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# The role of digital governance in the success of digital transformation in The Institute of Physical and Sports Education of the University of Algiers 3

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**Abstract**

The study aimed to highlight the role of digital governance in the success of digital transformation in Algerian universities and the purpose of the study was to know that digital governance played a role in the success of digital transformation, The descriptive curriculum was relied upon and the questionnaire was used as a research tool The study sample consisted of 30 professors from the Institute of Physical and Sports Education of the University of Algiers. After the statistical study, it was found that: Digital governance positively contributes to enhancing digital transformation skills at the Institute of Physical Education and Sports of University of Algiers 3, Digital governance positively impacts the formulation of digital strategies of the Institute of Physical Education and Sports in University of Algiers 3, Digital governance plays a positive role in improving digital technology at the Institute of Physical Education and Sports, University of Algiers3. This is through the effective application of D-governance concepts to ensure the success of digital transformation.

## Introduction

The rapid expansion of information and technological advancement has highlighted the critical link between technology and governance. Various concepts and terminologies have emerged to enhance and streamline the business environment, with governance and digital transformation standing out as particularly significant. Governance in digital transformation ensures that the impact of changes on various components and systems is regulated, providing a comprehensive analysis of variables influenced by evolving and adaptable characteristics. Recently, governance has become a crucial element in organizing operations within higher education institutions globally and regionally. It establishes guidelines for managing universities and monitoring their performance, especially as they adopt digital transformation initiatives and address expectations from students, faculty, and stakeholders. Additionally, universities are bound by regulations that govern data protection and confidentiality. Implementing effective governance frameworks helps institutions achieve budgetary goals, foster growth, and support development. (Al-Eisawi, 2003)

Governance has gained even greater prominence as many nations transition to advanced educational models that heavily integrate technology to drive sustained academic improvement. It strives to ensure fairness, transparency, and accountability, aligning with the interests of students and faculty. Governance mitigates power misuse, builds trust in the educational system, strengthens universities' societal roles, and enhances their ability to attract students and investments. Moreover, governance fosters the growth of the private education sector, boosting its competitiveness. It also aids universities in securing funding, generating revenue, and creating employment opportunities while complying with regulations and establishing systems of accountability to stakeholders. (Ali, 2013)

Digital governance plays a vital role in the success of digital transformation projects within universities. Institutions adopt structured IT governance frameworks to facilitate the effective execution of these projects. Digital transformation extends beyond simply integrating technology into academic institutions; it represents a comprehensive change that reshapes internal operations and external service delivery to students and the community.

The interconnected nature of digital transformation components emphasizes the importance of digital governance. Each modification within the transformation process affects other components, requiring a systematic approach to assess interdependencies among various units. Governance provides analytical tools to interpret these connections, reduce complexity

in control mechanisms, and address challenges arising from organizational integration or fragmentation. By doing so, governance supports digital transformation as a dynamic and interactive process that evolves over time, requiring ongoing structuring and coordination to solidify its frameworks amidst resistance and change. (Ghader, 2012)

Governance also manages the dynamic ecosystem of digital transformation, ensuring that adjustments in its elements align with academic and administrative objectives. This approach facilitates work that adapts to advancements, maintains stakeholder balance, achieves strategic goals, and uncovers promising opportunities.

Digital transformation seeks to enhance university performance by significantly improving operations, services, and outputs. Its primary aim is to transition institutions away from paper-based processes, boosting the efficiency and quality of academic and administrative tasks. By implementing digital transformation, collaboration among faculty and students becomes more streamlined, improving decision-making processes and making educational services more accessible through devices like smartphones and tablets. (Sulaiman, 2006).

By adopting digital transformation, collaboration between faculty members and students can be streamlined, improving decision-making processes in universities and ensuring that educational institutions remain accessible to students via devices such as smartphones and tablets. This approach broadens and improves educational services.

E-learning has emerged as a key component of higher education, offering an alternative to traditional methods by utilizing internet-based platforms to deliver knowledge and skills. This approach increases flexibility in teaching and learning, allowing students to access educational materials anytime, thereby enhancing their learning experience. (Areej, 2016, p. 28)

The adoption of e-governance in education has led to significant improvements in institutional systems and teaching methods. The internet now serves as a vital resource for both teachers and students, facilitating interaction and clarifying educational content. Furthermore, distance learning has provided a viable alternative to traditional education models, particularly in light of growing student populations that exceed the capacity of physical campuses. Research suggests that, when implemented effectively, distance education can be more impactful than traditional methods. The use of internet technologies has accelerated advancements in education, improving the performance of both educators and learners.

