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# The Didactic of Communication and the Integration of Modern Information and Communication Technologies in Higher Education: Toward a Pedagogical Model for Enhanced Teaching-Learning Interaction

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**Keywords** Didactic of communication; Higher education; Information and Communication Technologies (ICT); Verbal communication; Non-verbal communication; Pedagogical interaction; Digital learning.

**Abstract**

In the contemporary academic landscape, communication and technology have emerged as essential pillars of effective higher education pedagogy. Communication, both verbal and non-verbal, forms the foundation for meaningful human interaction, facilitating the transfer of knowledge, values, and competencies within the educational process. This study examines the role of didactic communication and Information and Communication Technologies (ICTs) in enhancing pedagogical efficiency and promoting active engagement between teachers and learners in higher education institutions. Drawing upon interdisciplinary theoretical frameworks from pedagogy, linguistics, and educational technology, the research explores how integrating communication didactics with ICT can contribute to the reformation of teaching-learning paradigms. It emphasizes the necessity of transitioning from teacher-centered instruction to learner-centered models, supported by digital tools that enable interactive learning environments. The findings suggest that the effective use of ICT enhances educational communication, fosters innovation, and equips both teachers and students with the competencies required for contemporary academic and professional success.

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## 1.Introduction

The teaching-learning process at **the higher education level** requires taking note of the specificities of this process and the surrounding sciences of education, pedagogy and didactics, perhaps the latter is of great importance, if we consider that it is related to the applied aspect of the teaching-learning process, as **communication pedagogy** is an urgent necessity for the teaching process, as it contributes to enabling educational frameworks to perform their roles effectively, by matching curricula and study programmes with different teaching situations, which in turn need modern information and communication technologies that help the professor and university student to succeed in the educational process, as well as the use of information and communication technologies to achieve success in the educational process.

On the other hand, **communication pedagogy contributes** to adjusting the appropriate procedures and measures for teaching the subject matter, in addition to planning that helps in achieving the objectives and competencies, as communication pedagogy is a conceptualisation that clarifies the philosophy of the curriculum, and helps to deduce a set of effective strategies in the teaching process, especially in the higher education sector, which has received great attention in all countries of the world, because of the services it provides in the field of developing scientific research and providing qualified human resources in order to revitalise the national economy and reform the education sector. higher education and serving society in light of the intellectual and economic changes that the world is witnessing in recent times, which has led most countries to focus on developing the levels of knowledge and science through the graduation of competent specialists who are able to Contributing to the development of society through the adoption of universities as edifices of scientific and technological innovation, as the interest in scientific research and the preparation of human competencies capable of assuming the responsibilities of working life has become one of the objectives of social and economic development in the country.

Considering the importance of communication and information and communication technologies in the educational process and enabling teachers to understand the nature of their roles and activate their intervention process in terms of diagnosing the difficulties that require the necessary remedies, in order to correct and evaluate the various learning situations, which requires updating the patterns of innovation, development and change in the essence of the teaching-learning process, according to which the focus is on the learner instead of the teacher and the educational material on the one hand, and on the other hand moving from the pedagogy of teaching and objectives towards the pedagogy of competencies. They contribute to the proper pedagogical transfer of the targeted knowledge, values, skills and competencies into teaching activities in special pedagogical situations, in addition to controlling the process of formulating cards and networks framing teaching activities, which helps to control its sections, inputs, processes and outputs, in addition to the continuous updating of the means of pedagogical work.

Therefore, this study focuses on the role of **Didactic Communication** and **ICT** in improving the teaching-learning process in higher education.

**So, what is the meaning of communication didactics? What are information and communication technologies? And How can they be used in the field of pedagogy?**

## 2. Communication of Didactic

According to the importance of communication didactics in the learning and teaching process at the higher education level, and to delve deeper into this term, we will define didactics separately and define communication and its most important types as follows:

### 2.1. The Concept of Didactic :

Didactic is an independent scientific field, entrusted with the task of formulating concepts and methods that can constitute a scientific approach, as didactics is a part of pedagogy, the subject of teaching [Cornu and and Vergnioux, 1992, p70]. Didactics is also a special approach to the problems of learning, it constitutes a self-contained field of knowledge, as it deals with educational phenomena by analysing them, it is a reflection on the scientific material in order to teach it in the presence of two types of issues, one related to the material itself and the other related to the individual in a learning situation and it aims to achieve a scientific goal and develop strategies for the teaching-learning act, and on this basis it carries a scientific characteristic because it constitutes a coherent system of knowledge in continuous growth through the integration of old and new knowledge [Loursi, 2016, p23]. It is the scientific study of teaching methods and techniques and the forms of organisation of learning situations to which the student is subjected in the educational institution, in order to achieve the institutionally set goals, whether at the intellectual, affective or sensory-motor level, and achieve knowledge, competencies, abilities, attitudes and values [Al-Dreij, 2023, p15]. So, didactic is the science that is concerned with the educational process and teaching methods that help to implement the various classroom and extracurricular activities prescribed in the curriculum, educational plans, and various media that contribute to the success of the entire didactic process.

