

The Role Of Digital Transformation in The Quality Of Higher Education

Dr. Abida Salima

Globalization and Economic Policies Laboratory, University of Blida2, Algeria

Received: 22/03/2023

Accepted: 24/05/2023

Abstract:

This study aims to highlight the role of digital transformation in the quality of higher education, as digital transformation has become an inevitable necessity, especially with the large and rapid developments taking place in the international arena

Quality in higher education means the university's ability to meet the requirements and expectations of all stakeholders in a manner consistent with their needs, achieve their satisfaction on the one hand, and raise their level in general and the level of students in particular on the other hand, and this can only be done through attention to achieving quality in all elements and components Which are included in the formation of the higher education institution system (professors, students...)

That is why adopting the concept of digital transformation as a strategy plays an important role in the quality of its outputs and in the development of good and creative individuals, and thus it is a powerful way to build a knowledge-based society. And improving the quality of the educational process, which requires the government to provide the necessary support for this.

Key Words: *digital transformation, digital economy, education quality, higher education*

JEL Classification: *A22, A23, Q55.*

1. INTRODUCTION

Currently, digital transformation has become an inevitable necessity, especially with the massive and accelerating developments in the international arena. Therefore, most institutions in both the public and private sectors seek to adopt digital transformation as a strategy, considering its benefits on the customers and the public on the one hand, and institutions on the other hand.

Academic institutions are the most in need of digital transformation, in order to be able to keep abreast of technological developments with all their operations and services provided. This will make our academic institutions pay a great attention to this strategic orientation to inspire the improvement of the quality of the educational process as well as developing it. We try to answer the following problem: **How does digital transformation play a role in the quality of higher education?**

Based on what has been mentioned before, we will tackle in this section the emergence of digital transformation, its meaning, its importance, requirements and obstacles to its implementation, in the second section we will discuss the concept of the quality of higher education, its importance, its dimensions, standards in addition to difficulties in its application, the third section will be about the most important aspects of digital transformation in the higher education with some examples of its application .

2. Theoretical Literature of Digital Transformation

It has become necessary for higher education institutions to interact and adapt to the reality imposed on them by the era of globalization and transformation, using modern techniques and integrating information technology and communication into their educational programs and processes, in an effort to align them with this technological mutation, which has changed many traditional notions.

2.1- The Emergence of digital transformation

Digital transformation is not recently made, but it is renewed. Digital technology is the engine of digital transformation, it arose in the 19th century, with telecommunications and wireless communications, then launched in the 20th century with an electronic valve and transistor, later on it produced and enhanced the evolution of the computer, until the appearance of the Internet and smart mobile, which led to connect the world's parts. It also executed the unlimited applications and uses, both at the individual and organizational levels in various domains. As well as Governments and the entire world, with no limits. Nowadays, digital technology is providing new and renewed data for further digital transformation. The renovation of digital technology is described as velocitous, or exponential; the note worthiest expression of this , which has been proven by the years, is what is known as "Moore's Law", which predicted in 1965 that there would be a rapid increase in the capacity of computer processors, with a

continuous decrease in their costs. The elders had definitely lived this, while younger people are witnessing and will witness more. Recent data include: " IoT (Internet of Things) ; cloud computing; analysis of major data; Artificial intelligence, incorporating machine learning science, robot systems and its various applications. (Bakri, 2020)

2.2- Digital Transformation Concept

Researchers' views on the concept of digital transformation have varied and diverged, where everyone of them presented a concept of his own. In this sense , we will shed light on a series of concepts:

- the process of companies moving to a business model based on digital technologies in the innovation of products and services, providing new channels of revenue and imposing them increases the value of their materials. (salami, 2019)
- It is the integration of digital technology into all fields of business, integrating technology into all aspects of human life and society, to ameliorate operational efficiency, boosting productivity, reducing errors, innovating and improving the quality of services and products, besides providing better services to customers. (hajir, 2020)
- It is a transformation that requires a business model and technical and digital capabilities that are collected to create original products and services compared to the traditional ways of offering services, as well as enhancing operational efficiencies, lowering cost and acquiring a larger segment of customers and individuals to outperform competitors. (Tobal, 2020)
- An essential process of technological and cultural change that the entire organization needs so that it could «upgrade to the level of its digital clients". (Elmatref, 2020)
- The organization progressively shifts from spending much time dealing with materials only to care about information, knowledge and investment that reveals opportunities and possibilities, for reaching the highest level of achievement and adequacy . (rahma, 2020)

According to the aforementioned, digital transformation would be defined as: "a process associated with the intensive use of digital technologies and information technology, through which creative products and services are innovated, besides refining operational efficiency and productivity to the highest level of achievement and efficiency, in order to acquire a greater segment of customers and the public than competitors".

2.3- The importance of digital transformation

Digital Transformation (DT) has different benefits not only for the customers and the public but also for enterprises, companies and several stakeholders as well; for instance:

- It enhances and organizes operational efficiency, as it is a great money and effort saving.
- It creates opportunities for offering innovative and creative services away from traditional ways.
- It improves quality and facilitates procedures to obtain services for the consumers

- It assists enterprises and companies in expanding and spreading to a wider range and reach a larger segment of customers and the public. (kassem, 2020)
- Digital transformation has become something mandatory and required in order to keep pace with the technological revolution, moving from traditional to digital services , automating government services, abolishing and eliminating bureaucracy as it helps in diminishing human worker errors, and separating citizens and service providers, to reduce corruption and rationalize expenditures. (Nasr, 2020)
- Digital transformation offers enormous potential to build effective, competitive and sustainable societies through a radical change in serving consumers, employees and users while making their experiences and productivity better through a series of processes that are apt with the formulation of needed procedures for activation and implementation. (Musailhi, 2020)

2.4-Digital Transformation Requirements

The digital transformation process is based on several pillars and a range of components to ensure the success of this transformation, the most important of which are: (hajir, 2020, pp. 01-06)

- A sound legal framework and management leadership support;
- Strategic planning and a financial and management framework;
- A clear awareness and culture of electronic transformations;
- Providing robust software and systems infrastructure;
- Electronic media creation and automation of the electronic construction process.
- Human resources capable of applying electronic construction.
- Provide the necessary information and ensure its protection and documentation.

