The Role of Digital Transformation in Improving Skills and competencies of students in Saudi arabia's Univercities and Achieving Vision 2030

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Abstract

The study investigated the role of digital transformation in improving skills and competencies of students in Saudi arabia's univercities and achieving vision 2030 , case study king khalid univercity. The problem of the study was represented in the study the role of digital transformation in improving skills and competencies of students in Saudi arabia's univercities and achieving vision 2030, and achieving Aseer Strategy. The study significance rises from that digital transformation play a great role in improving the mental image among community's institutions and people towards the learning outcomes at the king khalid university. The study aimed to identify the role of digital transformation in improving skills and competencies of students in Saudi arabia's univercities and achieving vision 2030 through improving the learning outcomes for 2030. The descriptive analytical approach was adopted in order to measure the relationship between digital transformation and improving skills and competencies of students in King Khalid University, through collecting primary and secondary data from the previous literature (previous research and studies. The study was carried out on the population of King Khalid University. A sample was randomly seclected of (55) from the teaching staff of the university. A questionnaire was designed and distributed to the study sample. The study verified the following hypotheses: There is no a statistically significant relationship between digital transformation and promoting cognitive skills of King Khalid University students. There is no a statistically significant relationship between the significance of digital transformation and fulfilling and promoting academic and life skills of King Khalid University students. There is no a statistically significant relationship between digital transformation and raising the efficiency of King Khalid University students. The study concluded the following findings: There is a statistically significant relationship between digital transformation and enhancement of cognitive skills of King Khalid University students. There is a close relationship between digital transformation and improving university performance and the positive impact of electronic participation on learning outcomes. There is a statistically significant relationship between digital transformation and enhancement of scientific skills of King Khalid University students. The researchers recommended the following: King Khalid University students' cognitive and scientific skills should be enhanced and their learning efficiency should be increased.

Keywords: Digital transformation, Improving, Skills , competencies.

1. Introduction

The current world orientation in the field of education, particularly university education, tends towards the learner-centred education, also known as output-centred education, instead of the traditional teacher-centred method. Output is the statements that describe the final educational results expected from the educational process. Those results including knowledge, understanding and ability to perform that expected to appear on the learner the program plans to achieve through determined activities, strategies and assessment methods to assess to what extent those results are achieved. (Department of Research and Studies, Ministry of Education, 1443 AH. At King Khalid University, there are number of colleges. As the university has particular objectives and visions, each college has its own objectives departments programs and academic paths as well. Therefore, the general objectives of the university change into specifically determined objectives that integrate altogether to achieve the objectives and output of program. In this respect, in 2007, Dicklan Kenedy published his book "Writing and Unising Learning Outcomes: A Practical Guide", which then translated into several languages. This encouraged organizations and institutions, particularly, higher education institutions to adopt transitional strategies to move from the traditional education to learning outcomes based education. Accordingly, the educational institutions utilized the developments in communication technology to spread the culture of using learning outcomes strategy in education. electronic governance is one of those methods, means and jobs that appear thanks to the developments in communication technology. Technology became one of the most important factors affecting the reconstruction of communication structure for this vital (crucial) and significant job encouraging those who are interested in this field to conduct many research.

Digital transformation is the process of transformation of the model of government institutions or private sector into a model that depends on digital technology in providing service, manufacturing products and managing human resources (Hammad, 2020).

Digital transformation is the transformation of the way companies work so that monotonous work is reduced and time to think about development increases. Digital transformation is accelerating the way daily work is done, so that the great technological development that has occurred is exploited to conduct business faster and better. Digital transformation is increasing efficiency in workflow so that errors decrease and productivity increases. Digital transformation is increasing the number of your team without the need to hire. Digital transformation represents a process of change in the infrastructure of institutions and companies. Digital transformation is using technology and facilitating the digital environment to modify internal and external processes and improve the experience (Nosair, 2021). This transformation is limited to companies that sell digital products or focus on the Internet and technology, but rather affects all fields, departments, commercial services, ministries and government organizations.

Problem of the Study

The problem of the study focused on identifying the role of digital transformation in improving skills and competencies of students in Saudi arabia univercities and achieving vision

2030, through promoting skills and competencies and improving performance . In order to achieve the objectives of this study, the problem has centred on the following main question:

To what extent digital transformation is significant in promoting, developing and improving skills and competencies at King Khalid University and in achieving Aseer Strategy?