### 2.2. The concept of communication:

The word **communication / La Communication** comes from the Latin word « Communis », meaning 'common' or 'general' [Jawhar, 1980, p11]. The Dictionary of « Didactique des Langues » defines communication as: « the transfer of information between a sender and a receiver by means of a message that is transmitted between them through a communication channel [Galisson and Coste, 1976, p50 ] ».

Communication means the continuation of a strong relationship between the two parties involved in it, as well as the opening up of oneself to the other in a living relationship that does not end until it returns again.

Charles Cooley defines communication as follows: « Communication is the mechanism by which human relationships exist and develop. It includes all symbols of the mind with the means of communicating them across space and reinforcing them in time. It also includes facial expressions, body language, movements, tone of voice, words, writings, publications, trains, telegraphs, telephones, and everything else that the latest discoveries in space and time encompass [Mekawy and Al-Sayed, 1998, p. 23]." According to Charles Coulef, communication is the essence of human relationships and the catalyst for their development. It has two functions: a cognitive function, which consists of transmitting mental symbols and communicating them spatially and temporally through linguistic and non-linguistic means, and an affective function, which consists of strengthening and activating human relationships on both verbal and non-verbal levels.

Communication is therefore the exchange of information and linguistic and non-linguistic messages, whether intentional or unintentional, between individuals and groups. Communication is not merely the transmission of information in a linear, one-way manner, but an exchange of ideas, feelings and messages that may or may not be understood in the same way by all individuals involved in the communication situation. Communication is thus a process of transmitting and receiving information between two or more parties, based in its contexts on feedback when there is poor reception or interference.

In general, communication refers to the relationship that occurs between people within a specific context or between a group of contexts. It may take place directly through personal encounters between individuals and groups, or indirectly through spoken, printed, visual, or electronic words, or through images and other means and activities. In terms of scale, it may occur between two people or between a person or group and another local, regional or international group. Communication is therefore considered a characteristic rooted in both human consciousness and natural instinct to such an extent that it becomes an inherent part of the act of being, meaning: I communicate, therefore I am.

According to George Lindberg, communication is 'that interaction by means of signs and symbols, where symbols are movements, images, language or anything else that acts as a stimulus for behavior [Rashti, 1978, p53], meaning that communication is a type of interaction that occurs through symbols.

Communication is therefore the transmission of ideas and the exchange of information and feelings through speech, writing, symbols, signs and other expressions in order to send messages to the addressee. It is a process of transmitting ideas and experiences and exchanging knowledge and feelings between individuals and groups. This communication may be personal or interpersonal, and it may be based on agreement or on opposition and disagreement.

- **Types of communication**

Communication is linked to several sciences and fields of knowledge, which can be summarised as management, public relations, pedagogy, didactics, marketing, media and communication sciences, philosophy, semiotics, etc. Therefore, there are many different types of communication, such as: **collective communication, mass communication, international communication, social communication, semiotic communication, philosophical communication, pedagogical communication, economic communication**, etc.

**A- Communication from a linguistic perspective**: A group of linguists believe that the function of language is communication, such as Ferdinand de Saussure, who states in his book 'Course in General Linguistics' (1916) that language is a system of signs and signals whose purpose is communication, especially when the signifier is structurally linked to the signified or when the auditory image intersects with the mental concept [Barnlund, 1988, p70]. This is almost the same concept that Ibn Jinni referred to in his book 'Al-Khasais' when he defined language as 'sounds through which people express their intentions.' André Martinet defines language as a double articulation whose function is communication [Martinet, 1960, p81]. This means that language can be divided

