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**The Foreseeble Pedagogical Challenges Towards
Improving ICT Learning Tools
The Case of Ibn Khaldoun University Tiaret**

*Dissertation submitted in partial fulfillment for the requirements
of the master degree in didactics.*

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Dedication

To Allah, the Most Gracious, the Most Merciful

To my beloved parents

My adorable sister (Djihad)

To my soul mate who shared this work with me

To my second family in Turkey: Mesut, Hava, Koray and Kubra.

SOUMIA

Dedication

All praises and thanks to ALLAH

*I dedicate this dissertation to my beloved parents who
gave me unconditional love*

To my soulmate who shared this work with me

To my Lovely sisters Nour elhouda, Abla Fatiha and Mana.

FATMA

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ABSTRACT:

The present study seeks to investigate the influence of the pedagogical challenges on improving ICT learning tools in IBN KHALDOUN university, it basically focuses on the importance of ICT to enhance teaching and learning process , the main purpose of this research study is to examine the relationship between the pedagogical challenges and the development of ICT learning tools, in view of this work divided into two main parts. A theoretical part which includes the main ideas of the learning process and learning theory. We have also collected the types and the role interaction in online learning also, we discussed the term ICT and its importance in education.

The second chapter deals with the methodology adopted to conduct the research study with the analysis of the findings , the data were gathered through a series of questionnaires administered to a sample of (50) students (master 2 didactics and linguistics in ibn khaldoun university Tiaret .) The obtained results provided a glimpse on the foreseeable pedagogical challenges towards improving ICT learning tools. Consequently, students and teachers need to be provided by effective ICTs, and take advantage of appropriate tools in order to improve their teaching process.

Key words :

ICTs , Pedagogical Challenges, E-learning, blended learning.

<i>List of Abbreviations and acronyms</i>
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ICT	Information and Communication Technology
IT	Information Technologies
BL	Blended Learning
LSA	Latent Semantic Analysis
E –LEARNING	Electronic Learning
CD	Compact Disk
WWW	World Wide Web
TPACK	Technological Pedagogical Content Knowledge
PCK	Pedagogical Content Knowledge
DTs	Design Teams

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General Introduction:

The twenty-first century has witnessed a wide dissemination of technologies and modern techniques, and this has revolutionized every domain of our life, especially education. The use of information and communication technologies in education is a phenomenon that has drawn many researchers' focus and attention.

Even prior to the Covid-19 pandemic, many institutions of higher education were experiencing problems with low attendance to varying degrees in face-to-face learning sessions. From the onset of the pandemic, universities have been forced into radical, digital transformations and altered or replaced their existing instructional designs, The aim was to get students perceptions about the use of ICTs in their learning and investigate the expected pedagogical challenges for the development of ICTs at IBN KHALDOUN university . Multiple questions have been raised in order to define ICTs and their use in education. In our study, we focus on how IBN KHALDOUN university can improve ICT learning tools and the pedagogical challenges that it may face in the foreseeable future. Therefore, the present study generates the following questions:

- Does IBN KHALDOUN university use ICTs tools/ platforms ?
- Did university's moodle platform contribute to developing students' and knowledge skills during the covid -19 period ?
- What is the most significant pedagogical challenge that the university will have to take in order to improve the ICT learning tools?

These questions may lead to the formulation of the following hypothesis :

- IBN KHALDOUN university may use IT tools/platforms
- contribute to developing students' and knowledge skills during the covid -19 period ?

- Developing ICT skills and training for teachers and students are the main pedagogical challenges that the university will have to take in order to improve ICT learning tools.

In an attempt to answer these questions, our study is divided into three chapters that will enlighten the reader about the current investigation. The first chapter, being the literature review of this research, explains the learning process and ICT which include its importance and its use in education, then traditional current and blended ICTs.

The second chapter contains theoretical explanation of the data collection tools such as questionnaires and is also concerned with the data analysis and interpretation, the third and final chapter dedicated to the pedagogical challenges , suggestions and recommendations.

Chapter one
Literature review

Introduction :

Various cognitive fields have witnessed a quick evolution since the introduction of ICTs. Medicine, economics and most industries have adopted these tools in order to keep pace with the current requirements in terms of accuracy, quality and adaptability. The academic sector is also concerned by this evolution and even should be the spearhead of such changes in our modern societies.