In the light of the foregoing and the nature of the university's work environment, the researcher has adopted a set of requirements, which will be defined as follows: (hajir, 2020, p. 06)

A-The adequate support of senior management towards digital transformation :

It demonstrates all the university administration's catalysts, means and support tools for digital transformation in all its different transactions and activities, and this is estimated by the overall degree of researchers attain on the study tool.

B- Appropriate Strategic Orientations for Digital Transformation:

It is about all strategic principles and behaviors taken by the University to implement the appropriate strategy for digital transformation in response to market indicators and the activities it needs in the light of the components of its internal and external environment so as to ensure strategic success , achieve objectives, and this is determined by the overall degree to which researchers obtain on the study tool.

C- Technical infrastructure for digital transformation :

All advanced information technology required by electronic transformation are hardware, software, databases and internal and external communication networks to ensure the success of digital transformation, and are valued at the overall degree to which researchers obtain on the study tool.

D - The required human and organizational resources for digital transformation :

cadres, qualified and trained human resources, plus pivotal competencies that are capable of dealing with technology effortlessly, moreover they need to possess the connectivity and the ability to create and innovate in this field, and they are valued by the overall degree that researchers get on the study tool.

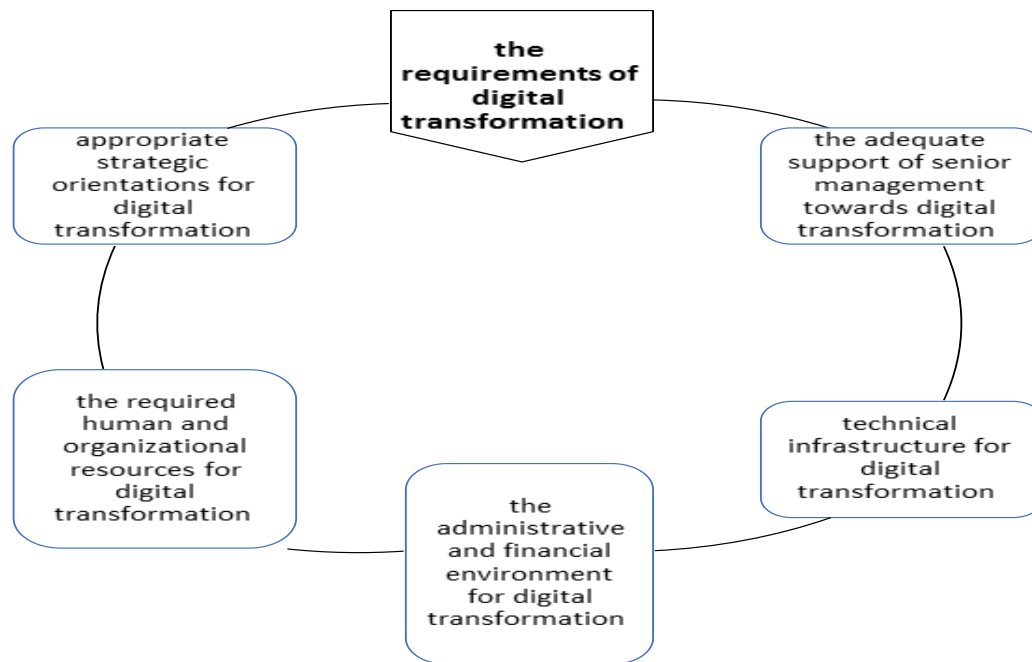
E- The appropriate administrative and financial environment for digital transformation :

All components of the administrative environment (organizational resources, as culture, organizational structures, procedures and manuals for working through electronic means), components of the financial environment (balances, internal control, back-up financial support, procurement procedures for equipment, applications and technology), which will contribute to the success of the digital transformation process in universities, it gets its value based on the overall degree that researchers obtain on the research tool.

Some researchers believe that the digital transformation process is based on three requirements only : (amine, 2018)

- Identify the suitable strategy for digital transformation.
- Knowing the working mechanisms available within the institution and the degree of relevance and effectiveness of each one.
- Providing convenient training to all interested people to exhibit how to transform, and ensure that the appropriate approach is taken within effective steps.

As mentioned above, the most important requirements can be summarized as follows

Figure No (01): Digital Transformation Requirements

Source: Prepared by the researcher

2.5- Digital Transformation Impediments

There are many obstacles to digital transformation within organizations that prevent their success. The obstacles could be summarized by selecting the following:

- The lack of skills and capabilities within the organization that can lead the organization's digital transformation and change programs;
- Lack of budgets for these programs;
- Fear of information security risks as a result of the use of technology. (Al-Bar., 2020)
- Lack of ICT-enabled infrastructure and adequately skilled technology personnel and stable Internet access in many rural areas;
- Among the challenges of excessive bureaucracy or strict internal regulations (kassem, 2020, p. 09)
- The issue of intellectual property rights, where there are still no clear and robust laws on the intellectual property rights of digital information sources. This may pose a major challenge to information institutions that may delay their digitization process. (Al-Khathami, 2010)
- Prioritization as prioritization may ignore digital transformation as a priority may contribute to accomplish many goals. (Tobal, 2020, p. 1189)
- The challenges of the Organization's organizational process as digital transformation requires fundamental changes in infrastructure in the organizational structure, pathway and philosophy of the Organization, there is an urgent need to reorganize its structures and modernize business processes in line with renewed technological developments;

●Customers' changing needs and difficulty convincing customers of the benefits and advantages of digital transformation are among the major challenges that organizations encounter, in addition to this, the fear of customers to lose control of information through privacy violations and security considerations, as the act of being close to clients and strong relationships with them support digital transformation (Musailhi, 2020, p. 17)

3. Literature on the quality of higher education

3.1- Concept of quality of higher education

Although the term "quality" is used in higher education, it is not easy to define it in a straightforward and accurate manner, due to the way it is dealt with from several angles, resulting in a multiplicity of terminological definitions of the concept.