into a first articulation, which is words, which in turn are divided into phonemes (sounds) and morphemes (morphological segments), which in turn form the second articulation. However, sounds cannot be divided into other units because a sound is an indivisible syllable. If we combine phonemes to form morphemes, and if we combine words to form sentences, and sentences form paragraphs and sequences, and paragraphs form text, then text—composition and substitution—is what is called language, one of whose fundamental objectives is communication. Roman Jakobson argues that "language has a functional dimension and has six elements and six functions: the sender (whose function is affective), the receiver (whose function is effectual), the message (whose function is aesthetic), the reference (whose function is referential), the channel (its function is preservative), and language (its function is descriptive). Some add a seventh function, which is the iconic function [Hamdaoui, 2012,p3] ". While functionalists believe that clear language serves the function of transparent communication between speaker and listener, Azould Ducrot believes the opposite, that 'language is not always a language of clear and transparent communication, but rather a language of implication, ambiguity and concealment [Al-Sabti, 2009,P 25].This means that individuals may use language as a social game of camouflage and concealment, hiding their intentions and purposes. This linguistic concealment may be the result of religious, social, psychological, political, and moral reasons, which means that language has multiple meanings, increasing its ambiguity and lack of communicative transparency. Roland Barthes goes further in his interpretations of human language, considering that 'language is far from communication and makes it a language of authority whose source is power [Barthes, 1986, p29] This means that humans are both slaves to language and free at the same time. When a speaker speaks a foreign language, they are subject to its rules, structures and cultural system, but at the same time they use this language as they wish and adapt it aesthetically and artistically. Thus, we conclude that language can be a tool for transparent communication, but it can also be a language of concealment, camouflage and deception, as well as a tool of power.

**B- Communication from a philosophical perspective**: The concept of the self and the other in philosophical discourse raises many issues, all of which focus on how to deal with the other and how the self can view the other. German philosopher Hegel argues that 'the relationship between the self and the other is a negative relationship based on dialectical conflict [Chandler, 2008, p240] This is illustrated by his theory called 'the master-slave dialectic. Jean-Paul Sarter, on the other hand, believes that 'the other is a necessary passageway and mediator for the self, but the other is an unbearable hell because it objectifies the self [Hanoun, 1987, p96] For this reason, Sarter calls for caution, vigilance and aggression in dealing with the other, arguing that it is impossible for the self and the other to coexist or communicate with each other. as long as the other usurps the freedom of the ego and freezes its will. However, Merleau-Ponty rejected Sartre's rationalist fragmentation theory and considered that 'the relationship between « the ego » and « the other » is positive, based on respect, integration, cooperation and communication, and the basis of this communication is language.'

**C. Communication from a semiotic perspective**: The research of Prieto, Mounin, Buyssens, Martinet, and others falls under the framework of communication semiotics. They all agree that the Saussurean sign is composed of a triadic unit: the signifier, the signified, and the intention. In their work, they focus heavily on the communicative function, which is not limited to spoken language, but also exists in other non-linguistic systems such as : advertisements, slogans, maps, signs, magazines, written texts, and all data produced for the purpose of communication. All of the above constitute signs, whose contents are messages or transmitters. Breito believes that: 'What distinguishes the communicative function from the semantic function is the intentionality that is evident in the former but not in the latter [Ben Karrad, 2015, p20] Proponents of communication semiotics contributed to the development of Saussure's project, which posits that language is a system of communication, as did Troposkoy, Martinet, and Breito, who took a keen interest in studying non-linguistic communication systems and their uses, such as advertising, bus numbers, and other systems.

**D. Verbal communication:** Linguistic communication between speakers involves phonemic, syllabic, morphological, lexical and syntactic units, i.e. linguistic communication relies on sounds, syllables, words and sentences. Linguistic communication takes place through the auditory channel, i.e. it relies primarily on human language and is achieved aurally and vocally. Spoken language has a linguistic level that is a system of signs (the relationship between the signifier and the signified) in the Saussurean sense, which is a system of units that we call discourse units [Ajwa, 1989, p33].

Noam Chomsky believes that 'language has an expressive function' and acknowledges that communication is only one function among others that language may perform, just as the European functional school believes that 'the function of human language is communication [Chomsky, 2009, p98].

Nader Muhammad Sarraj said: "Speakers of a particular human language communicate with each other easily and fluently because they all possess and use the same set of rules in the same linguistic environment, which allows them to easily receive, send and analyse all linguistic messages. This is what happens initially through what we call verbal communication, which is the most widespread and commonly used form of communication [Muhammad, 2004, p87] ". Dolan and Bayer attempted to analyse **verbal behavior** in the classroom in order to understand emotional and cognitive communication in their valuable book How Teachers Teach: An Analysis of Verbal Interactions in the Classroom. One of the networks dedicated to analysing verbal interactions in the classroom is the Flanders Interaction Analysis Categories (FIAC) network, commonly referred to as FIAC, which is Flanders' framework for analysing verbal interactions between teachers and students [Dovito, 2008, p116].