Distance education is considered an alternative to traditional education due to population growth and the inability of universities to accommodate the large number of students. Research conducted on this type of educational system has proven that it is more effective and impactful than the traditional system when all technologies are used efficiently. It is worth mentioning that the use of the internet in education has led to remarkable and rapid development in the educational process, as well as influencing the performance of both the teacher and the learner. (Shallali, 2014)

In recent years, digital transformation has become a strategic priority for many universities aiming to enhance academic excellence and improve the quality of education. By adopting these changes, institutions have saved time, effort, and resources while fostering productivity. Digital transformation has also created an innovative environment capable of competing on local and international levels. Despite its benefits, this shift presents challenges, including the need to update legal and educational frameworks to address risks, particularly as technological innovations outpace cybersecurity measures—one of the key obstacles faced by higher education institutions.

**The research problem:** From the above, we can raise the following issue:

- Does e-governance play a role in the success of digital transformation in higher education?.

From this main question, we can derive the following sub-questions:

- Does e-governance play a role in improving digital technology at the Institute of Physical Education and Sports at University of Algiers3?.
- Does e-governance play a role in improving digital transformation skills at the Institute of Physical Education and Sports at University of Algiers3?.
- Does e-governance play a role in developing digital strategies at the Institute of Physical Education and Sports at University of Algiers3?.

**The Previous Studies:**

**1. Study by Hawas et al. (2022):** This study examined the level of digital maturity and its impact on accelerating electronic governance in service-oriented government organizations. To achieve its objective, the descriptive-analytical method was employed. The research field focused on national ID and residence card offices in Samarra, Iraq. The study population and sample included 41 employees. The findings revealed that the organizations under study had a low level of digital maturity, which negatively impacted the governance of electronic services provided by these organizations.

**2. Study by Los (2022):** This study addressed the essential requirements for information and communication technology (ICT) projects to achieve digital transformation at Sohag University in Egypt. The study sample was selected using a survey approach and consisted of 293 participants. The research concluded that there is a weakness in the IT infrastructure, insufficient information and data security measures, and a shortage of qualified and trained personnel working in ICT system projects.

**3. Study by Al-Musallamani (2022):** This study focused on digital transformation in Egyptian universities and emphasized that digital governance plays a significant role in enhancing the digital skills of employees and faculty members by creating an environment that encourages continuous training and innovation.

**4. Study by Chopra (2019):** Chopra's study focused on adapting and applying the (DigCompOrg) framework developed by the Joint Research Centre and the European Commission, which is specifically designed to assess and enable universities to effectively integrate and utilize digital learning technologies. The researcher used this framework to measure electronic governance in higher education institutions in India. The study conducted a comprehensive survey of the literature and research available on academic research websites during the period 2010–2018. The findings indicated that electronic governance contributes to improving technology in universities, contingent on the success of its implementation. The study identified several factors that influence the success of IT implementation in universities, including IT infrastructure, senior management support, the degree of functional autonomy for digitization managers, and the necessary budget support for IT projects.

**5. Study by Al-Eisawi (2003):** This study explored how digital governance systems can be utilized to enhance planning and development within institutions. It highlighted that digital governance contributes to the formulation of effective digital strategies by improving resource management and clearly defining objectives.

**Importance of the Study:** The importance of this research lies in emphasizing the need to expand the implementation of digital transformation in the current university educational environment. Additionally, it serves those interested in this field, including writers and researchers, by exploring the contribution of digital governance in enhancing digital transformation in higher education. This includes improving the quality of education, facilitating access to academic resources,

and enhancing interaction between students, faculty members, and administration.

**Objectives of the Study:** This research aims to highlight the nature of digital transformation in higher education and shed light on the relationship between electronic governance and digital transformation in this domain. Based on the research problem and its significance, the main objectives were identified as follows:

- To clarify the role of digital governance in ensuring the success of digital transformation at the Institute of Physical Education and Sports at the University of Algiers 3.
- To explain the role of digital governance in improving digital technology at the Institute of Physical Education and Sports at the University of Algiers 3.
- To illustrate the role of digital governance in enhancing digital transformation skills at the Institute of Physical Education and Sports at the University of Algiers 3.
- To identify the role of digital governance in developing digital strategies at the Institute of Physical Education and Sports at the University of Algiers 3.

