

Using technology to manage efficiency and improve job performance within the university - Field study at the University of Annaba, Algeria –

Utilizar la tecnología para gestionar la eficiencia y mejorar el desempeño laboral dentro de la universidad - Estudio de campo en la Universidad de Annaba, Argelia –

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Abstract

This research paper aims to identify the most common uses of technology and the main observed impact on efficiency and performance as well as identifying both technological use and efficiency management within universities since they are considered means of achieving job performance. This is what the Ministry of Higher Education and Scientific Research seeks to achieve by keeping pace with current developments in terms of information and communication technology and adopting the technological process in the administrative and educational process.

Therefore, we relied on the descriptive and analytical approach to diagnose this phenomenon, providing an accurate description and clear explanation. We relied on a questionnaire as a tool for data collection and analysis to arrive at the desired conclusions. This was achieved through a purposive sample of 40 employees representing the research community with objective indicators

Through our study, we concluded that technological use plays a role in improving efficiency management among university employees, which contributes to achieving university outcomes as a strategic goal pursued by relevant authorities.

Keywords: Uses, technology, efficiency management, job performance, university.

Resumen

Nuestro trabajo de investigación busca identificar el uso de la tecnología y la gestión de la eficiencia en las universidades, ya que se consideran medios para lograr el desempeño laboral. Esto es lo que el Ministerio de Educación Superior e Investigación Científica busca

lograr al mantenerse al día con los avances en las tecnologías de la información y la comunicación e incorporar el proceso tecnológico en los procesos administrativos y educativos.

Por lo tanto, nos basamos en un enfoque descriptivo y analítico para diagnosticar este fenómeno, proporcionando una descripción precisa y una explicación clara. Utilizamos un cuestionario como herramienta para la recopilación y el análisis de datos para llegar a las conclusiones deseadas. Esto se logró mediante una muestra aleatoria simple de 40 empleados, representativos de la comunidad investigadora.

A través de nuestro estudio, concluimos que el uso de la tecnología contribuye a la mejora de la gestión de la eficiencia entre los empleados universitarios, lo que contribuye al logro de los resultados universitarios como objetivo estratégico perseguido por las autoridades competentes.

Palabras clave: Usos, tecnología, gestión de la eficiencia, desempeño laboral, universidad.

Introduction :

The university seeks to improve employees' performance as an institutional outcome and keep pace with developments at both the international and national levels. This is due to several factors, most notably the COVID-19 pandemic and advances in information and communications technology. However, we focus on the COVID-19 pandemic as a fundamental support in adopting a semi-digital strategy for managing operations and implementing all administrative processes on campus through technological applications, with the goal of improving employee efficiency and management. Therefore, when we talk about the use of technology, we say that it has become a necessity and an urgent need for institutions regardless of their activities for adopting it in order to gain a positive reputation and image. This is what university institutions are seeking to implement after the decisions of the Ministry of Higher Education and Scientific Research regarding the digitization of the sector ; whether at the strategic, tactical, executive levels, or even the educational process in its various forms. Therefore, it is important to emphasize the importance of human resources and their training to develop, empower, and even control their use ensuring proper task management and optimal performance. Today, talent management is the key factor that distinguishes institutions from one another in terms of service quality as a functional outcome.

Universities possess capable human resources and advanced technological resources, with optimal and effective investment to achieve the desired goals outlined in two main points: technological use and applications as well as competency management. Both are considered challenges facing institutions in their career development. Therefore, the greatest concern is

empowering staff in the use of technology. Accordingly, our research study aims to answer the main question:

-What is the role of technological use in efficiency management to improve job performance at the university?

From this, the following secondary questions branch out:

-What are the requirements for using technology to manage efficiency in order to achieve job performance?

-How technology helps to reduce errors in order to improve job performance within the organization?

1-Conceptual and theoretical framework of the study:

Through this framework, we address everything related to the study variables, from their definition to their foundations, then to determining the relationship between them, with the aim of providing the subject with a cognitive foundation. Therefore, we will address the following:

First: Study Concepts:

1-Technological Use:

As a result of the rapid development of information and communication technology, the term has been employed to define the relationship between user ,the technology, the interaction and participation. This concept denotes ambiguity, as it expresses different connotations that confirm the confusion arising from the following terms: use in the sense of utilization and application in the sense of practice.