The sub-questions are represented in:

1- Do digital transformation contribute to acquiring graduates learning skills required for King Khalid University students?

2- Do digital transformation contribute to acquiring graduates cognitive, motor and psychological skills required for King Khalid University students?

3- Do digital transformation contribute to raising the efficiency of King Khalid University students in general?

Significance of the Study

Digital transformation play a great role on improving mental image among community indivuals and civil society institutions about the importance of performance at the university. They also contribute to the development of skills and competencies which in turn lead to the filfullment of labor market needs and to the achievment of Aseer Strategy and Vision to 2030. digital transformation also may contribute to the establishment of quality standards for learning outcomes and the explanation of visions paths to the improvement and development of educational programs. Digital transformation participate in organizing cooperating and competitive comparisions that are compitable with local, regional and international standards, in addition to their role on evaluating and assessing education system performance.

Objectives of the Study

1- The study attempts to identify the role of digital transformation on promoting the vision and mission of King Khalid University through improving the quality of performance ,skills and competencies .

2- Determine the skills and competencies at King Khalid University.

3- Conclude recommendations to improve and promote the skills and competencies at King Khalid University.

Hypotheses of the Study

A. Hypothesis one: There is no a statistically significant relationship between digital transformation and promoting cognitive skills of King Khalid University students.

B. Hypothesis two: There is no a statistically significant relationship between the significance of digital transformation and filfulling and promoting academic and life skills of King Khalid University students.

C. Hypothesis three: There is no a statistically significant relationship between digital transformation and raising the efficiency of King Khalid University students.

D. Hypothesis four: There is no a statistically significant relationship between digital transformation and demographic variables of the study sample.

2. Methodology of the Study

1. Method and Tools of the Study

The descriptive analytical approach was used to measure the relationship between digital transformation and promoting performance and skills at King Khalid University. Primary and secondary data were collected from previous literature (previous research and studies). The tool of the study was prepared; a questionnaire was designed on (website) an electronic link, directed to a random sample of the teaching staff at colleges of King Khalid University. The (website) electronic link was distributed to a pilot (an experimental) sample from the teaching staff and specialized experts in order to benefit from their opinions and suggestions. The questionnaire validity and reliability were measured using Cronbach Scale.

2. Population and Sample of the Study

a. Population of the Study

The population of the study consisted of the teaching staff working at a number of King Khalid University colleges located in Abha city south western of the Kingdom of Saudi Arabia established in 1419 AH during the visit of the Custodian of the Two Holy Mosques King Abdallah bin Abdalaziz when he was the Crown Prince on Tuesday 09/01/1419 AH. During the visit a decision was made according to which two branches of Imam Mohamed bin Saud Islamic University and King Saud University located in Aseer area were incorporated under the name University of King.

b. Sample of the Study

The sample of the study was (55), the questionnaire was distributed to a the selected sample of the teaching staff members. (52)of the distributed copies of the questionnaire were answered equaling (94.5%) of the study population consisted of (52) individuals.

c. Information Resources of the Study

Primrary studies: include the field study – the questionnaire.

Secondary studies: include the previous studies – books – journals – websites – the Internet.

Research procedures: digital transformation — Improving – skills .

Limitation of the study

Spacial limits: King Khalid University.

Time limits: 2023/2024.

Previous Studies

Alutaybi (2007) The study aimed to describe and analyze the inappropriateness/incompitability of Saudi higher education outcomes and labour market, and to identify the business sector requirements from higher education institutions. The descriptive approach was used in data collection and analysis. Previous research relevant to the topic were reviewed and recrutement managers were interviewed. The study concluded that; there was private sector orientation towards higher education graduates. There was need for scientific specializations and English language and computer and there was weakness in sicientific specializations compated to theoretical ones.

Al-Hueidi & Taha (2022) study entitled: The role of digital transformation on supporting organizational entrepreneurship. The study mainly aimed to investigate the role of digital transformation on supporting organizational entrepreneurship. The research contained five parts a general framework, a theoretical framework of digital transformation, a theoretical framework of organizational entrepreneurship and the relationship between digital transformation and organizational entrepreneurship. The study adopted the Statistical Package for Social Science (SPSS). The study results showed the concept and dimensions of digital transformation, the concept and dimensions of organizational entrepreneurship and the relationship between digital transformation and organizational entrepreneurship.