**E. Nonverbal communication:** The visual channel plays an essential role in communication in general and **pedagogical communication** in particular, as the act of communication between a teacher and students does not only employ a spoken language format, but also a system of signs, movements and gestures that fall within what we call non-verbal communication, which is:" The sum total of the means of communication found in living persons that do not use human language or its non-auditory derivatives (writing, language of the deaf and dumb) [Knapp.M.L, 1972, p13] ". The term non verbal communication is used to denote movements, body postures and orientations, natural and artificial physical characteristics, but also how things are organized and through which information is communicated. Harrisson identified some of the elements of non-verbal communication as: All expressions performed by the body (movements, features), belonging to the code of achievement: Cultural signs such as the way of dress, which is the artificial code, and the use of space and decoration, which is the contextual code: The effects produced by sounds and colours such as: The traffic light system, which is the intermediate code [Gohar, 1980 p120].

In their studies, the researchers have focused a lot on **verbal communication**, neglecting non-verbal and paralinguistic behaviors. If verbal and non-verbal communication is one of the features of human behavior, it is worth recalling that researchers have previously focused their efforts on the verbal aspects of this communication, ignoring the non-verbal codes that were usually attributed to the vocal variety [Al-Sayed, 1998, p27].

Thus, communication can also be realized through **non-verbal forms** of communication that sometimes replace verbal communication, and sometimes even accompany it.

### 2.3. Communication pedagogy in higher education:

The stage of university education is very important in training students to speak, dialogue and write, in addition to learning different techniques and communicative situations in order to prepare them psychologically, emotionally and mentally to enter working life. Education has restored language to its basic function, which is communication, where the focus is on the communicative approach to language affairs, especially communication of two kinds: verbal and non-verbal: Research has been directed towards the rules and characteristics of oral discourse, based on recording and analysing dialogues and extracting speech rules from them. Research has also been directed towards evaluation based on identifying oral expression competencies and setting good performance standards [Sayah and other, 2006, p02]. In written communication, research has been directed towards studying real situations The purpose of this approach is to link the learner to life and to give expression and its techniques a natural functional character.If we want the learner to control oral and written communication, we must expose him to as many texts of various styles and various researches and books that deal with the issues of expression techniques. Since the professor of higher education is the one who manages this process, he must focus on the success of the communicative process by preparing standards, adopting effective teaching methods, leaving the learner free to participate in expression and communication classes, identifying and correcting students' mistakes and using educational and explanatory aids, and this can only be done by investing what came from the pedagogy of competencies and the communicative approach by the professor and the university student [AbdelAli, 2008, p124]. Given the importance of this stage, it is necessary to leave the university student free to express what is on his mind, where he expresses his opinion and participates in various situations that require his participation.

Therefore, the authors of the programmes and vocabulary of educational standards and modern university documents based on the approach of teaching with competencies and under the **LMD system** have paid attention to the pedagogy of communication as a fertile space through which the university student can express what is in his mind and consciousness.

Therefore, it is necessary to pay attention to the pedagogy of expression and communication in its various techniques and steps, especially in light of the modern communication theory, which seeks to graduate competent students who read and express by speaking and then by writing, which is the last stage through which the university student's ability to read, perform correctly and absorb linguistic phenomena can be evaluated.

### 2.4. Communication Competencies in Higher Education:

There are several communication competencies in higher education that professors and students must possess for successful and effective communication, including the following:

- The ability and skill of the student and the professor to express themselves, their feelings and ideas honestly and eloquently, using simple and logically sequential language.
- The ability of the higher education teacher to construct a message that takes into account the student's situation, characteristics, status and relationship to the context in which the communication takes place.
- The competence and intelligence of the higher education professor in recognising the different personal styles of university students and how to deal with each personality appropriately.
- The knowledge of both the professor and the student of higher education of the language and the connotations of its vocabulary, structures and expressive methods and the ability to organize the communication message and express its ideas clearly and accurately, as the greater the linguistic ability, the greater the ability of the sender to send his message and the ability of the receiver to understand its meanings [Saadat, p30].
- The skill and ability of university students to communicate orally and in writing with clarity of message without complexity.
- Good use of body language during communication, both for the student and the professor, which leads to successful and effective communication that contributes to the communicative process.
- Organizing oral discourse and understanding the basics of dealing with other speakers in the phrases used to communicate [Sayah and other, 2006, p49].