A. Quality Definition:

Quality definitions have varied because of differences based on evaluation. Some view them as quality production processes and others as quality of the product or together, both of which are the most popular definitions: (Ashouri, 2017)

-Juran defined it as "The amount of suitability of the product for use ", which means the ability of the producer to conform its characteristics to the requirements of the customer.

-Deming defined it as "the past and future fulfilment of the customer's needs", that means the ability of the manufacturer to look forward to and meet future demands.

-American association's definition for "Quality»: "The body and the holistic characteristics of the product that manifest and reflect the maker's ability to satisfy explicit and implicit needs".

B. Definition of higher education:

The essence of higher education is based on the contradiction of indoctrination-based education. It is based on a theory based on the art of selection, analysis and installation. It means not only gathering information yet focusing on devising tools to deal with such information. This is what most definitions given have showed to clarify the concept of higher education include:

✓ Algerian legislature defines it as: "Every pattern of formation or composition of research is presented at the post-secondary level by institutions of higher education. (newspaper, 1999)

✓ Education carried out within university colleges or institutes after obtaining a secondary certificate, the duration of which varies from two to four years, the last stage of formal education. (Nammour., 2012)

C .Definition of the quality of higher education:

After the successful use of the concept of quality in the business sector, its application has moved to the public services sector, including higher education. As a

result of the novelty of this concept, researchers had defined it differently. The most important definitions are:

- This is a translation of the needs and expectations of the beneficiaries of the in-house educational process, whether they are professors, employees at different levels of employment or students, and external users of educational services such as: Parents, society and institutions have a set of specific characteristics that are primarily in the design and functioning of educational services in order to meet the needs and expectations of the beneficiaries and achieve their satisfaction with the educational services provided, which reflect the extent to which the inputs, processes and outputs of the educational institution meet their specific levels, constituting overall quality standards. (Al-Ibrahimi., 2017)
- The quality of higher education is described as: "A set of overall characteristics and qualities that should be available in the educational service so that this service is able to qualify the researcher and provide him with knowledge, skills and experience during the years of higher study, and to prepare him as a distinguished university graduate capable of achieving his goals and those of the operators and the development goals of the society. (Jakta, 2017)
- Excellence in education and in the quality of graduates, the teaching staff, the educational process and scientific research according to certified standards that qualify them for the satisfaction of the community and those with a relationship with the university and academic organizations. (Hamama, 2020)
- It also represents "the process of documenting programmes and procedures and applying regulations, regulations and directives aimed at achieving a qualitative shift in education and improving students' level in all mental, physical, psychological, social and cultural aspects. (Zayan., 2014)

Based on the foregoing, the quality of higher education can be defined as "the ability to meet the requirements of students, professors and employees at different levels on the one hand, External educational service beneficiaries, on the other hand, according to specific indicators and characteristics, with a view to upgrading the university as a whole and students in particular, with the aim to keeping pace with environmental developments to improve resilience, meet the needs and expectations of beneficiaries and achieve satisfaction with educational services ".

3.2- Importance of higher education's quality

The importance and benefits of applying quality in higher education can be highlighted in the following:

- The development of the University's administrative system as a result of clear roles And the determination of responsibilities;
- Improve students' educational services that reflect aspects of their personality.
- Increase educational efficiency and enhance performance for all academics and administrators.

- fulfilling the requirements of students, society, scientific research and reach their satisfaction.
- Create an atmosphere of understanding, cooperation and healthy human relations between staff.
- Making the University's administration able to resolve problems in the right scientific ways and deal with them through corrective and preventive measures to prevent them from occurring in the future.
- raising the level of awareness of the University's service beneficiaries by demonstrating commitment to the quality system.
- Interdependence and complementarity between all academics and administrators at the University and working in a team spirit.
- applying a comprehensive quality management system gives the university respect, recognition and positive image. (Imran, no date)
- Raising awareness and accreditation towards the institution by students and society.
- Create an environment that supports and maintains continuous development, and involve all development workers.
- Focus more on process development than on responsibilities.
- each party to the educational process is bound by the existing system.
- A comprehensive and thoughtful system will have a positive impact on students' behavior as it creates great and honest competition among them (Smiley, 2019).

3.3- Dimensions of higher education quality

Higher education institutions seek excellence in providing their services in order to address clients' expectations and needs, which requires them to recognize the dimensions to which clients use to judge the quality of educational service. The following is a presentation of the most important dimensions:

- **Competence (Merit):** Higher education institutions ought to provide academic skills and expertise that make them capable of providing their various educational services at a high level of quality. They should also be placed on the basic adequacy and merit of the teaching staff. The Department shall ensure that a highly qualified teaching framework and sufficient scientific knowledge enable the building of great graduates who are capable to understand and apply.
- **Accreditation:** Where the University must provide its services correctly, with a high degree of consistency reflected in the University's performance.
- **Dealing:** An atmosphere of mutual respect and good dealing should prevail at the University, respect and prestige, based on ethical, organizational and professional basics, which preserve the prestige of the Professor and the Administrator. and preserve the dignity of the student too , achieving this dimension of quality requires a high degree of loyalty from the researcher and the professor and the administrator of the educational institution. This refines the behaviors that reflect the University's reputation and competitive advantage in the service market.