Abd-Alaziz & Nabeel (2021) study entitled: The reflections of integration between entrrprise resources planning (ERP) and resource consumption accounting (RCA) under the digital transformation for supporting competitiveness. The study mainly aimed to investigate and analyze the impact of integration between the system of institution's resource planning and resource consumption accounting under the digital transformation for supporting organization's competitiveness. The study also aimed to explain the role of resource consumption accounting for determining modern cost system on supporting statistical methods used in the study. The researcher adopted the Statistical Package for Social Science (SPSS). The researcher concluded the following results; the organization's competitive advantage is affected by two factors the competition it faces and its competitive position. The organization's resource planning system and the organization's resource consumption accounting system can contribute to increasing and improving the efficiency of products' quality and the good cost management, and therefore, increasing the capacity of operational processes of the organization. The field study also confirmed that there is a significant relationship between the integration between both organization's resource planning system and resource consumption accounting system under digital transformation for supporting industrial organizations' competitiveness.

Rshwan & Abu Arab (2022) study entitled: The role of digital transformation on improving the quality of internal auditing process. The study aimed to identify the role of digital transformation on improving the quality of internal auditing process. The study adopted the Statistical Package for Social Science (SPSS). The researcher concluded the following results; using digital transformation contributes to ensuring the quality of internal auditor's performance,

ability to use electronic data facilitates accomplishment and execution of auditing process at a high accuracy and makes vital changes in organizing and planning of the auditing process at a high accuracy.

Osama et al (2018) The study aimed to contribute to achieving Vision 2030, to match the learning outcomes quality at Saudi universities with their role on on fillfulling Saudi labor market requirements according to Vision 2030 and to identify the university and community viewpoint and to what extent they are satisfied with outcomes quality. The study adopted the descriptive approach. A sample was selected from universities which have institutional accrediation to 01/01/2018, teaching staff and business owners. The study showed that the overall satisfaction was very good with mean (3.59). The study recommended universities to consider the requirements of KSA Vision 2030.

Younus (2011)). The study aimed to identify to what extent Saudi universities able to filfull KSA Vision 2030 requirements for labor market needs. The study adopted the descriptive approach. A questionnaire was used as data collection tool and distributed to a sample of (74) from recruitment managers at some of companies and corporations of provate sector, (72) from teaching staff members at King Saud University and (105) students. The study showed the following: The university graduates were not matching labor market needs because students were not distributed to university specializations, university academic programs were not appropriate to labor market needs, labor sectors officers did not participate in making university admission policy, university did not coordinate with workforce planning bodies. University graduates were not employed because they are not comptent in English language, computer science and professional skills.

Rachida.bougri Mohamed El-Amine NOUI (2021) The aim of the study is to apprehend the role of the university governance in harmonizing higher education outputs with the labor market requirements. introduced in the literature part the study axes: the university governance and the market requirements, whereas in the empirical part, the study presented the results of the statistical survey of some Arabic universities, comparing them to other European universities in terms of graduates' status in labor market and the reflection of the applied principles of governance on their qualifications and professional skills. Results showed that Arab universities did not apply the university governance principles that serve the outputs of higher education, which is reflected in the employment low rates after graduation compared to those of the European universities, where their graduates are distinguished with a high rate of employment by the labor market.

The Kingdom's Vision (2030) highlighted the governance of digital transformation as one of the digital strategies. Governance of digital transformation means to establish organizational relations between the system of business and the technological systems and to determine how these systems help employees using technology in performing their work within a flexible framework and well defined limits. The governance of digital transformation contributes to measuring to what extent systems and decisions are provided and implemented, quality and excellence of performance are achieved, appropriate and effective methods are used in achieving

the organization's plans and objectives. It is also known as a system that works on governing relations between the basic parties.

Wahba (2023) stated that the digital governance aims to governing and organizing the institution's works related to digital transformation and this contributes to achieving an optimal benefit from the available resources and avoiding replication and optimal using of common platforms.