**Definitions of Concepts and Terms:**

**A. Digital Transformation:** Digital transformation is generally defined as the complete or partial shift to electronic processes through automation and governance. Several definitions have been provided, including:

1. Digital transformation is "the process of transforming the business model of government institutions or private sector companies into one that relies on digital technologies for delivering services, manufacturing products, and managing human resources" (Al-Baz, 2018, p. 2).
2. It is defined as "the change associated with applying digital technology across all aspects of society."
3. Digital transformation reshapes how people live, work, think, and interact through the use of available technologies with continuous planning and efforts to reformulate professional experiences (Mohamed & Al-Ghubairy, 2020, p. 8).
4. Lastly, it is defined as "a process of transitioning companies to a business model reliant on digital technologies to innovate products and services, creating new revenue channels and opportunities that enhance the value of their products" (Bouachi & Jamila, 2019, p. 459).

**B. Governance:**

**I. Concept of Governance:** Certain terms in English have clear and widely accepted Arabic translations. However, the term "Governance" lacks a fully agreed-upon Arabic equivalent, which is compounded when combined with terms like "Corporate" to form phrases such as "Corporate Governance." The most commonly used Arabic translation for governance is "حوكمة" "Hawkamah," which refers to corporate or institutional governance.

Governance is defined as "a framework that outlines flexible structures, including a set of rules, systems, and procedures governing the relationships among key parties in a work system, while defining goals and pathways. Governance ensures systems that regulate relationships among key stakeholders impacting performance, with four fundamental principles: justice, accountability, transparency, and responsibility, within a framework aimed at achieving its objectives and strategies" (Rashwan, 2017).

**II. Definition of Digital Governance:** Governance entered the business domain widely, especially after financial scandals involving major global companies, such as Enron, which led to significant financial losses. This highlighted the need to establish procedural frameworks enabling managers to make sound decisions aligned with institutional goals and strategies.

Digital governance involves creating integrated standards for measuring performance, ensuring cohesion between internal and external operations, and integrating technological advancements to enhance information exchange, administrative transactions, and the seamless interaction of systems and departments.

**II. Definitions of Digital Governance:**

1. "Digital governance is the reinvention of businesses through new methods to integrate and connect information, providing access through online platforms".
2. It is "a new and advanced approach—a technological revolution leading to a qualitative leap in government and private sector progress, transforming traditional administration to electronic transactions. In short, digital governance is the application of internet technologies across governmental and non-governmental sectors" (Shahid et al., 2016, p. 122).

## 2. Method and Materials :

**Adopted Methodology:** The descriptive method was used as it is considered the most appropriate for the nature of the problem posed in this study.

**Study Population:** The study population consisted of professors from the Institute of Physical Education and Sports at the University of Algiers 3.

**Study Sample:** The sample included 30 professors from the Institute of Physical Education and Sports at the University of Algiers 3.

**Study Fields:**

- **Human Field:** Professors from the Institute of Physical Education and Sports at the University of Algiers 3.
- **Spatial Field:** Institute of Physical Education and Sports at the University of Algiers 3.
- **Temporal Field:** From 24/11/2024 to 28/11/2024.

**Tools Used:** The study relied on a questionnaire, prepared by the researcher, that addressed the research questions and was divided into two main axes: digital technology and digital transformation skills. The questionnaire contained 30 statements, with each axis comprising 15 statements. The psychometric properties of the questionnaire were studied by distributing it to a sample of 30 professors. The data were statistically processed using SPSS software version 24.

**Tool Validity:** The validity was determined as the square root of the reliability coefficient of the questionnaire, which represents the stability coefficient.

Self-validity = √Reliability = √0.83 = 0.91.

**Tool Reliability:** The questionnaire was tested on a sample of 30 professors, and the reliability coefficient was calculated using Cronbach's Alpha, resulting in 0.83, which indicates high reliability. This demonstrates that the measurement tool is consistent.

**Statistical Methods:** To extract the results, the study tool was applied to the sample. The response scale for the questionnaire items included three responses: Yes (3 points) / Sometimes (2 points) / No (1 point)

**Statistical Processing**: After collecting the questionnaires, they were coded, entered into a computer, and statistically processed using SPSS software version 24.