- **Responsiveness:** This dimension focuses on achieving a high or rapid response to changes in the university environment, which requests the institution to have sufficient flexibility to respond to these changes, by directing attention on elements of the external environment, as well as all financial and material facilities that ensure the continuation of the educational process, and by developing plans for the student's educational process throughout his or her school years. (Jakta, 2017, pp. 38-39)
- **Credibility:** The extent to which the client is persuaded of the provider's skill and expertise and the satisfactory honesty of the data and information obtained, i.e. is the service provider trustworthy? Is he keeping his promises? The credibility of the educational institution is an important dimension of the quality of higher education services and is intended to mean the extent to which the educational institution is able to fulfil its obligations and commitments to the student before and during his enrolment. (Hawass, 2016)
- **Security:** It is intended to provide the student with a safe and risk-free educational service. The researcher tends to prefer the institution that provides him with a degree of safety, by preventing thefts, incidents of abuse and trafficking in prohibitions, and not admitting students above accommodating the facilities of the institution of higher education, which create overcrowding that impacts the students' health and psychological aspects.
- **Accessibility to the service:** It is an important dimension of the quality of the educational service. Emphasis should be placed on achieving this dimension by choosing the appropriate location for the institution that is easily accessible, as well as providing bus routes to transport students at the appropriate times and providing them with internal housing .
- **Tangibility:** In providing its services, institutions of higher education need a range of material requirements that directly reflect this service: classrooms, amphitheatres, scientific laboratories, computer laboratories and visual, concrete, written and other educational tools. The most important material requirements related to the indirect higher education service are health and sports clubs, parks, parking lots on and on.
- **Connection (communication):** It is one of the dimensions of achieving the quality of higher education. It allows the professor to discuss, analyse, recognize and understand everything related to demand and its needs and problems. It allows the student to communicate his thoughts and views to the university and provide feedback that contributes to the development of the educational process, programmes and curricula.
- **Courtesy:** Service providers' spirit of friendship, respect and kindness in dealing with good greeting and smile at customers should prevail in the institution of higher education, ensuring that every member of the faculty, student and administrator is respected; in case of abuses, the systems of higher education institutions address this. (Jakta, 2017, pp. 39-40)

Depending on the foresaid, the dimensions of higher education quality can be summarized as follows:

Figure No. (02): Dimensions of the quality of higher education.



Source: Done by the researcher

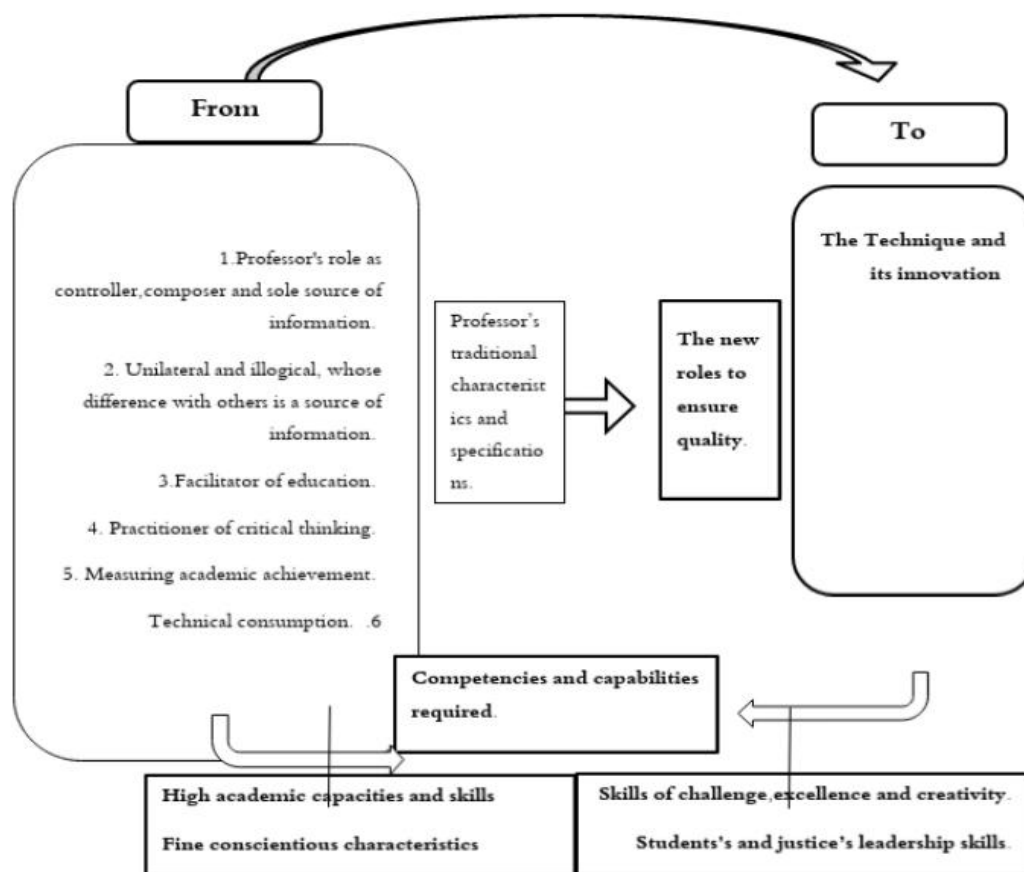
3.4-Higher education quality standards

Understanding the quality standards of higher education is a major step in achieving them. Despite the fact that they are numerous, the most important criteria on which studies, research and bodies concerned with the quality of higher education focused on can be identified, containing the following:

A. Member Quality Standard:

The quality standard here is to qualify the professor practically, behaviorally and culturally to be able to enrich the process according to the educational process. The size of the teaching staff, their contribution to the service of the community and their respect for the learners must be taken in consideration (Al-Ibrahimi., 2017, p. 244) The following format highlights the competencies of the faculty member from a quality perspective:

Figure No. (03): Faculty member's competence from a higher education quality assurance perspective .