This complexity and ambiguity in this concept, according to "Chambat Pierre" is due to the fact that it simultaneously employs the discovery, description, and analysis of behaviors toward a vague set of concepts ; namely modern information and communication technologies, and the choice between accepting or refusing to interact with them.(Chambat , 1995, pp. 207-210)

However, some researchers prefer the term "practice" to "use" or "utilization," as communication approaches focus on observing the social use of modern technologies in their environment. Use in this context is dualistic, both technical and social. From the above, it becomes clear to us that the concept of use or utilization refer to the relationship between technology and the user which occurs through the action that technology creates within the social and cultural environment. (Ghawi, 2022, p. 242)

2-Competency Management:

The topic of competency management falls within the human resources management approach. This topic has been linked to changes occurring within the organization's

environment, regardless of its activity. Environmental changes have added a significant advantage to positions and tasks. Individuals' adaptation aims to adhere this through continuous training and the acquisition of new skills, enabling them to perform their work.

Thus, competency management is defined as: "Influencing the knowledge, competencies, and behaviors of human resources so as to enable them to improve their returns and adapt to developments occurring in the work environment." (Alawi , 2007, p. 67)

The sum of activities dedicated to utilizing and developing individuals and groups in an optimal manner with the goal of achieving the organization's mission and improving individual performance. It also includes utilizing and developing existing or acquired competencies for the better. Development activities, such as training, recruitment, selection, and others, represent a means of improving the organization's performance, not goals in themselves, thus ensuring vertical and horizontal integration.(Ben Jeddou, 2012-2013, p. 115)

Influencing the experiences and behaviors of human resources in order to improve their performance as well as being adapted to developments occurring in the work environment.

These efforts and activities focus on providing, maintaining, and developing these competencies, providing them with appropriate working conditions and the necessary incentives to maintain and motivating them to exert maximum effort. (Cadin & Guerin , 2002, p. 13)

3-Functional return:

This refers to purposeful functional behavior that does not exhibit any strong results or pressures stemming from within the individual alone, but rather as a result of exchange and interaction. It can be defined as a goal, endeavor, or objective sought to be achieved. On the other hand, we note that there are many perspectives . Some address it through individual return, or the outcome of a person's activity which has been a process of acquiring information. Researchers define it as the work acquired by a teacher to achieve the objectives set for the success of the educational process according to principles that require the function of learning through specific efforts and skills performed by the teacher.(Ayyad & et al, 2022, p. 892)

4-University institution

It is a private higher education institution that employs professors and researchers to facilitate training in graduate institutes and provides facilities for scientific research. From an Algerian perspective, it refers to a public institution of an administrative nature, enjoying legal personality and financial independence. (Arour, 2013, p. 188)

Thus, we can summarize the university as an educational institution consisting of three structures: the first is the human structure, which in turn consists of administrative workers, simple workers, professors, and finally students. The second is the legal structure, represented by the physical structure, which consists of the structures, buildings, and facilities present to perform several functions, the most important of which are: educational, administrative, research, and cultural functions.(Ghawi, 2022, p. 243)

The basic characteristics of a university institution are as follows:

1 .The focus of the university institution's activity is primarily academic, with its content being education and scientific research.

Managing a university institution amidst the challenges of the information age, which requires creative management.

2 .The university institution is the most relevant societal link, allowing for the data of science, knowledge, and developments in Its fields of specialization and interests.

3 .The university institution is the most sensitive location in shaping the future of its nation, providing it with human cadres, competencies, and skills through its graduates.

4. Investing in a university institution is a long-term investment, the results of which are not apparent in the short or medium term, and it is difficult to measure them according to other revenue-accounting mechanisms.

5 .The academic institution is concerned with the quantity and the excellence of qualified human resources capable of transferring knowledge and skills to others, which are often offered with low flexibility compared to the high elasticity of demand.

6 .The behavior of university employees is characterized by work ethics that differ from those prevalent in production or service-oriented institutions in terms of their origins, meanings, data, and manifestations.

7 .The university along with its employees is concerned with the beneficiaries of its direct services, namely students, a valuable human resource that it must devote great care to preparing scientifically and educationally. The university is linked to other university counterparts by special ties that typically tend toward cooperation, sometimes suffusing competition, whether these institutions are national or foreign .(abidi , 2018, p. 159)

Second: Technological Use and Its Nature

1/The Importance of Technological Use

Technological uses contribute to increasing the functional outputs of competencies, which requires improving job performance to achieve the goals of human development and sustainable development. These benefits are provided by modern technical and educational

means associated with the use of information and communications technology, in the following factors:

Increasing Learning Effectiveness: Most research and studies confirm that technological or electronic management is based on computers and appropriately employed information networks that contribute to the quality and effectiveness of practical outcomes. Most studies conducted in this area have also revealed that the restructuring of educational institutes and universities through the use of existing technology is very rare. This reflects the scarcity of these institutes and universities, which provide computers for each employee and extensive networks that encourage effective communication and collaboration to perform their duties to the fullest extent.