**The statistical methods included:**

- *Alpha Cronbach coefficient to determine the coefficient of the study tool.*

| Dimensions | Number of items | Number of participants | Alpha Cronbach value |
|---|---|---|---|
| Digital technology | 10 | 30 | 0.85 |
| Digital transformation skills | 8 | 30 | 0.83 |
| Digital strategies | 12 | 30 | 0.87 |
| Overall dimensions | 30 | 30 | 0.86 |

**Table (01): Alpha Cronbach**

- Metrics of descriptive statistics to describe the sample of the study and show its characteristics. These methods are the arithmetic average (Mean) and standard deviations to answer the study's questions.
- Chi-square test ($\chi^2$).
- *We a1so used the Three-point likert scale, and the questionnaire includes 3 grades:*

| Likert sca1e descriptions | Disagree | Agree | Tota11y agree |
|---|---|---|---|
| Likert sca1e | 1 | 2 | 3 |
| The Range | [1.66 ; 1] (Low) | [2.33 ; 1.67] (Medium) | [3 ; 2.34] (High) |

**Table 02: Three-point 1ikert sca1e**

To determine the values of the arithmetic average, being in which category this is done by finding:

- RANGE = largest value - lowest value = 3 - 1 = 2.

Then we divide the range by the number of categories 3/2 = 0.66 and then add to it (0.66) to the minimum scale to become as follows:

[1.66 ; 1] Disqgree (Low) / [2.33 ; 1.67] Agree (Medium) / [3 ; 2.34] Tottaly agree (High)

## 3. Results:

## Analysis and Discussion of Hypotheses:

| Hypothesis | Degrees of Freedom (DF) | Chi-square calculated | Chi-square Tabulated | Significance |
|---|---|---|---|---|
| First Hypothesis | 1 | 13,87 | 3,84 | 0.000 |
| Second Hypothesis | 1 | 28,76 | 3,84 | 0.000 |
| Third Hypothesis | 1 | 33,36 | 3,84 | 0.000 |

Table (03): Study Hypotheses Results

| | Expected Frequency | Observed Frequency |
|---|---|---|
| Positive | 20 | 15 |
| Negative | 10 | 15 |
| Total | 30 | 30 |

Table (04): Distribution of Observed Frequencies for the First Hypothesis ("The role of digital governance in improving digital technology at the Institute of Physical Education and Sports, University of Algiers 3")

| | Expected Frequency | Observed Frequency |
|---|---|---|
| Positive | 23 | 15 |
| Negative | 07 | 15 |
| Total | 30 | 30 |

Table (05): Distribution of Observed Frequencies for the Second Hypothesis ("The role of digital governance in improving digital transformation skills at the Institute of Physical Education and Sports, University of Algiers 3")

| | Expected Frequency | Observed Frequency |
|---|---|---|
| Positive | 24 | 15 |
| Negative | 06 | 15 |
| Total | 30 | 30 |

Table (06): Distribution of Observed Frequencies for the Third Hypothesis ("Digital governance has a positive role in establishing digital strategies at the Institute of Physical Education and Sports, University of Algiers 3")

**Analysis and Discussion of the First Sub-Hypothesis:** "Digital governance has a positive role in improving digital technology at the Institute of Physical Education and Sports, University of Algiers 3."

From the results shown in Table (03), the calculated Chi-square value (33.36) is greater than the tabulated Chi-square value at 1 degree of freedom and a significance level of 0.05 (3.84). Comparing the two values reveals that the calculated Chi-square value > tabulated Chi-square value (33.36 > 3.84), which is statistically significant. Additionally, the results in Table (04) indicate a positive observed frequency of 20 out of 30 repetitions, confirming that digital governance improves digital technology at the Institute of Physical Education and Sports, University of Algiers 3.

Based on the findings from questions (01) to (10), digital governance aids in improving digital technology by setting clear standards and procedures for using digital technology within the institute. This ensures the unification of processes and practices, enhances operational efficiency by effectively

managing technical resources, and fosters innovation through the promotion of research and development in digital technology. It also helps identify and assess risks associated with digital technology usage and develop contingency plans for emergency situations such as cyber-attacks or system failures. Additionally, it contributes to organizing training programs to enhance the digital technology skills of staff and faculty members, encouraging continuous professional development to stay abreast of technological advancements.

These findings support the first hypothesis, which states that digital governance improves digital technology at the Institute of Physical Education and Sports, University of Algiers 3. This is further supported by Chopra's (2019) study, which concluded that e-governance contributes to improving technology in universities. However, its success depends on factors like IT infrastructure, top management support, and adequate budgeting for IT projects. Thus, this hypothesis is confirmed.

**Analysis and Discussion of the Second Sub-Hypothesis:** "Digital governance has a positive role in improving digital transformation skills at the Institute of Physical Education and Sports, University of Algiers 3."