### 2.5. Targeted competencies of communication pedagogy in higher education :

The goal of communication of various types and techniques at the higher education level is the following:

- - The student controls the written and verbal language and is able to communicate with others fluently and fluently without any error that breaks the rules of the language and spoils its systems.
- - Communication pedagogy enables the student to express himself in various situations that he is exposed to in his life, such as: Dialogue and discussion, presentations and interventions, public speaking and debate, writing reports and summarising books and lectures.
- - This process enables the student to control the techniques of producing texts of different types and with high linguistic efficiency, descriptive, narrative, explanatory, etc.
- - Refine the university student's expressive and communicative skills, develop his reading skills, motivate him to love reading, and familiarise him with as many creative productions and different texts as possible to invest them in the production of other texts and create within the framework of a textual approach that helps him to give.
- - This process trains students to improvise and flow in connected speech, write without preparation, and respond intuitively to oral speech.
- - It enables students to eliminate common errors and lexical constructions.
- - It helps students to understand what they hear from their professors, answer their questions, and identify the elements of that answer in writing, such as: Students' activities and responses to the measures of their studies or exams.
- - This process can remove fear, hesitation and shyness from the hearts of some students when they face others or when a group listens to their speech.
- - Providing students with the opportunity to use their own linguistic repertoire and styles in communicating with their professors and classmates.
- - Accustom higher education students to arrange their thoughts in a logical and systematic order and alert them to linguistic errors that make them pretend, avoid prejudice and avoid emotional situations [Bouchouk, p25].

- - Preparing students for sound logical thinking by finding the appropriate meaning and formulating it in compatible words and arranging sentences in a way that leads to the clarity and strength of ideas.
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The most important competencies targeted by communication pedagogy can be summarised in the following table [Ouchan, 2010, p19]:

**Table 1. Targeted competencies of communication didactics**

| Targeted competence | Abilities and skills |
|---|---|
| **Methodological competence:**<br><br>- Thinking methodology<br><br>- Organizes and manages work well | - Adopts a design appropriate to the topic<br><br>- Follows a logical sequence<br><br>- Divides the topic into paragraphs<br><br>- Avoids padding and repetition<br><br>- Addresses key elements |
| **Communicative competence:**<br><br>- Mastery of the use of grammar<br><br>- Mastery of different modes of communication.<br><br>- The ability to produce a discourse such as: Dialogue or text.<br><br>- Ability to express attitudes or points of view. | - avoids errors of all kinds<br><br>- Ensures the correct connection between ideas and the type of expression.<br><br>- Makes good use of punctuation.<br><br>- Ensures clear handwriting. |
| **Cultural competence:**<br><br>- Uses the learner's cultural capital | - Presents clear content.<br><br>- Ensures that information is correct<br><br>- Optimizes the use of knowledge. |

## 2.6. Pedagogical treatment of errors made by higher education students:

The process of addressing and correcting errors is an essential part of the teaching and learning process. Through this process, we discover student's errors and the most significant difficulties that prevent them from acquiring oral and written communication skills, and then address them and attempt to control the rules and regulations of the language and acquire its skills. One of the methods for correcting student's mistakes is this network, which includes the criteria used to correct students' mistakes.

**Table 2. The Standards used to correct student's mistakes**

| Criteria | Indicators | Control | |
|---|---|---|---|
| | | Yes | No |

| | | | |
|---|---|---|---|
| **Relevance** | Adherence to the topic, use of expansion techniques, use of values. | | |
| **Language accuracy** | Proper use of grammar and morphology, use of punctuation marks in the appropriate places. | | |
| **Coherence** | Sequence of ideas, relevance of ideas to the topic. | | |
| **Proficiency** | Use of rhetorical techniques, use of sophisticated language, good presentation, beautiful handwriting. | | |

There is another assessment system adopted by textbooks and curricula in higher education.

To assess student's verbal communication, there are several ways to evaluate students in class and while they are speaking and producing oral texts.The following are the criteria for assessing and correcting student' s oral mistakes:

**Table 3. The Standards for evaluating and correcting student's oral errors**

| Criteria | Yes | No |
|---|---|---|
| - Does he speak clearly? Does he pronounce his words carefully? Is his information correct?<br><br>- Does he vary his tone of voice? Does he express himself fluently without excessive intonation and errors? Does he use body language in his expression? Does he communicate well with the teacher and students? | | |

Finally, each criterion is given a specific rating based on the degree of control, which are then combined to measure the student's linguistic and communication skills.