Achieving Justice and Equality: Experiences in the field of technology have proven the inevitability of the availability of technical means in educational institutes and universities, as they serve the special needs of human resources in the right to access quality and effective educational services and resources, regardless of barriers. Funding and policies that support distinguished education lead to reducing the severity of the differences associated with the average availability of computers among some groups, while others do not. From here, it can be said that training programs, that must be provided by university institutions and bodies concerned with education and training, play a fundamental role in achieving the principle of justice and equality for all within the university institution.

Confronting Challenges: Education faces several challenges nowadays as a result of the information and communications technology revolution. This necessitates the pursuit of information and technological development for students, professors, and administrators, who represent the broad base in any Arab country. (Boutahra, 2017, pp. 138-139)

Low cost: The cost of using modern technology is considered low, especially in relation to higher education budgets. For example, it is noted that the cost of technological means today is lower than in the past. This low cost prompts higher education authorities to strive to integrate these technologies into the institution and benefit from them.

From this, we conclude that the use of technology is of paramount importance in academic institutions, not to mention various other institutions. This is due to the progress witnessed worldwide, such as the successive changes and developments in various fields, especially the technological field. This field has become considered the primary means of achieving institutional leadership and producing highly qualified human cadres.

2 /Requirements for the Use of Modern Technology:

As a result of the recent technological development witnessed by various institutions, especially higher education institutions, this has led to the necessity of adopting and integrating modern technological means. These applications aim to fulfill a set of basic requirements for the success of the educational process. The most important of these requirements are summarized below:

•Administrative Requirements

All departments, especially university administrations, must have the necessary tools to eliminate bureaucratic and routine procedures that hinder any innovation in the methods used by these organizations. The following requirements are necessary, summarized below:

- Raising comprehensive awareness among employees about the importance of using modern technological means.
- Providing communicative infrastructure and ensuring its validity.
- Preparing a comprehensive study of the existing information systems, devices, equipment, and networks in departments and utilizing them to implement modern practices.
- Developing an information system composed of specialized systems to achieve information integration.
- Providing political management, such as the designated official or committee responsible for overseeing implementation and evaluating the progress achieved.(Sharki & Bouzian , 2019, p. 237)

To achieve quality and effective higher education, the aforementioned administrative requirements must be in place. These requirements help to facilitate and develop administrative work at the university. Without regulatory laws, a comprehensive infrastructure, and a lack of employee awareness, all of this leads to weakness and inadequacy in the use of modern technology at university institutions.

•Technical Requirements

The modern use of technological means in universities is a modern technological management method aimed at improving institutional performance and operational outcomes. It can also achieve significant results at the economic, social, and political levels. However, this modern method requires the provision of appropriate infrastructure, as well as the need to review the basic infrastructure of hardware, equipment, and software, with the aim of updating them to respond to the desired changes for the success of the educational process in universities.

•Human Requirements

The human element is one of the most important requirements and effective elements within organizations. Without it, organizations cannot succeed or advance toward achieving

their desired goals. Therefore, it is necessary to qualify and train human resources, in addition to equipment and machinery. Accordingly, qualified personnel must be provided, along with incentive and training programs, as well as technological empowerment.

Third: Competency Management and How to Achieve It.

1 -Stages of Competency Management.

In order to manage competency in the required and appropriate manner, it must go through the following basic stages:(brilman, 1998, p. 386)

1 *A good understanding of the organization's human resources structure through quantitative indicators such as the age pyramid, the distribution of training levels, and wage levels, comparing them with competitors, and qualitative indicators of its resources through evaluation systems.

2 *Business forecasting and anticipation (future, and identifying strategic competency needs.

3 *Preparing a recruitment, training, and job rotation plan as one of the most important methods of competency management. However, it is difficult to develop these plans for the following reasons:

- The employment policy contradicts the priority of short-term needs.
- The difficulty of balancing the acquisition of new management methods that impose group and individual training, and the strategic training required by new jobs.
- The difficulty of organizing a mobility plan between positions, especially in small and medium-sized enterprises with a low turnover rate. However, in large enterprises, it is necessary to resort to incentives, given that mobility contributes greatly to creating a spirit of creativity and innovation instead of routine work. Within this framework, training plays an important role in the process of developing competencies because it contributes to achieving the goals associated with acquiring knowledge as a resource, and institutions acquire it to build the competencies of individuals and renew resources and competencies.

