important strength mentioned by most of the participants is the technological foundation of the university. In the early stages of the reform, the existing technological foundation provided irreplaceable support for the development of change. It included "basic network, existing informatization campus construction" (P5), "hardware devices" (P1), and "technical department" (P2). Digital Reform is to build a digital space on these foundations to realize the digitalization of administrative management and service.

Additionally, university employees are generally more educated, more receptive to new things and with more enhanced learning ability, which also reduces obstacles to the smooth progress of digital reform.

At last, one of University X's unique strengths was also identified by one respondent. From junior college to undergraduate, University X was already in the process of comprehensive reform, so "it is relatively easy for staff to accept a new change" (P5).

4.2 Theme 2: Internal Weaknesses

According to Ansoff (1990), resistance to change increases the cost and length of the change process. Several participants believed that they encountered varying degrees of noncooperation in the process of implementing the change. P2 is concerned that "the sudden change may lead to inadaptable feelings or discomfort" for both teachers and students. These uncomfortable feelings can lead to non-cooperation. What's more, people will "resist a change that will affect their employment because new technology is typically associated with a decrease in labor intake" (P4).

Additionally, University X has another frequently cited weakness—poor connection between departments. "Various administrative departments are independent units scattered in different parts of the campus" (P5). The physical distances

between offices have increased the cost of time and energy. Students and teachers had to go to different offices many times to get things done. Furthermore, different departments have their own systems, the data of which "needs a 'bridge' to get integrated and interconnected" (P5).

Lack of related talents was also mentioned by P1 and P5. According to them, the new digital transformation "requires the recruitment of more talents in the digital area" (P1). P1 also expressed his concerns about "information insecurity, data loss or leakage", hence, more specialized data-security talent should be brought in to avoid these issues.

4.3 Theme 3: External Opportunities

The most important opportunity is the trend of the times. Both P3 and P5 believed that the smooth progress of digital transformation cannot be separated from "the influence of the external environment, which is the general trend." "Digitalization is the trend of the times. It points out the “direction of future development" (P3). Therefore, this opportunity should be recognized and made good use of.

This trend also influenced decision-making at the national level. Many policies have been enacted to support the digitalization of all walks of life. China’s national policy was another generally mentioned external factor that enabled the change (P1 & P2).

The outbreak of the Covid-19 pandemic accelerated the implementation of this reform because "all the students and staff were required to study or work at home when the pandemic became very serious in 2020" (P4).

Additionally, one lecturer mentioned another favorable external environment which was Zhejiang University’s rich experience that they can learn from (P5).

4.4 Theme 4: External Threats

University X only had one threat that hindered its administrative change to digitalization. This is competition with other universities. As was already mentioned, University X might benefit from the success of other universities, but P5 believed that due to market competition, it might also pose a threat.

4.5 Theme 5: Attitudes towards the digital reform

Albeit to varying degrees, all of the respondents expressed their recognition and support for the digital reform because they believed that "the efficiency of their work or study had improved" (P3) and the administrative work had been carried out more smoothly thanks to the digital reform.

Furthermore, they even put forward many good suggestions for the continuous development and improvement of this reform. For example, "put smart pickup lockers in the dormitory area...through data sharing...students can run less" (P5). Or use "intelligent auto-responder bot to reduce communication costs" (P4).

5. Discussion

5.1 Helpful factors for the change

First of all, the digital reform of administration was implemented at University X after the national policies with top-down support from the managerial level. This finding is consistent with that of DiMaggio et al. (2004) who regarded governmental policies and interventions as contributors to digitalization. Different from the poor ICT support services discovered by Dampson et al. (2020), University X has a wide application of information technology and the existing technological foundation provides irreplaceable support for the change. On the other hand, as Diaz-Garcia et al. (2022) stated, digitalization was not only a matter of technology, but of people, values, systems, and organizational structures. University X has qualified staff who are more open to change and higher ability to learn new things. Additionally, the need for digitalization was undoubtedly fueled by the emergency of COVID-19. This result corroborates the findings of a great deal of the previous work emphasizing the critical impact caused by the pandemic (Dampson et al., 2020; Livari et al., 2020). One interesting finding is that University X has already been experiencing the transition from junior college to university, which makes the new change of digital reform seem less disruptive. This outcome contradicts the claims of Livari et al. (2020) stating that the digital transformation of the education system is occurring in a disruptive way.

5.2 Harmful factors for the change

First and most importantly, in accordance with the previous studies, the present results have demonstrated that the disconnection between departments, whether it is office location, employee relations, or information sharing, had

seriously restricted the development process of digital reform (Huang, 2019). University X also encountered internal resistance to new changes: staff either showed uncomfortable or dissatisfied emotions, or they were not active or cooperative in their work. Finally, Zheng et al. (2022) stated that challenges such as information security risks and a shortage of digital talent were also encountered in the implementation of this digital reform.

This shows that compared with these disadvantages, University X has more favorable conditions to facilitate the smooth implementation of this administrative digital reform. All of the five participants thought positively of the change because their efficiency of work or learning improved after the change. Furthermore, many good suggestions had been put forward by the interviewees, hoping it could be promoted successfully as a long-term management model for administration.

However, the harmful conditions should not be ignored either. University X should break through the constraints of the information gap between departments as soon as possible to allow itself to be in a superior position in the competition with other universities.

6. Conclusion

The study contributes to a few studies of administrative digitalization transformation in the Chinese higher education field. The findings of the study have provided a deeper and systematic insight into the implementation process of the reform, reporting the strengths and opportunities that other universities could make use of, while the weaknesses and threats they could avoid. However, the study also has the limitation of a small sample, and thus can't be used nationally. So, further research could be done in more universities with bigger samples to contribute to the existing knowledge. A further study could also assess the long-term effects of administrative digitalization on teaching and learning.

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