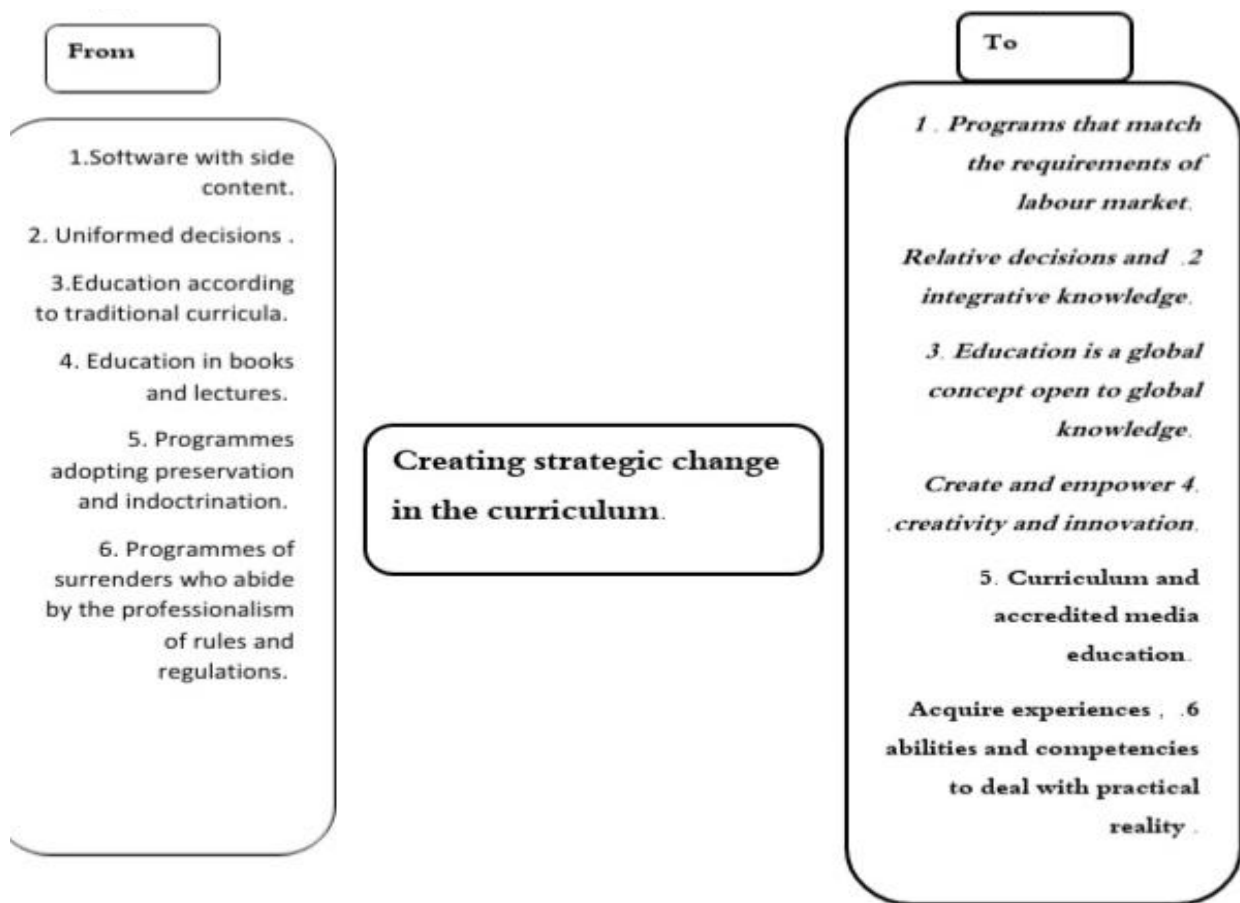


Source: Bohniyah Kawe , Samir Bara, Salma Lemar, "Measuring the quality of management of teaching staff at the University of Algeria", 2nd Arab International Conference to Ensure the Quality of Higher Education, p. 539.

B. Curricula and educational programs' quality standard :

the quality of educational programs means their coverage, depth, flexibility and accommodation of several global challenges and knowledge revolution, the extent to which they are developed in line with general variables, their contribution to the formation of the integrated personality and the achievement of the educational institution's objectives and aspirations. The following format shows the various transformations required for the quality of the higher education institution's educational program. (Jakta, 2017, p. 43)

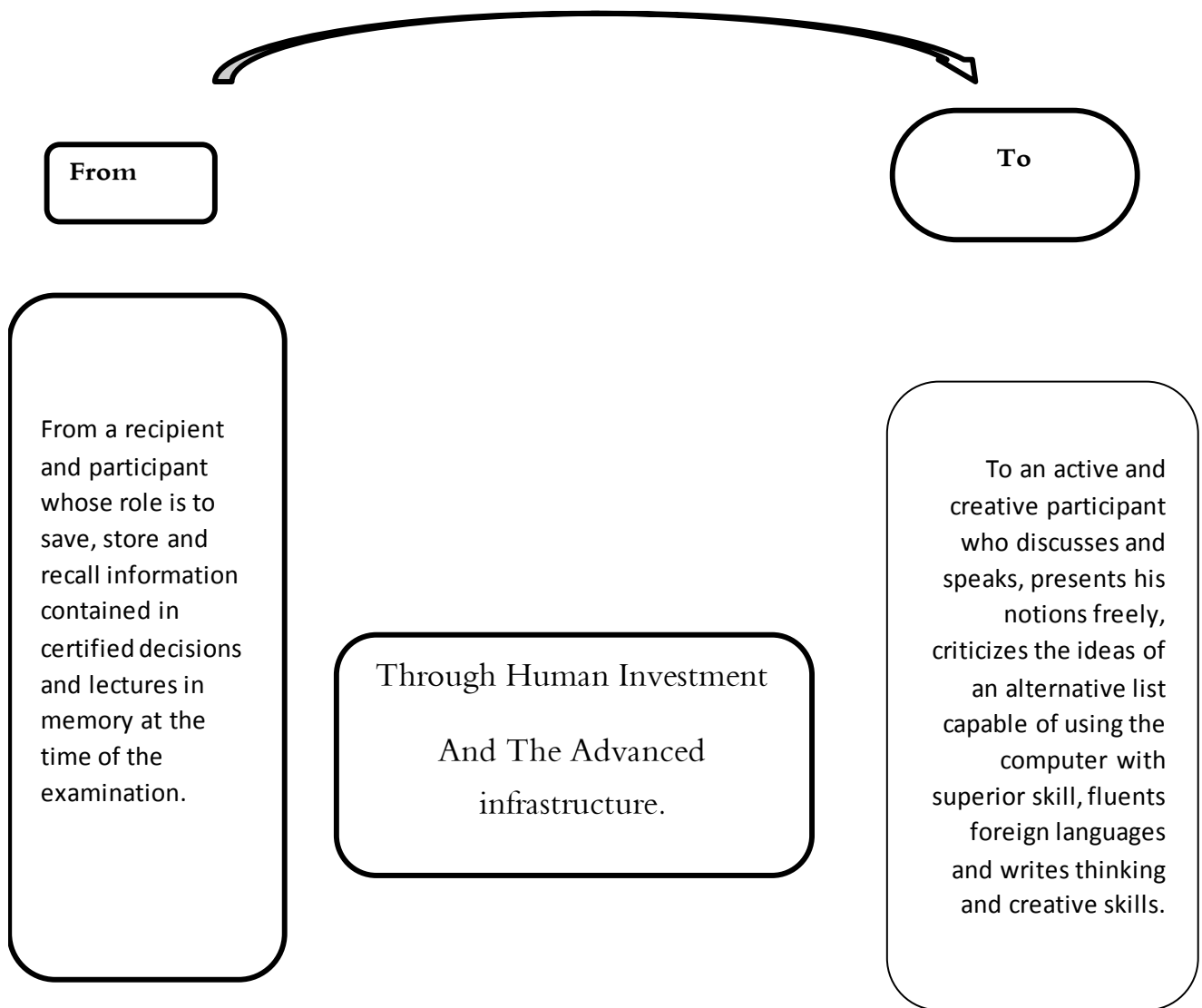
Figure 4 : Represents the transformations required for the quality of the educational program in the institution of higher education Through Human investment Advanced infrastructure.