2 /Objectives of Competency Management

Competencies are characterized by the following:

-Competency has a purposeful purpose: that is, it is embodied through the application of a set of knowledge to achieve a specific goal or carry out a specific activity. An individual becomes competent if they are able to fully execute this activity.

-Competency has a dynamic formation: Competency results from the interaction of different types of knowledge and across the various levels of its components (knowledge, practical knowledge, behavioral knowledge over time). This indicates that competency is linked to activity. Competency can only exist if its resources—theoretical knowledge, practical

knowledge, and behaviors—are utilized in carrying out activities. In other words, competency must be practiced practically in the field. (Jahik & abeidat, 2014, p. 131)

-Competency is an abstract concept: Competency is intangible and invisible, and is demonstrated through the activities undertaken, the means used, and the results of these activities. It is determined through activity analysis.

- Competence enables an individual to transition from one work situation to another. This is achieved at three different levels. The first level is the level of creativity and the projection level. If the individual is faced with a new situation, he is required to be creative. If it is similar to a previous situation, he is required to project by resorting to analogy. At the final level, the individual is forced to imitate, and the worker is satisfied with mere transfer.

- **Competencies are perceived :** They are useless if they are not fully perceived by the individual, enabling him to maintain, develop, and utilize his knowledge.

2-The Methodological and Applied Framework of the Study:

First : Methodological Procedures:

•The Methodology Used:

The method is the path and approach the researcher takes to diagnose, address, and analyze phenomena, with the aim of providing results that are consistent with the nature of the subject under study, according to the appropriate methodology and type of study. Therefore, the descriptive analytical method was used for description and interpretation, and is most appropriate for the nature of topics within the field of media and communication. The descriptive method is one of the most widely used methods in the humanities and social sciences.

•Data Collection Tool:

The data collection tool is a technique through which quantitative responses are translated into qualitative information to provide interpretations that summarize the study results. The instrument used was a questionnaire, which included five items: gender, age, areas of technology use in performing educational tasks within the university, advantages of using technology in managing university competencies, requirements for using technology in managing university competencies, and difficulties in using technology in managing university competencies. The English language was used to present the questionnaire questions, and we relied on the traditional quantitative method of calculating the frequencies and percentages of respondents' answers, which was distributed to 40 individuals for a scientific purpose and in complete confidentiality with employees within the specified spatial context. Its axes address

the most important points of commonality between the management and efficiency of employees to improve job performance.

• Research community:

The research population consists of employees of the Faculty of Humanities and Social Sciences at Badji Mokhtar University, Annaba. Given their large size and the limited timeframe for the study, a sampling method was chosen to identify the most significant technology applications and their use in managing efficiency and improving job performance.

•Sample

The sampling method chosen was a purposive sample. The reason for this is that the timeframe for processing the article coincided with the end of the academic year, as well as the professional pressures on human resources within the Faculty of Humanities and Social Sciences, Annaba. The sample was estimated at 40 individuals from various departments.

Second : Field procedures:

Table 1 : Gender and age.

Sex	Number	Percentage	Age	Number	Percentage	Experience	Number	Percentage
Male	10	25%	From 30 to 40	25	62.5%	From 1 year to 15 years	28	70%
Female	30	75%	41 and above	15	37.5%	16 years and above	12	30%
Total	40	100%	Total	40	100%	Total	40	100%

Source: Prepared by the researchers

We conclude from the table above that the following indicators were addressed: gender, age, and professional experience, in order to encompass age groups and professional experience, so we conclude that females have a higher percentage than males, with an estimated number of 30 out of 40. As for the predominant age group, it was from 30 to 40 years, which was expressed by a percentage of 62.5%. As for professional experience, the highest percentage indicated from one to 15 years, estimated at: 70%. Here, all universities must take into consideration their human resources and make decisions and the extent of their implementation based on the indicators previously mentioned regarding technological use.

Table 2: Areas of technological use to perform pedagogical tasks within the university institution.