This chapter represents the theoretical framework that paves the way for this research. This dissertation focuses on the foreseeable pedagogical challenges towards improving ICT learning tools, it is divided into two parts; In the first part, we discuss the main notions of the learning process and the learning theory, we've also collected the types and the role of interaction in online learning, then an overview on online learning and its attributes.

In the second part of this chapter, we first defined the acronym ICT and its use in education. Following the importance of ICTs, this chapter ends with a comparative study between traditional, current and blended ICTs used in learning .

Part1 :

I- The Learning process :

Often, learning processes can be represented as a sequence of conceptions developed by students during their instruction. These conceptions do not exclude each other; a student can have more than one conception in parallel at the same time (Petri & Niedderer 1998, 2003; Taber 2000; Hartmann & Niedderer 2005). Here conception is taken in the larger sense given previously and is specified in each study. For example, some authors (Petri & Niedderer 1998; Psi11os & Kariotoglou 1999) use the term "conception" or "concept of a student" to describe a learning process as a series of conceptual changes (Dykstra 1992). Taber (2001) in his case study of conceptual development as competition between alternative conceptions about bonding uses "evolving explanatory principles" as one form of conception to describe a learning process of one student in two years of an A level course in chemistry. In their study on mental models of electric circuits, Clement & Steinberg (2002) use a series of successive modified models to describe their students' learning process all along a teaching unit.

2-Learning theories:

The learning theories aim at describing how students receive, process, and retain knowledge during learning. Cognitive, emotional, and environmental influences, as well as prior experience, all play a part in how understanding, or a world view, is acquired or changed and knowledge and skills retained

Behaviourists usually think of learning as a sort of conditioning and plea for a reward and target driven system of education, while educators who advocate the cognitive approach believe learning can

not be narrowed solely to a change in behaviour, in particular when human memory is taken into consideration. Those who advocate constructivism believe that a learner's ability to learn relies largely on what they already know and understand, and the acquisition of knowledge should be an individually tailored process of construction. Transformative learning theory focuses on the often-necessary change required in a learner's preconceptions and world view. Geographical learning theory focuses on the ways that contexts and environments shape the learning process.

3-Types of Interaction in the Learning Process:

Interactions are reciprocal events that require at least two objects and two actions (Wagner, 1994). In the educational framework, the main types of educational interaction are teacher-student, student-student, student-content, and student-interface interactions (Moore, 1989; Hillman, Willis, & Gunawardena, 1994).

3.1 Student-student Interaction:

Traditionally, student-student interaction has been downplayed as a requirement of distance education as a result of constraints on the availability of technology and an earlier bias among distance education theorists toward individualized learning (Holmberg, 1989). Modern constructivist theorists stress the value of peer-to-peer interaction in investigating and developing multiple perspectives. Work on collaborative learning illustrates potential gains in cognitive learning tasks, as well as increases in completion rates and the acquisition of critical social skills in education (Slavin, 1995). Work by Damon (1984) and others related to peer tutoring illustrates the benefits to both the tutor and the tutee that can result from a variety of "reciprocal" teaching forms. Finally, peer interaction is critical to the development of communities of learning (Wenger, McDermott, &

Snyder, 2002) that allow learners to develop interpersonal skills, and to investigate tacit knowledge shared by community members as well as a formal curriculum of studies.

3.2 Student-teacher Interaction:

Student-teacher interaction is supported in online learning with a large number of varieties and formats that include asynchronous and synchronous communication using text, audio, and video. The ease of such types of communication leads many new teachers to be overwhelmed by the quantity of students' performances and requests, and by the rise in student expectations for immediate responses.

3.3 Student-content Interaction:

Student-content interaction has always been a major component of formal education, even in the form of library study or the reading of textbooks in face-to-face instruction. The Web supports these more passive forms of student-content interaction, and also provides a host of new opportunities, including immersion in microenvironments, exercises in virtual labs, online computer assisted tutorials, and the development of interactive content that responds to student behavior and attributes (often referred to as "student models"). Eklund (1995) lists some potential advantages of such approaches, noting that they allow instructors to:

- Provide an online or intelligent help facility, if a user is modeled and their path is traced through the information space;
- Use an adaptive interface based on several stereotypical user classes to modify the environment to suit individual users;
- Provide adaptive advice, and model the learner's use of the environment (including navigational use, answers to questions,

and help requested) to make intelligent suggestions about a preferred individualized path through the knowledge base.