Source: Belkacem Zairi, "Possibilities and Challenges of Applying Comprehensive Quality Management in Education in Algeria, 2nd Conference for Planning and Developing Education and Applied Scientific Research in Arab States, University of Tehran (Saudi Arabia), 24-25 February 2008.

A. Student Quality Standard:

Qualifying students scientifically, socially and culturally so that knowledge can be absorbed, taking into account the relative number of students, the average cost of the researcher, the services provided to him, their motivation and their preparation for learning. (Al-Ibrahimi., 2017, p. 244)

Figure No. 05: Students' roles from a quality perspective**B. Educational management standard:**

The educational institution's management includes: (Mehibel, 2019)

- strategic planning and follow-up activities leading to the creation of a culture of quality ;
- leadership's commitment to quality in senior management ;
- Good human relations and respect among students, faculty and administrative leadership;
- Training on quality assurance concepts;

In addition to the above, the rest of the criteria can be summarized in the following table:

Standards	Standard Concept
Quality Standard Teaching Methods	This is the need to integrate theoretical and applied teaching and to link it to reality (environmental problems), so that the researcher can absorb , understand and apply it in his life's experiences.
Student evaluation Quality Standard	Professors should vary in the use of methods of evaluating students' performance, with adherence to objectivity, transparency, justice, continuous training in evaluation and commitment to diversity in choosing methods, and selecting the best method that determines the true level of students.
Quality Standard of educational institution and society	The educational institution must interact with society in all its productive and service sectors, meet its needs and be able to solve its problems by developing specializations that serve the labour market.
Material Potential Quality Standard	It is based on the provision of buildings, halls, amphitheaters, installations and its ability to achieve the goals and the extent to which students benefit from information banks, offices and Internet space because this affects the quality of education in terms of the implementation of the plans developed or programs prepared.
Performance Evaluation Quality Standard.	By evaluating all previous standards, to ensure quality education and achieve progress and excellence.

Source: Prepared by the researcher (Shannaf Khadija Abdul Hamid al-Mehri and Balkhiri Mourad Mohamed al-Bashir al-Brahimi, op. cit., p. 244-245).

3.5-Difficulties in applying the quality of higher education

Although there are benefits resulting from the application of quality in higher education, it suffers from many difficulties that prevent it from succeeding and can be limited to the following points: (Ashouri, 2017, p. 76)

- The rigidity of regulation where attention to the organizational structure is concerned, the sequence of authority and the patterns of leadership followed without adequate consideration and flexibility of the structure to the working conditions and needs ;
- Centralization of the decision-making process, which is contrary to the philosophy of quality management to give freedom and autonomy to colleges and departments in decision-making ;
- Insufficient financial and human resources qualify for a shift towards quality pillars, and the private sector's reluctance to fund institutions of higher education.
- Resisting change among some managers and heads, owing to the need for lower levels of authority and functions ;
- Poor leadership and creativity skills of some university administrations, which have a negative impact on the adoption of change and the collective contribution to the process of applying quality requirements ;
- Deficit in future pedagogical structures, which impedes the mobility of teaching and receiving in students and faculty alike ;
- Accelerating the results of the application of quality management, as the success of its application needs years due to its interconnectedness with many variables that only integrate over time ;
- Poor coordination among the various actors in society, owing to lack of communication and positive persuasion of the strategic role and economic and social importance of universities and their examination ;
- Deficiencies in the aspects of support for scientific research with material and moral incentives for faculty members, which may be due to the problem of funding by government agencies or the private sector ;
- Inadequate quality of educational service provided to students and quality of service consistent with their wishes and expectations for faculty performance, evaluation methods and the efficiency and effectiveness of the service offering and student care system ;
- Inadequate organizational culture prevailing in university and organizational cultural institutions that conform to quality management requirements ;

4.A Relationship between digital transformation and the quality of higher education

Many studies have illustrated that improving the quality of higher education is the product of embracing digital transformation as a strategy by allowing optimal use of ICT, which in turn has a positive impact in all areas of work in higher education .