Areas of Technology Use	Number	Percentage
Processing administrative files for students, faculty, and administration	18	%45
Monitoring student grades and everything related to transcripts	13	32.5%
Reviewing and directing appeals and administrative matters	09	22.5%

Total	40	100%
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Source: Prepared by the researchers

From the second table, we conclude that the The areas of technological use to perform administrative tasks within the university institution are mainly represented in processing administrative files related to students, professors and administration, as confirmed by 45% of the respondents' answers. If this indicates anything, it indicates an improvement in services and their quality as a burden on the university in general and the college under study in particular, as administrative files for each of the students, professors, and administration are the primary tasks, such as registration certificates, school certificates, administrative certificates, good conduct certificates, graduation certificates, or even the required documents related to internship grants, which require precision and focus from both the student and professor. This is followed by monitoring student grades and everything related to pedagogy, at a rate of 32.5%, including what is related to changing groups, score sheets, and handling issues between students and professors. As for the study of appeals and what is related to management and their direction, it was 22.5%, and among the most important appeals known in the academic context are appeals submitted regarding: appeals about results, appeals about grades, appeals submitted after the results of scientific and training committees and scientific councils, as well as appeals related to the results of competitions or even in specializations. This has become what has become enhancing the use of technology and allowing the employee to follow up on administrative tasks, especially workflow platform, which facilitates the processes of transfer, processing, follow-up and evaluation, and also creates an organizational environment suitable for work.

Table 3: Advantages of using technology in managing competencies within the university institution.

Advantages of using technology in university talent management	Number	Percentage
Faster processing of administrative files	16	40%
Unlimited information exchange and transfer	10	25%
Facilitating tasks and performing them to the best of their ability	07	17.5%
Human resources acquire technical skills in pedagogical tasks	07	%17.5
Total	40	100%

Source: Prepared by the researchers

From the table above, we conclude that the use of technology has advantages in managing competencies within the university institution, the first of which is represented in processing administrative files faster, Which generates two elements: tangible improvements in processing speed, and quality in services provided, as explained by 40%. As for the exchange and transfer of information without barriers and not monopolizing it between levels or stakeholders, such as bypassing the time and place standard, it represents 25%, while the remaining percentage remains equal between facilitating and performing tasks on the one hand and the human resource gaining technical skills in pedagogical burdens on the other hand, at 17.5%. All of this is due to the adopted culture, as well as the objectives set and even the leadership style within the institution under study. However, the advantages and positives of the use of technology are not limited to the choices according to the table above, but there is also what pertains to the

social, technological and organizational aspects related to both the administrative and educational process.

Table Four: Requirements for technological use in the university’s competency management.

Requirements for the Use of Technology in Competency Management at the University	Number	Percentage
Administrative Requirements	21	%52.5
Human Requirements	12	%30
Financial Requirements	07	%17.5
Total	40	%100

Source: Prepared by the researchers

We conclude and deduce from the fourth table, entitled “Requirements for the Use of Technology in Competency Management at the University Institution,” that it has become necessary to have administrative requirements, which lie in instructions, orders, and decisions, and clarify the course of tasks and how to apply and implement them on the ground. This is what was confirmed by 52.5%, which clarifies the importance of administrative communication and its contribution to achieving and improving the functional return of competencies with regard to dealing with and using technology. Then, importance was given to human resources at a rate of 30%, which clarifies the importance of competencies, their management, and their ability to adapt to administrative decisions. As for financial requirements, they were at a rate of 17.5%, which indicates that the university institution is managed according to its financial budget, Processing administrative files also leads to adoption, indicating that digital transformation is focused on core administrative workflows.

Table 5: Difficulties in using technology in managing efficiency at the university.

Difficulties in using technology in university talent management	Number	Percentage
Lack of empowerment of employees to use technology.	12	30%
Lack of training and development of employees to use modern technologies.	17	42.5%
Monopolization of information and failure to share expertise to perform tasks.	09	22.5%
Required to complete tasks within a short time.	07	%17.5
Total	40	%100

Source: Prepared by the researchers

We note from the table above that the difficulties of using technology in managing competencies at the university lie in the lack of training and education of employees to deal with and use modern technical equipment and applications for the smooth running of work and its performance. This was confirmed by a percentage of 42.5%, and this is what institutions lack in general, regardless of their nature. However, there are those who support that the difficulties lie in the lack of empowerment of employees to deal with technology, at a rate of 30%. This is due to years of experience, individual capabilities of the employee, and his ability

to comprehend work according to the technical aspect within the university space. However, the percentages were close between each of: monopolization of information and failure to share experiences to perform tasks on the one hand, and the obligation to perform tasks in a short time on the other hand, i.e. 22.5% and 17.5%. Here, the organizational culture of the institution plays a role in strengthening the principle of teamwork for employees.