From Table (03), the calculated Chi-square value (28.76) exceeds the tabulated Chi-square value at 1 degree of freedom and a significance level of 0.05 (3.84). Comparing the two values reveals that the calculated Chi-square value > tabulated Chi-square value (28.76 > 3.84), which is statistically significant. Table (05) shows a positive observed frequency of 23 out of 30 repetitions, confirming that digital governance plays a role in improving digital transformation skills at the institute.

The findings from questions (10) to (18) indicate that digital governance enhances digital transformation skills among employees and faculty members by evaluating performance and encouraging continuous improvement through performance indicators, constructive feedback, and fostering ongoing learning. It supports technical infrastructure by providing the necessary tools and technologies to enable digital learning and training, creating a supportive work environment that uses technology effectively to motivate staff and faculty members to develop their digital skills.

These findings align with the study by Lamiaa Ibrahim Al-Muslimani (2022), which focused on digital transformation in Egyptian universities and highlighted that digital governance significantly improves digital skills by fostering continuous training and innovation. Hence, this hypothesis is also confirmed.

**Analysis and Discussion of the Third Sub-Hypothesis:** "Digital governance has a positive role in establishing digital strategies at the Institute of Physical Education and Sports, University of Algiers 3."

From Table (03), the calculated Chi-square value (33.36) surpasses the tabulated Chi-square value at 1 degree of freedom and a significance level of 0.05 (3.84). Comparing the two values reveals that the calculated Chi-square value > tabulated Chi-square value (33.36 > 3.84), which is statistically significant. Table (06) indicates a positive observed frequency of 23 out of 30 repetitions, demonstrating that digital governance contributes to establishing digital strategies at the institute.

The findings from questions (18) to (30) show that digital governance plays a crucial role in designing and implementing digital strategies by providing a comprehensive and organized framework that ensures the efficient and effective achievement of digital goals. It helps in defining priorities, setting clear objectives, and directing resources toward impactful projects. Furthermore, it supports accurate data analysis for informed decision-making and establishes risk management frameworks to address potential challenges related to digital transformation.

This aligns with Al-Eisawi's (2003) study, which emphasized that the optimal use of digital governance systems significantly enhances planning and development within institutions. It also highlighted that digital governance aids in developing effective digital strategies by improving resource management and clarifying objectives. Thus, this hypothesis is confirmed.

**Analysis and Discussion of the General Hypothesis:** "Digital governance plays a role in the success of digital transformation at the Institute of Physical Education and Sports, University of Algiers 3."

Based on the confirmation of the sub-hypotheses, the general hypothesis is also validated. The findings underscore the significant role of digital governance in driving digital transformation, which has become an essential requirement in higher education. Expanding the adoption of digital transformation will positively impact various aspects, necessitating strategic planning to enhance educational institutions struggling with limited digital infrastructure, lack of expertise, and insufficient specialized staff.

By fostering digital excellence, institutions can improve their services, products, and overall contribution to the knowledge-based society. Thus, the general hypothesis is confirmed.

## 4. Conclusion

Digital governance (e-governance) is one of the key solutions that can be relied upon to ensure the success of digital transformation in universities. Numerous studies have demonstrated the role of governance in achieving successful digital transformation. It serves as the most effective lever for success, as institutions with effective governance contribute to achieving returns on their investments, reduce the risks they face, and gain competitive advantages compared to institutions without effective governance. This study aimed to explore the role of governance in achieving digital transformation and enhancing the performance of universities.

The study yielded the following key findings:

- Digital governance plays a positive role in improving digital technology at the Institute of Physical Education and Sports, University of Algiers 3.
- Digital governance positively contributes to enhancing digital transformation skills at the Institute of Physical Education and Sports, University of Algiers 3.
- Digital governance positively impacts the formulation of digital strategies at the Institute of Physical Education and Sports, University of Algiers 3.
- Digital governance is a key factor in the success of digital transformation at the Institute of Physical Education and Sports, University of Algiers 3.

**In conclusion, we recommend that universities and educational institutions consider the following:**

- Adopting e-governance concepts and implementing them effectively, as they provide a comprehensive framework for achieving successful digital transformation.
- Enhancing digital governance by applying e-governance principles effectively to ensure digital transformation success.
- Strengthening training programs by providing continuous training for faculty members and staff on the use of digital technologies.
- Developing infrastructure and investing in improving the technological infrastructure in universities, and encouraging innovation by fostering creativity in utilizing digital technologies to enhance educational services. And Fostering partnerships through collaboration with the private sector and technology firms to develop advanced digital solutions.

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