Digital transformation positively affects the process of governance and audit within institutions depending on the modern digital transformation toolkit such as computers and the Internet. Using modern accounting information systems affects the use of quality technology in audit performance.

Al-Shareida & Al-Samarrai (2021) indicated the effect of industrial revolution and governance of digital transformation on the audit. They stated that there are equipment of data collection such as sensors and built-in computers and program units that collect data on all over the company and external parties related such as suppliers and customers through a network that submits data at a time close to the actual time. Audit will depend on data analysis technology in building audit models that control product and identify errors resulting from machines and equipment and save costs and facilitate decision process. So cold "Audit exception" will be used in order to draw attention towards the major problems in automated auditing process.

In the near future, audit will depend on a visual digital global representation that reflects all processes coherently helping to analyze not only financial but also non-financial aspects. The expected approach of auditing process will restore its balance and enable it to protect self. this approach will be applicable on many types of external, internal and specialized audit. Fourth Industrial Revolution Technologies will submit information automatically to the degree that reporting, exchanging and auditing them will be performed without any manual intervention. Auditing without manual intervention indicates that this auditing types steps do not provide any value added and it is just unnecessary friction that should be removed of the auditing system.

3. Data Analysis and Results

A- Analysis of the Sample Demographic Information

Table (1): Gender

Gender	Frequency	Percent
Female	32	61.5%
Male	20	38.5%
Total	52	100.0

The table (1) above shows the gender distribution of the study sample; there were 32 with 61.5% females and 20 with 38.5% males. This indicates that most of the study sample were females.

Table (2): Age

Age	Frequency	Percent
From 20 years to less than 31 years	12	23.1%
From 31 years to less than 41 years	2	3.8%
From 41 years to les than 50 years	38	73.1%
Total	52	100.0

The table (2) above shows the age distribution of the study sample; there were 12 with 23.1% their age between (20 - 30), 4 with 3.8% their age between (31 - 40) and 40 with 73.1% their age between (41 - 50). This indicates that most of study sample their age between (41 - 50).

Table (3): Scientific Degree

Scientific degree	Frequency	Percent
Professor	4	7.7%
Assistant Professor	30	57.7%
Associate Professor	4	7.7%
Lecturer	8	15.4%
Teaching Assistant	6	11.5%
Total	52	100.0

The table (3) above shows the scientific degree distribution of the study sample; there were 4 with 7.7% their scientific degree professor, 30 with 57.7% assistant professor,4 with 7.7% associate professor, 8 with 15.4% lecturer and 6 with 11.5% their scientific degree was teaching assistant. This indicates that most of study sample their scientific degree assistant professor.

Table (4): Number of years in service

Number of years	Frequency	Percent
(3 years and less)	6	11.5%
(More than 10 years)	22	42.3%
(From 4 to 6 years)	6	11.5%
(From 7 to 10 years)	18	34.7%
Total	52	100.0

The table (4) above shows the distribution of the study sample number of years in service; there were 6 with 11.5% their number of years in service (3 years and less), 22 with (more than 10 years), 6 with 11.5% (from 4 to 6 years) and 18 with 34.7% (from 7 to 10 years). This indicates that most of study sample their number of years in service (more than 10 years).

Table (5): Nationality

Nationality	Frequency	Percent
Saudi	8	15.4%
Non-Saudi	44	84.6%
Total	52	100.0

The table (5) above shows the distribution of the study sample nationality; there were 8 with 15.4% Saudi, 44 with 84.6% non-Saudi. This indicates that most of the study sample were non-Saudi.

B- Reliability and validity coefficients for the questionnaire list:

Table (6): Reliability and validity of the questionnaire

Dimensions	Reliability	Validity	Number of Statements
First Aspect	0.859	0.927	٤
Second Aspect	0.906	0.952	١١
Third Aspect	0.957	0.978	٧
Total questionnaire statements as a whole	0.963	0.981	٢٢

Scale reliability: From the table (6) above, it was found that the reliability coefficient for each dimension and aspect of the study was higher than (0.50), and that the stability coefficients for the questionnaire list as a whole were (0.963). Thus, the questionnaire list is characterized by a high degree of stability.

Scale validity: From the table (6) above, it was found that the degree of validity coefficient for each dimension and aspect of the study was higher than (0.60) and that the validity coefficients for the questionnaire list as a whole was (0.981).