4.1- Manifestations of digital transformation in higher education

The concept of digital transformation will be addressed in higher education as well as its manifestations :

A. Concept of digital transformation in higher education

defined as: "The transition from a traditional system to an ICT-based digital system in all fields of university work, in the light of a set of requirements of developing a digital transformation strategy, developing a digital transformation culture, designing digital educational programmes, managing and financing digital transformation, along human, technical, security and legislative requirements". (Hujeir, 2020, p. 05)

It is known as: "A continuous process through which all elements of new electronic technology and means are introduced into all policies and procedures of academic and administrative work in universities in order to provide high-quality services in line with scientific standards in this field." (Amin, 2018, p. 45)

Depending on the above, the digital transformation of higher education can be defined as: "The process of developing and improving the fields of university work, through the introduction of all digital technologies and information and communication technology in all areas, policies and procedures of academic and administrative work in the university in the light of the provision of various requirements (strategy, culture of transformation, human requirements, technical, security and legislative.....), in order to provide high quality services to the targets that meet the global standards in this field."

B.The most important manifestations of digital transformation in higher education :

Digital transformation has a significant impact on higher education. Its manifestations can be seen in the operations of higher education institutions such as management and education. In this part we will address the most important examples of these manifestations :

E-Learning

E-learning is defined as : "The best way to employ technological and multimedia innovations to enhance the quality of higher education through self-learning programs based on interaction between researcher and electronic content using computer simulation." (Smiley, 2019, p. 243)

Electronic Management

E-governance is defined as: "The existing management process has the distinct potential of the Internet and business networks in planning, organizing, directing and controlling the core resources and capabilities of the Organization and others without limits in order to achieve the objectives of the Organization." (Ammari, 2017)

MOOC Massive Open Online Course

It is an online course aims to provide open web access to an unlimited number of participants, as well as providing participants with materials (Lessons) Traditional courses such as (lectures, readings...), many MOOC providers provide interactive forums for users to support interaction and build interactive forums for students, professors and professors' assistants (ATs), in addition to feedback from reactions towards exams and duties...., MOOC is a recent and widely studied development in the field of distance education, introduced in 2006 and a common method of learning emerged in 2012, and it should be noted that most providers of this service provide it free of charge (such as Khan Academy), but some require fees (such as Udemy).) (Techopedia, 2021)

Cloud Computing

The National Centre for Standards and Technology defines cloud computing as: "A model to provide appropriate and durable access at any time to the network, to share a wide range of computing sources that can be deployed and provided with minimal effort or interaction with the service provider trusted .

4.2-Digital transformation and quality of higher education

Digital transformation is one of the most important pillars on which institutions of higher education rely on to achieve the quality of their services by optimizing their technological resources so as to upgrade and better the quality of their offered services to the beneficiary as required.

A. Use of information and communication technology to enhance the quality of higher education :

Improving the quality of higher education requires the availability of the quality system through the basic elements known to the educational process at any stage of the research and professor as well as the teaching material and means and environment. Modern technology has provided sophisticated means and data as indicators to ameliorate the level of higher education which can be limited to : (Falaisa, 2018)

- **The trend towards the use of a quick and enjoyable means:**

the impact of increased demand for computers and associated services on higher education has been reflected in the increasing number of universities and institutions of higher education through the dissemination of information about programs and the contents of educational materials.

- **A flexible learning environment:**

The use of information technology in education makes the researcher connected with educational programs in a timely manner, which contributes to the creation of a new, flexible and independent learning environment for students, especially those who are timid as they are allowed to discuss through online discussion classes.

- **Creating new areas of learning :**

The presentation and dissemination of educational programmes through information networks, the multiplicity of such sources and the intensity of their volume published by many, with their different credibility and suitability, compel users of this technology to confine the useful information and assess what is credible and appropriate, and abandon what is not, thereby prompting effective thinking among the researcher which gains the skills of problem solving.

- **Expanding the communications network :**

The use of information network education opens the way for discussion among a group whose members may belong to several countries or cultures, expanding their perceptions and opening up new prospects for learning, ideas exchanging and knowledge of cultures across the world to create an information society that can achieve high quality.

B. Using e-learning as a tool for achieving higher education quality

E-learning represents its transition from traditional education (classroom, book, course, direct receipt), which in their groups constitute time and space determinants to the mechanism of using modern techniques to obtain scientific material. On this basis, e-learning has a series of starting points and contents that drive the adoption of this type of education. Containing : (Mounir., 2018)

- **Comprehensive promotion of the educational process :**

The philosophy of advancing the educational process in all its aspects is embraced : curricula, teaching bodies, educational and educational leaders, researchers and thus achieving higher educational and educational standards for the entire educational process ;

- **The process of standardizing the scientific curricula :**

In terms of the nature and presentation of the scientific material while ensuring that the curriculum interacts with the ongoing scientific variables and thus has constant contact with the developments occurring in each area of competence ;

- **Easy and effective communication between researcher and teacher :**

Ensuring access to scientific material regardless of the holders' time and place ;

- **Adopt the concept of e-education as a new philosophy :**

Raises the challenge of the researcher and prompts him to interact with this new system and seek the most appropriate and best information from a variety of sources. The researcher learns the method of scientific research and convenient decision-making ;

- **Continuous development of the teacher's scientific potential:**

The burden of the philosophy of e-learning falls on him, requiring him to constantly search for everything that is new in his field of competence and to see modern tools of presenting information to the researcher ;

- **Work to provide the principle of transparency and justice :**

in the assessment of the student's scientific level away from any psychological effects or individual differences.

E-learning can be used as a tool to improve the quality system of higher education through many tools such as distance education, in which it is considered as one of the learning methods in which available means of communication play a key role in overcoming the problem of distances . in addition to education combined with online e-learning tools or through mobile learning carried out by small and mobile wireless devices such as smartphones, a synchronized teaching model that combines teacher and learner can also be used by default.

5. Conclusion

Through two pillars, we have tried to focus on the various aspects of digital transformation and the quality of higher education. We recognized that :

Digital transformation is a process linked to the extensive use of digital technologies and information and communication technology through which creative products and services are created in order to improve operational efficiency and increase productivity to acquire a larger segment of customers and the public in order to outperform competitors. In terms of quality in higher education, it means the ability of the institution of higher education to meet the requirements and expectations in a manner consistent with the needs and satisfaction of all stakeholders on the one hand and to upgrade the level of the university as a whole and the level of students especially on the other . This is only through attention to quality in all elements and components that are involved in the formation of the higher education institution's system. This is why the concept of digital transformation has become an imperative for various types of organizations, especially institutions of higher education, requiring the Government's support.