## 3. Modern Technologies

Information and communication technology plays a significant role in the teaching and learning process within the classroom. Its role is no less important than communication didactics in improving the quality of the teaching and learning process in the higher education sector, Therefore, we will define the concept of modern technologies and their role in the educational process as follows:

### 3.1. Concept of Information and Communication Technology:

The word (technology) is derived from two Greek words (Techno) meaning art, skill, craft or craft, while the other part (Logy) is taken from the word (Loges) which means science or study and some translate the word (technology) as technology or techniques while others see it as technology or technologies [Abdulaziz and yusra, 2019, p379].

The Macmillan Dictionary defines it as : "the acquisition, processing, storage and dissemination of audio, video, textual and digital information by a combination of microelectronics consisting of computers and telecommunications".

It is defined by Dr Mohammed Aliuddin as : "the accumulated and available knowledge, experience, skills, tools and physical, organisational and administrative means used by humans in obtaining written and visual information [Toumi, 2006, p52] », while information technology is defined as: "the combination of physical and human components, software and procedures that work to collect and process information. The retrieval and

distribution of information with the aim of supporting the decision-making and control process in the organisation [Rashwann, 2017, p12].

Karami defines it as: "the process of knowledge, its application, processing, transfer and making information more sophisticated [Fereydoon, 2012, p95]".

### 3.2. Information and Communication Technology in Higher Education:

**ICT** in higher education is defined as: "the science concerned with the storage, retrieval, processing, and transmission of information using computers. The International Encyclopedia of Information Science and Librarianship defines it as the electronic technology needed to collect, store, process and communicate information, it includes physical tools and digital resources that can be used for teaching and learning purposes [Daif Allah, 2017, p207].

**The UNESCO report** (2002) emphasised that ICT in higher education can be considered "a combination of information technology and other related technologies, especially communication technology and the different types of ICT products available and relevant to education such as: Teleconferencing, email, audio conferencing, television tutorials, radio broadcasting, IVR, audio cassettes, CDs..etc. which are used in education for different purposes [Manichander, 2016, p109].

### 3.3. The importance of using ICT in higher education:

**ICT** is characterized by speed in processing data electronically and the possibility of communicating it to all users around the world at the right time to make decisions [Al-Faqih, 2017, p38], Due to these advantages, the university is no longer limited in its objectives to conduct research and qualify specialists in different fields only, but its objectives have multiplied to take care of continuous education and provide services to society through its use of modern technological means in the learning process, and the reasons for this are due to the following:

**A-Development of higher education:** Talking about the development of higher education has many dimensions, as it involves the desire to lay the foundations and bases for development and renewal, all because of the radical changes that have affected systems in various fields, as higher education has been linked to the daily concerns and needs of citizens and society, which requires a reconsideration of the functions of universities and how to provide outputs suitable for the labour market.

**B-Efficiency and effectiveness of the higher education system:** This effectiveness is measured by the ability of the systems used to integrate graduates into the world of work and this is due to the fact that the individual's achievement from education depends on the content of this education and the means of receiving it. The more appropriate the content of education and its means are for the learner's goals, the better the achievement, as it increases the effectiveness of education through new contents and modern technological methods that facilitate learning [Shabounia, 2012, p400].

**C- Economic globalization:** The breakdown of traditional barriers between markets and the generalization of some patterns of consumer behavior to all societies, despite the different cultures prevailing in these societies and the varying standards of living in them, according to researcher Francis Craincross believes that "the two biggest factors in the growth of the global economy are the information revolution and globalization, and in his opinion, the first factor generates the second, and produces the collapse of borders in front of foreign and international trade [Asim, 2013, p234] ".

**D-Development of work methods and techniques**: It calls for the need to increasingly resort to specialized skills and diverse expertise in order to operate these technologies and manage these methods, while he believes that the effects of using ICT in the higher education sector are as follows [Daif Allah, 2017, pp97-98]:

- **Expanding the scope of education:** ICT expands the boundaries of learning as it can occur anywhere there is an internet service, so that access to information or multimedia learning resources is readily available regardless of location, allowing the student to continue working and researching and encouraging them to acquire knowledge.

- **Dynamic:** The scientific content presented by these technologies is characterized by renewed dynamism, unlike static texts that are published on specific dates.

- **Promote the concept of distance learning:** There are many courses that are taught through e-learning, the main representative of these technologies in recent times, which is characterized by providing the appropriate time for study and flexibility in the content, and through which it is possible to obtain an appropriate evaluation of student performance, as the possibility of communication between the professor and the student exists whether this communication is synchronous or asynchronous, individually or collectively, which adds a new dimension to learning methods.

- **Taking into account individual differences:** the student can choose the content, time, learning resources, methods and evaluation methods that suit him.