C- Descriptive Statistics of the Field Study Results

1. Analysis of the Statements of digital transformation and Enhancement of Cognitive Skills

Table (7): The mean, standard deviation, and relative significance of the statements for digital transformation and enhancement of cognitive skills

No.	Statement	Mean	SD	Relative Sig.	Ranking
1	Digital transformation at the university attempts to make local community institutions and people more aware of university's role in achieving the development in the area.	3.86	0.945	77.24%	٤
2	Digital transformation builds strong relation with various publishing and advertisement media to show the university role in achieving vision 2030 .	3.90	1.103	77.93%	٢
3	Digital transformation spreads the spirit of creativity and communication among university's staff to achieve the objectives of the university.	3.93	0.876	78.62%	١
4	Digital transformation works to enhancing transparency in decision-making processes	3.90	1.003	77.93%	٢
Mean of dimension		3.9٠	0.826	78.28%	

The table (7) above shows the total responses of the sample individuals to the statements related to digital transformation and enhancement of cognitive skills was high, with mean of (3.90) and standard deviation of (0.826).

The highest response of the sample individuals was given to the statement: " digital transformation spread the spirit of creativity and communication among university's staff to achieve the objectives of the university."

The least response of the sample individuals was given to the statement: " digital transformation at the university attempts to make local community institutions and people more aware of the university's role in achieving the development in the area."

2.Analysis of the Statements of digital transformation and Enhancement of Scientific Skills

Table (8): The mean, standard deviation, and relative significance of the statements for digital transformation and enhancement of scientific skills

	Statement	Mean	SD	Relative Sig.	Ranking
	Digital transformation adopts a strategy to make positive image of the university among community and market sectors.	3.86	0.868	77.24%	7
	Digital transformation contributes to managing crises facing the university and preparing campaigns to overcome them.	3.93	0.876	78.62%	4
	Digital transformation always communicates with members and audience of the external environment to identify their needs.	3.62	1.04	72.41%	11
	Digital transformation uses technological programs to make university's staff aware of improving performance importance and role in spreading the culture of hardworking, perseverance and distinction.	3.79	1.166	75.86%	8
	digital transformation guses social media to spread the culture of spirit of competition among university's staff.	3.66	0.928	73.10%	10
	Digital transformation works to effective participation between the administrative staf, the teaching staff, and the students in making administrative decisions and finding appropriate solutions to problem	3.93	0.835	78.62%	4
	Improving skills contributes to increasing students' awareness of the importance of acquiring knowledge and theoretical concepts of their specializations	4.07	0.835	81.38%	1
	Learning outcomes determines the types of students' communication skills.	3.93	0.876	78.62%	4
	Clear skills makes local community institutions and people more aware of that the graduates are able to fulfill the labor market requirements.	4.00	0.879	80.00%	3
	Learning outcomes includes students' understanding skills.	4.03	0.858	80.69%	2
	Digital transformation works on accountability that lead to improve learning outcomes monitoring work and following up on the results.	3.79	0.932	75.86%	8
f dimension		3.87	0.662	77.49%	

The table (8) above shows the total responses of the sample individuals to the statements related to digital transformation dimension and enhancement of scientific skills was high, with mean of (3.87) and standard deviation of (0.662).

The highest response of the sample individuals was given to the statement: "improving skills contribute to increasing students' awareness of the importance of acquiring knowledge and theoretical concepts of their specializations."

The least response of the sample individuals was given to the statement: " digital transformation always communicates with members and audience of the external environment to identify their requirements."

3. Analysis of the Statements of digital transformation and Increasing Students' Efficiency

Table (9): The mean, standard deviation, and relative significance of the statements for digital transformation and increasing students' efficiency

No.	Statement	Mean	SD	Significance	Ranking
1	Digital transformation determine the means of increasing the spirit of creativity among students.	3.86	0.945	77.24%	4
2	Digital transformation clarify the methods of enhancing students' ability to carry responsibility.	3.93	0.835	78.62%	2
3	Digital transformation explain how to analyze and solve problems.	3.83	0.881	76.55%	5
4	Digital transformation determine the methods of making right decisions.	3.76	0.942	75.17%	7
5	Digital transformation clarify the methods of teaching students the analysis and prediction of behavioral problems.	3.83	1.028	76.55%	5
6	Digital transformation determine the means of self-learning.	4.14	0.826	82.76%	1
7	Digital transformation contribute to explaining the methods of teaching students critical thinking.	3.93	0.876	78.62%	2
Mean of dimension		3.89	0.809	77.93%	

The table (9) above shows the total responses of the sample individuals to the statements related to Digital transformation dimension and increasing students' efficiency was high with mean of (3.89) and standard deviation of (0.809).