6. Recommendations

Through the above, the following recommendations can be included:

- continuing in meeting universities' information technology needs and providing appropriate infrastructure to assist them digitize.

Foreign and private universities are amongst the digital platform for national projects of the Ministry of Higher Education and Scientific Research.

- The Ministry of Higher Education will provide technical support, develop plans and identify steps to be taken to achieve digital transformation in educational institutions.

- Create educational digital content in investment, research and retrieval formats helps in the transition from teaching to learning, and in raising the proportion of Syrian Arab digital content on Shabka compared to global content, and establishes digital industries based on the production, investment and management of digital content.

- Qualify specialists and researchers in the fields of digital transformation to accelerate it through the development of interdisciplinary that postgraduates studies that blend informatics with other disciplines to develop research in relevant fields (cyber

legislation, bioinformatics, technology management, electronic commerce, electronic business, integration of technology with education. (...)

■ Establish, activate and support the centres of creativity, entrepreneurship and research work in universities to be centers to connect universities with the society and motivate graduates to establish their startups.

■ Directing studies and research in automation, informatics and industrial intelligence to solve real problems in digital business and the digital economy, and in implementing market-specific studies in a sectoral manner.

7.Bibliography List:

Al-Bar., A. M. (2020, april 03). *digital transformation technologies*. Retrieved from <http://www.kau.edu.sa/GetFile.aspx?id=287966&fn=article-of-this-week-DrAdnan-ALBAR-Feb-2018.pdf>

Al-Ibrahimi., S. K.-H.-M.-B. (2017). Higher Education Quality Assurance Standards: Presentation of some international models. 243.

Al-Khathami, S. b. (2010). Projects and experiences of digital transformation in information institutions. *a study. RIST Magazine*, 28.

Amin, M. A. (2018). Digital transformation in Egyptian universities as a requirement to achieve a knowledge society. *Educational Administration Journal*(19), 64.

amine, M. m. (2018). digital transformation in egyption universities as a requirement to acheive a knowledge society. (19, Ed.) *journal of educational administation*, 64.

Ammari, S. (2017). Electronic management as a mechanism for the digital transformation of university libraries in light of the electronic environment. *Horizons of Management Sciences and Economics*, 01, 187.

Ashouri, I. (2017). *Organizational climate and the quality of institutions of higher education in Algeria (PhD thesis)*. Algeria, Faculty of Economic, Commercial and Management Sciences,msila.

Bakri, S. a. (2020, april 01). *article entitled:Digital transformation and future prospects*. Retrieved from http://www.aleqt.com/2018/03/22article_13354621.html

Elmatref, a. e. (2020). Digital transformation of universtity education under crises between public universities and private universities from the faculty's point of view. *scientific journal of faculty of education*, 36(07), 162.

Falalisa, N. S. (2018). Information technology and its role in improving the quality of higher education. *Al-Mufaker Journal for Legal Studies and Politics*, 62.

hajir, k. i. (2020). the readiness of palestinian private universities towards digital transformation. *working paper submitted to the first intarnational conference on information and business technology*, (p. 04). palestine.

Hamama, A. (2020). The quality of academic life and its relationship to the quality of higher education outputs. *Journal of Psychological and Educational Sciences*, 114.

Hawass, A. R. (2016). Quality of higher education services. Dimensions and measurement methods. *Journal of Humanities and Society Sciences*, 232.

- Hujeir, K. I. (2020). The readiness of Palestinian private universities towards digital transformation. *A working paper presented to the first international conference on information technology and business*, (p. 04). palestine.
- Imran, H. A. (no date). The role of the ethical charter in improving the effectiveness of educational service in higher education institutions from the point of view of faculty members. *Economic and Commercial Journal*, 26.
- Jakta, S. (2017). *The role of inclusive governance in improving the quality of higher education from the point of view of stakeholders*. (note for obtaining a master's degree specializing in corporate governance and finance).
- kassem, a. e. (2020). the role of digital transformation in increasing the efficiency of banks' performance and attracting investments. *working paper*. palestine.
- Mehibel, W. (2019). Knowledge management application to ensure the quality of higher education. *Algerian Journal of Research and Studies*, 02(08), 115.
- Mounir., S. M. (2018). The effect of using e-learning as a tool to improve the quality system of higher education in Algeria. *Al-Maarif Journal*, 187-189.
- Musailhi, S. a. (2020, octobre 10-11). the impact of digital transformation on organizational restructuring., (p. 36).
- Nammour., N. (2012). *Efficiency of faculty members and its impact on the quality of higher education*. 14. Algeria, Management Sciences, specializing in Human Resources Management, University of Constantine.
- Nasr, h. i.-f. (2020). the role of digital transformation in improving government services in palestine. *working paper presented to the first international conference on information technology and business*, (p. 07). palestine.
- newspaper. (1999, april 04). Law 99/05 containing the directive law for higher education. 24, 03.
- rahma, a. e. (2020). digital transformation and its implication for the practice of accounting and auditing. *working paper submitted to the first international conference on information and business technology* , (p. 06). palestine.
- salami, B. y. (2019). Digital transformation between necessity and risk. *jornal of legal and political sciences*, 10(02), 947.
- Smiley, F. B. (2019). The impact of e-learning on achieving total quality in higher education institutions. *Journal of Humanities and Society Sciences*, 248-249.
- Techopedia. (2021, april 05). Retrieved from Massive Open Online Course. : <http://www.techopedia.com/difinition/29260/massive-open-course-mooc>
- Tobal, h. h. (2020). the role of information technology governance in the success of digital transformation. *journal of humanities*, 07(03), 1189.
- Zayan., N. A.-H. (2014). Knowledge management as a mechanism for improving the quality of higher education. *Journal of Economic Research*, 248.