- **Technological excellence: The ICT** sector is characterized by a high technological intensity directly translated at the market level through the rapid renewal of offerings supported by research and development processes.

- **Facilitating the transaction process:** ICT is the most applied and pervasive product, facilitating interpersonal interactions by helping to synthesise knowledge and providing teleconferencing for decision-making.

- **Predictability:** ICT allows predicting the acceptance of a new information system by future users and diagnosing the hiccups in the adoption of any system in the case of applying a model, as well as developing visualizations that are a means of measuring the rectification of the identified problems and improving the degree of acceptance of the technology in order to evaluate the use of the purposes of use.

### 3.4. Mechanisms to operationalize the use of ICT in education higher:

Modern information and communication technology has led to a significant change in the speed of production, use and distribution of knowledge [Tarawneh, 2014, p3984], so the adoption of ICT in university education is not easy, because the introduction of technology is a gradual process that requires patience and perseverance and the inclusion of the entire learning and teaching process, including human and other forces and their various locations, with its importance and the need to consider it as a real tool for the development of higher education [Manoubia, 2011], so To activate ICT use in higher education, some requirements must be met, including

- - Dissemination and popularisation of e-learning technologies in higher education institutions and trying to reduce the digital divide, as most educational institutions lack the necessary infrastructure (e-readiness) to provide technical e-learning services, which hinders their dissemination and benefit from them.
- - Establishing electronic portals and activating virtual classrooms, where electronic portals and smart technical rooms play a prominent role in linking the learner to scientific productions and various sources of knowledge, and the learning process becomes very influential in rooting the research concept of the educational process.
- - Activating the role of the private sector through the concept of community partnership for development and knowledge building, the private sector has been a pioneer in the good use of the information revolution and is still a
- pioneer in information and communication technology, from the invention of the personal computer to the emergence of the Internet, the private sector has had a leading role in the introduction and use of technology, and to benefit from its capabilities, its role must be activated through the concept of "community partnership for development [Al-Ghamdi, 2012, p388]".
- - The development of scientific research outputs requires an enabling political, social and economic environment in addition to the infrastructure related to technology. The legal framework that defines the field of this activity, its resources and processes must be in line with global trends in scientific research and technological development, especially at the level of the human resource, which is the pillar of this activity, so attention to its various requirements is the main step for any development or progress towards the best [Adhimi, 2019, p171].
- - Activating e-learning experiences in the university environment by knowing the concept of e-learning among those in charge of the university in question and then analysing this concept by comparing its compatibility with the correct concepts of e-learning and whether this concept takes into account the philosophy of e-learning and the educational strategies based on it, or is it just a concept limited to communication devices and systems only. Is this experience based on a clear vision and a well-thought-out plan developed by experts and consultants, or is it based on diligence and self-experiments that are

subject to right and wrong, and study the infrastructure to see the extent of its ability to contribute to achieving the objectives and implementing the plan, and determine its ability to develop and expand as required by the stages of the plan and the requirements of development in e-learning [Lamouchi, 2016].

- **The knowledge** shift to the system of electronic and digital transactions in management and research projects is one of the most important determinants of improving the quality of scientific publishing in order to increase the efficiency of the scientific and applied outputs of these projects in order to achieve competitiveness and upgrade the level of research projects as one of the pillars of academic evaluation [Al-Sawy, 2017, p84].

- - Work to provide research databases as additional university library services and a broad base of information in the academic department to benefit teachers and postgraduate students alike [Balbakay, 2016, p30].
- - Establishing a national observatory for the information society in the higher education sector would allow measuring access to ICT in this sector, identifying indicators related to information technology in the higher education sector, because access is one of the most important requirements for building an integrated society and realising the distance that separates Algeria from achieving the goal of providing it to every learner in the field of access to educational technology, knowing accessibility and where this technology is used in the educational process, and how it is used and applied in higher education institutions. The mere provision of infrastructure without its effective utilisation in the educational system and curriculum does not mean that Algeria's educational institutions are keeping pace with the change imposed by the transition to the information society [Alaoui, 2008, p18].
- - The need to enable students and researchers to master digital technology to prepare scientific research by organizing workshops and training courses to master the various aspects of these fields.
- - Promote digital cooperation between different universities and research centres, by exchanging databases and establishing cooperation links between researchers.
- - Tighten control and strictness in dealing with the manifestations and cases of scientific plagiarism, considering that it represents a serious threat to scientific research.
- - Working on developing software to combat scientific plagiarism, and exchanging expertise and experiences between universities and research centres [Lakhdari, 2016, p175].