The highest response of the sample individuals was given to the statement: " Digital transformation determine the means of self-learning."

The least response of the sample individuals was given to the statement: " Digital transformation determine the methods of making right decisions."

D- Verification of the Study Hypotheses:

1. Hypothesis one:

There is no a statistically significant relationship between Digital transformation and enhancement of cognitive skills.

In order to verify this hypothesis, the researcher conducted the following tests:

A- Coefficient of correlation:

The table below shows the correlation coefficient between digital transformation as an independent variable and cognitive skills as a dependent variable.

Table (10): Coefficient of correlation for hypothesis one

Variable	Test	Cognitive skills
cognitive skills	Correlation coefficient	٠,٨٩4
	Significance	٠,٠٠٠

The table (10) above shows that there is a statistically significant correlation by 89.4% at significance level 0.05 between digital transformation and cognitive skills.

B- Coefficient of determination:

Table (11): Coefficient of determination for hypothesis one

Independent variable	Coefficient of determination	Modified coefficient of determination	S.E
cognitive skills	0.804	.٠801	0.34891

The table (11) above shows that the coefficient of determination 0.804 = R^2 which means that digital transformation interprets the change in cognitive skills by 80.4%, while the rest of percent are interpreted by the other variables that were not included into the regression relation, in addition to random errors resulted from the sampling method, measurement accuracy and others.

C- ANOVA Test:

Table (12): ANOVA Test for hypothesis one

Statement	Sum of squares	DF	Mean of squares	F	Significance
Regression	28.225	1	28.225	231.848	.000٠
Residuals	6.817	55	0.124		
Total	35.042	56			

The table (12) above shows that there is a significant direct correlation between digital transformation and cognitive skills; that is shown by the value of (F) which is statistically significant at the level 0.05 and it confirms the correctness and essentialness of the correlation between the two variables, and the frame results can be depended on without errors.

D- Regression Analysis:

Table (13): Regression analysis results for hypothesis one

Model		Non-standard transactions		standard transactions	Tests	Significance
		Beta	S.E	Beta		
1	Constant	0.479	0.223	0.897	2.149	0.036
	cognitive skills	0.852	0.056		15.227	0.000

The table (13) above shows that the T-test values of digital transformation variable are significant at the level 0.05 and this confirms the strong regression relation between digital transformation and cognitive skills.

Accordingly, the alternative hypothesis can be accepted which is:

There is a statistically significant relationship between digital transformation and enhancement of cognitive skills.

2. Hypothesis two:

There is no a statistically significant relationship between digital transformation and enhancement of scientific skills.

In order to verify this hypothesis, the researchers conducted the following tests:

A- Coefficient of correlation:

The table below shows the correlation coefficient between digital transformation as an independent variable and scientific skills as a dependent variable.

Table (14): Coefficient of correlation for hypothesis two

Variable	Test	Scientific skills
scientific skills	Correlation coefficient	0.635
	Significance	٠,٠٠٠

The table (14) above shows that there is a statistically significant correlation by 63.5% at significance level 0.05 between digital transformation and scientific skills.

B- Coefficient of determination:

Table (15): Coefficient of determination for hypothesis two

Independent variable	Determination coefficient	Modified determination coefficient	S.E
scientific skills	0.404	0.393	0.55677

The table (15) above shows that the determination coefficient ٠,٢٩٢ = R^2 which means that digital transformation interprets the change in scientific skills by 29.2%, while the rest of percent are interpreted by the other variables that were not included into the regression relation, in addition to random errors resulted from the sampling method, measurement accuracy and others.