To these advantages must be added the capacity for immediate feedback, not only for formal learning guidance, but also for just-in-time learning assistance through job aids and other performance support tools.

3.4 Teacher-teacher Interaction:

Teacher-teacher interaction creates the opportunity for professional development and support that sustains teachers through communities of like-minded colleagues. These interactions also encourage teachers to take advantage of knowledge growth and discovery in their own subject and within the scholarly community of teachers.

3.5 Teacher-Content Interaction:

Teacher-content interaction is often illustrated by the teachers' creation of contents and learning activities. It continuously allows teachers to monitor and update the content resources and activities that they create for students' learning.

3.6 Content-Content Interaction:

Content-content interaction is a newly developing mode of educational interaction in which content is programmed to interact with other automated information sources, so as to refresh itself constantly, and to acquire new capabilities. For example, a weather tutorial might take its data from current meteorological servers creating a learning context that is up-to-date and relevant to the learner's context. Content-content interaction is also necessary to

provide a means of asserting control of rights and facilitating tracking of the use of content by diverse groups of learners and teachers.

4-The Role of Interaction in Online Learning:

Interaction (or interactivity) serves a variety of functions in the educational transaction. Sims (1999) has listed these functions as allowing for learner control, facilitating program adaptation based on learner input, allowing various forms of participation and communication, and acting as an aid to meaningful learning. In addition, interactivity is fundamental to the creation of the learning communities espoused by Lipman (1991), Wenger (2001), and other influential educational theorists who focused on the critical role of community in learning. Finally, the value of another person's perspective, usually gained through interaction, is a key learning component in constructivist learning theories (Jonassen, 1991), and in inducing mindfulness in learners (Langer, 1989).

Interaction has always been valued in distance education, even in its most traditional, independent study format. Holmberg (1989) argued for the superiority of individualized interaction between student and tutor when supported by written postal correspondence or by real-time telephone tutoring. Holmberg also introduced us to the idea of simulated interaction that defines the appropriate writing style for independent study models of distance education, programming that he referred to as "guided didactic interaction." Garrison and Shale (1990) defined all forms of education (including that delivered at a distance) as essential interactions between content, students, and teachers. Laurillard (1997) constructed a conversational model of learning in which Interaction between students and teachers plays a critical role.

As long ago as 1916, John Dewey referred to interaction as the defining component of the educational process that occurs when the student transforms the inert information passed to them from another, and constructs it into knowledge with personal application and value (Dewey, 1916). Bates (1991) argued that interactivity should be the primary criterion for selecting media for educational delivery. Thus, there is a long history of study and recognition of the critical role of interaction in supporting, and even defining, education.

6- Overview on Online Learning:

Online learning can be the most difficult of all three to define. Some prefer to distinguish the variance by describing online learning as “wholly” online learning (Oblinger & Oblinger, 2005), whereas others simply reference the technology medium or context with which it is used (Lowenthal, Wilson, & Parrish, 2009). Others display direct relationships between previously described modes and online learning by stating that one uses the technology used in the other (Rekkedal et al., 2003; Volery & Lord, 2000). Online learning is described by most authors as access to learning experiences via the use of some technology (Benson, 2002; Carliner, 2004; Conrad, 2002). Both Benson (2002) and Conrad (2002) identify online learning as a more recent version of distance learning which improves access to educational opportunities for learners described as both nontraditional and disenfranchised. Other authors discuss not only the accessibility of online learning but also its connectivity, “exibility and ability to promote varied interactions (Ally, 2004; Hiltz & Turoff, 2005; Oblinger & Oblinger, 2005). Hiltz and Turoff (2005) in particular, not only elude to online learnings' relationship with distance learning and traditional delivery systems but then, like Benson (2002) makes a clear statement that online learning is a

newer version or, an improved version of distance learning. These authors, like many, believe that there is a relationship between distance education or learning and online learning but appear unsure in their own descriptive narratives..