## 5. Conclusion

In the end, we conclude that **communication** and **ICT** have an important place in the teaching-learning process, due to the methods, techniques and methods that are mainly aimed at improving the teaching process, a process that focuses on the learner in the first place, and makes him a participant in the construction of learning, under the guidance of the professor, and relying on a set of knowledge dedicated to this purpose and the latest technologies, and here is the importance of pedagogy, which does not proceed in isolation from the sciences of education and pedagogy, as they pave and facilitate the way for what is required by the teaching-learning process in general.

Therefore, this article sheds light on the importance of **communication pedagogy** in the development of higher education and the role of ICT in facilitating the teaching-learning process for both the professor and the university student.

At the end of this study, we reached the following main findings:

- ICT and communication pedagogy is one of the most important determinants of overall quality in higher education institutions, which the Ministry seeks to achieve.

- One of the most important obstacles that prevent the integration of communication and ICT pedagogy in higher education is the technical educational and learning obstacles, and this is manifested through the weakness of basic skills related to the use of technology and advanced software in the educational process from professors and students, where their use is limited to some computer skills such as: The use of **Microsoft Office applications** contributes to the lack of quality of the educational process and the ineffectiveness of online lessons.

- One of the most important obstacles facing higher education institutions is the weak ICT infrastructure.

- The lack of qualified human resources in the field of digitisation and the use of advanced technology in higher education institutions, whether as professors or students, which hinders the learning process and communication inside and outside the university between the two parties.

- Lack of training courses for faculty members and students in the field of communication pedagogy and ICT.

- The scarcity of objective research and studies that deal with measuring ICT penetration and the effectiveness of communication pedagogy in improving the quality of higher education according to the quantitative and qualitative indicators set by the UNESCO Institute for Statistics.

The process of teaching and learning at the higher education level requires deep awareness of its distinctive nature and the interconnected educational sciences that frame it—particularly pedagogy and didactics. The didactic of communication represents a central pedagogical necessity, serving as the interface between the theoretical and applied dimensions of education. Effective communication pedagogy enables educators to perform their roles efficiently by harmonizing curriculum objectives with diverse learning contexts. Furthermore, it underscores the significance of modern information and communication technologies (ICTs) as indispensable tools in promoting successful academic outcomes and facilitating dynamic exchanges within the learning environment. In light of global transformations and technological advancements, universities must redefine their educational missions, emphasizing interactive learning, student engagement, and competency-based teaching. Consequently, this study investigates the relationship between communication didactics and ICT use in fostering innovative pedagogical practices that enhance higher education quality and contribute to national and global educational reforms.

## Literature Background

Contemporary didactic theories emphasize that communication is not merely a tool but an integral component of the educational act. Scholars such as Cornu and Vergnioux (1992) and Loursi (2016) assert that didactics, as a scientific discipline, deals with analyzing and structuring knowledge transfer processes. It provides a systematic reflection on both the subject matter and the learner's cognitive, affective, and behavioral engagement. In this context, communication didactics operates as a dual system—combining the transmission of content with interactional dynamics between teacher and learner. Meanwhile, ICT-based pedagogy enhances this communication process by introducing digital interactivity, accessibility, and real-time feedback mechanisms. The fusion of didactic communication with ICT contributes to redefining the classroom as a hybrid environment where knowledge is co-constructed rather than passively received.

## Methodology

This study adopts a qualitative analytical approach supported by descriptive and interpretive methods. The analysis focuses on synthesizing conceptual frameworks and theoretical perspectives concerning communication didactics and ICT in higher education. Data were collected through a critical review of academic publications, policy documents, and pedagogical case studies from international contexts (e.g., UNESCO reports, OECD education frameworks, and regional studies from the Maghreb and Europe). The methodological steps included: identifying and categorizing relevant literature on didactic communication and ICT integration; analyzing the relationship between pedagogical communication models and technological facilitation; and synthesizing a conceptual model outlining how ICT can enhance communication-based didactics in higher education. The study did not involve empirical data collection from human participants but relied on comparative and theoretical discourse analysis.

## Ethical Considerations

The study adheres to academic integrity and ethical standards in educational research. All secondary sources have been properly acknowledged and cited following academic conventions. The research does not involve human or animal experimentation, data collection from participants, or any confidential institutional material. The author affirms that the work complies with international ethical principles governing non-experimental educational research.

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## Conflict of Interest

The author declares no conflict of interest regarding the publication of this paper. All views expressed are solely those of the author and do not necessarily represent the institutional position of the University of Relizane.

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