C- ANOVA Test:

Table (16): ANOVA Test for hypothesis two

Statement	Sum of squares	DF	Mean of squares	F	Significance
Regression	11.771	1	11.771	37.973	.000٠
Residuals	17.36	55	0.316		
Total	29.131	56			

The table (16) above shows that there is a significant direct correlation between digital transformation and scientific skills; that is shown clearly by the value of (F) which is statistically significant at the level 0.05, and it confirms the correctness and essentialness of the correlation between the two variables, and the frame results can be depended on without errors.

D- Regression Analysis:

Table (17): Regression analysis results for hypothesis two

Model		Non-standard transactions		Standard transactions	Tests	Significance
		Beta	S.E	Beta		
1	Constant	1.821	0.356	0.636	5.123	0.000
	scientific skills	0.55	0.089		6.162	.000٠

The table (17) above shows that the T-test values for all statements of digital transformation variable are significant at the level 0.05 and this confirms the strong regression relation between digital transformation and scientific skills.

Accordingly, the alternative hypothesis can be accepted which is:

There is a statistically significant relationship between digital transformation and enhancement of scientific skills.

3. Hypothesis three:

There is no a statistically significant relationship between digital transformation and increasing students' efficiency.

In order to verify this hypothesis, the researchers conducted the following tests:

A- Coefficient of correlation:

The table below shows the correlation coefficient between digital transformation as an independent variable and students' efficiency as a dependent variable.

Table (18): Coefficient of correlation for hypothesis three

Variable	Test	Cognitive skills
students' efficiency	Correlation coefficient	٠,٧١4
	Significance	٠,٠٠٠

The table (18) above shows that there is a statistically significant correlation by 71.4% at significance level 0.05 between digital transformation and students' efficiency.

B- Coefficient of determination:

Table (19): Coefficient of determination for hypothesis three

Independent variable	Determination coefficient	Modified determination coefficient	S.E
students' efficiency	0.512	0.503	0.57036

The table (19) above shows that the determination coefficient ٠,٥١٢ = R^2 which means that digital transformation interprets the change in students' efficiency by 51.2%, while the rest of percent is interpreted by other variables that were not included into the regression relation, in addition to random errors resulted from the sampling method, measurement accuracy and others.

C- ANOVA Test:

Table (20): ANOVA Test for hypothesis three

Statement	Sun of squares	DF	Mean of squares	F	Significance
Regression	19.08	1	19.08	58.652	.000٠
Residuals	18.217	55	0.331		
Total	37.298	56			

The table (20) above shows that there is a significant direct correlation between digital transformation and students' efficiency; that is shown by the value of (F) which is statistically

significant at the level 0.05 and it confirms the correctness and essentialness of the correlation between the two variables, and the frame results can be depended on without errors

D- Regression Analysis:

Table (21): Regression analysis results for hypothesis three

Model		Non-standard transactions		Standard transactions	Tests	Significance
		Beta	S.E	Beta		
1	Constant	1.167	0.364	0.715	3.204	0.002
	students' efficiency	0.701	0.091		7.658	0.000

The table (21) above shows that the T-test values of digital transformation variable are significant at the level 0.05 and this confirms the strong regression relation between digital transformation and students' efficiency.

Accordingly, the alternative hypothesis can be accepted which is:

There is a statistically significant relationship between digital transformation and increasing of students' efficiency.

4. Findings and Recommendations

A-Findings

The researchers came up with the following findings:

1. There is a statistically significant relationship between digital transformation and enhancement of cognitive skills.

2. There is no a statistically significant relationship between digital transformation and enhancement of scientific skills.

3. There is a statistically significant relationship between digital transformation and increasing students' efficiency.

4- There is an importance in implementing digital transformation programs in university management programs .

5- The shift from traditional work to electronic work led to harnessing capabilities and cooperation, and there is a close relationship between digital transformation and improving university performance and the positive impact of electronic participation on skills and competencies .

6- Digital transformation works on enhancing transparency in decision-making processes

8- Digital transformation works on effective participation between the administrative staff, the teaching staff, and the students in making administrative decisions and finding appropriate solutions to problems.

9- Digital transformation works on accountability that lead to improve monitoring work and following up on the results.

B- Recommendations

The researchers recommend the following:

1. To enhance students' cognitive skills and increase their learning efficiency.

2. To enhance students' scientific skills.

3. To clarify methods of teaching students critical thinking.

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