Discussion of the Results:

From the above, we conclude a number of results, the most important of which are the following:

- It is concluded that the use of modern technology contributes to the management of competencies in higher education institutions by implementing the administrative process in accordance with the requirements of digitizing the sector.
- The use of technology represents a qualitative shift in the optimal and complete performance of tasks for human resources within higher education and scientific research institutions.
- Competency depends on the sharing of experiences and knowledge among them to contribute to achieving the desired goals of higher education institutions, including overcoming the difficulties facing human resources and attempting to implement the digitization of the sector as stipulated in the decisions of the Minister of Higher Education and Scientific Research.
- We conclude, through analyzing the data obtained, that the training and development programs at the university have not yet included all departments and employees, including the postgraduate studies departments, the personnel department, and the pedagogical departments affiliated with the departments. Therefore, we seek to ensure comprehensive training and development for all employees within university institutions.
- We conclude from the data and its analysis that the individual qualifications of competencies play a role in enabling them to use and engage with technology. This, in turn, contributes to achieving functional outcomes, as a requirement for the success of the administrative and pedagogical process in the university context.

Conclusion :

We conclude from the research paper that the use of technology plays a role in managing employee efficiency within universities and institutes. This results in achieving functional outcomes as outcomes of the administrative and pedagogical process through the combined efforts of all parties. This is what higher education institutions seek to embody as one of their stated objectives.

Thus, through this study, we focus on the importance of intensifying empowerment and training processes, and of developing and distinguishing human resources for effective management. Therefore, we argue that competency management is closely linked to everything related to administrative requirements and decisions and the extent to which they are implemented to achieve functional outcomes.

This study also reached a set of recommendations, the most important of which are summarized below:

- Eliminating the difficulties that may hinder university development in accordance with the requirements of the sector's digitization.
- Contributing to the comprehensive integration of skills training for various departments within Algerian universities, as a social and economic partner.

- The need to unify training programs to benefit the university's human resources, not just its employees.

-Limitations and future research :

Finally, we point out a number of limitations and future research on the use of technology to manage efficiency to improve job performance within the university, most notably:

- Establishing digital platforms to determine self-performing work within work teams.
- Intensifying communication policies, including digital ones, to train employees on the dynamic and interactive process within the institution in accordance with modern requirements.
- Attempting to reduce and limit organizational obstacles and provide a work environment that encourages and motivates work in digital formats instead of traditional methods.
- Links must be established between the university and other active partners to consolidate community and digital services.

Sources And References:

1. Ben Jeddou, M. (2012-2013). The Role of Competency Management in Achieving the Excellence Strategy: A Case Study of Antar Trad Condor Corporation, Bordj Bou Arreridj., thesis submitted for a Master's degree in Management Sciences, specializing in Strateg.
2. Alawi , A. (2007). Organizational Development and Investment in Competencies and Their Role in Bringing about Positive Change in Institutions. *Journal of Human Sciences*.
3. brilman, J. (1998). best management practices,. Paris: publishing organization.
4. abidi , F.-Z. (2018). Managing the university institution between the challenges of the information age and the requirements of knowledge management as an important approach to developing organizational performance - Annaba University as a model. *Tanweer Magazine*(6).
5. Arour, m. (2013). Quality in Algerian Higher Education, an Analytical Study Based on Document Processing. *Journal of Human and Social Sciences*(6).
6. Ayyad , M., & et al. (2022). Uses of educational technology and its impact on the job performance of the physical education and sports teacher, *Technologies, Physical Activities and Sports. Tafawuq Journal of Sciences*, 7(2).
7. Boutahra, A. (2017). Determinants of the Use of Information and Communication Technology in the Educational Process at the University. *Al-Hikma Journal of Educational and Psychological Studies*, 5(11).
8. Cadin , L., & Guerin , F. (2002). *Human Resources Management. Practice and Element of Theory*. Paris: Persson education.
9. Ghawi, F. (2022). Requirements for the Use of Modern Technology in University Institutions, an Analytical Study. *Bidayat Journal*, 4(1).
10. Jahik , A., & abeidat, S. (2014). The impact of knowledge sharing in developing collective competencies - a field study in the Meditram Company in Algeria . *Algerian Institutional Performance Journal*(6).
11. Sharki, M., & Bouzian , H. (2019). E-management and its requirements in the Algerian university. *Journal of Economic and Financial Research*(6).

12. Chambat Pierre: L'innovation technique. Récents développements en sciences sociales - vers une nouvelle théorie de l'innovation (Patrice Flichy). In: Réseaux, volume 13, n°74, 1995. Télévision et apprentissages.