7- Attributes of Online Learning:

The evolution of learning theories shows that this sector has witnessed a shift since the popularization of new ICT tools. It also demonstrates that the use of these modern tools change the perspective one might have on the learning process and the theories previously mentioned. Through research and discovery, it is possible to state that online learning is:

7.1 Learner centered :

Online learning might present challenges to educators, because the tools and opportunities for discovering students' preconceptions and cultural perspectives are often limited by bandwidth constraints that limit the view of body language and paralinguistic clues. Some researchers have argued that these restrictions affect negatively the efficacy of communication (Short, Williams, & Christie, 1976). Others have argued that the unique characteristics that define online learning (most commonly asynchronous text based interaction) can actually lead to enhanced or hyper communications (Walther, 1996). We have found evidence of significant social presence in computer conferencing contexts (Rourke, Anderson, Archer, & Garrison, 2002; Rourke & Anderson, 2002). Nonetheless, it is fair to say that the challenges of assessing student preconditions and cultural prerequisites are often more difficult in an online learning context, because teachers are less able to interact transparently with students—especially in the critical early stages of the formation of a learning community. It is for this reason that experienced online

learning teachers make time at the commencement of their learning interactions to provide incentive and opportunity for students to share their understandings, their culture, and unique aspects of themselves. This sharing can be done formally, through electronically administered surveys and questionnaires, but is often accomplished more effectively by virtual icebreakers, and by the provision of an opportunity for students to introduce themselves and to express any issues or concerns to the teacher and the class. The online learning environment is also a unique cultural context in itself. Benedikt (1992) has argued that cyberspace “has a geography, a physics, a nature and a rule of human law” . Many students will be new to this context, but increasingly, students will come to online learning with preconceptions gathered from both formal and informal experience in virtual environments. They will exercise their mastery of communication norms and tools, some of which will not be appropriate to an educational online context. Researchers have attempted to quantify this proficiency and comfort with online environments through the use of survey instruments that measure a learner’s internet efficacy (Eastin & LaRose, 2000). They have argued that it is not Internet skill alone that determines competency; rather, a strong sense of Internet efficacy allows users to adapt effectively to the requirements of working in this environment. Thus, the effective online learning teacher is constantly probing for learner comfort and competence with the intervening technology, and providing safe environments for them to increase their sense of Internet efficacy. Learner-centered online-learning contexts thus are sensitive to the cultural overlay acquired in offline contexts, and the ways in which it interacts with the Web’s affordances.

7.2 Knowledge centered:

Effective learning does not happen in a content vacuum. McPeck (1990) and other theorists of critical thinking have argued that teaching generalized thinking skills and techniques is useless outside of a particular knowledge domain in which they can be grounded. Similarly, Bransford et al. argue that effective learning is both defined and bounded by the epistemology, language, and context of disciplinary thought. Each discipline or field of study contains a world view that provides often unique ways of understanding and talking about knowledge. Students need opportunities to experience this discourse, as well as the knowledge structures that undergraduate teaching affords. They also need opportunities to reflect upon their own thinking: automacy is a useful and necessary skill for expert thinking, but without reflective capacity, it greatly limits one's ability to transfer knowledge to an unfamiliar context or to develop new knowledge structures. In comparison to campus-based learning, online learning has neither advantages or disadvantages knowledge-centered learning. As we discuss below, the Net provides expanded opportunities for students to plunge ever deeper into knowledge resources, thus affording a near limitless means for students to grow their knowledge, to find their own way around the knowledge of the discipline, and to benefit from its expression in thousands of formats and contexts. However, this provision of resources can be overwhelming, and the skillful e-teacher needs to provide the "big picture" that illustrates the course and its features, its access system, its completion and assessment systems, scaffolding on which students can grow their own knowledge and discipline-centered discoveries.

7.3 Assessment centered:

Quality online learning provides many opportunities for assessment: not only opportunities that involve the teacher, but also ones that exploit the influence and expertise of peers, others that use simple and complex machine algorithms to assess student production, and, perhaps most importantly, those that encourage learners to assess their own learning reflectively. Understanding what is most usefully rather than what is most easily assessed is a challenge for the designers of online learning. Developments in cognitive learning theories and their application to assessment design are helping us to devise assessments that are aligned with the subject content, and that assess cognitive processes as well as end results. For example, Baxter, Elder, and Glaser (1996) found that competent students should be able to provide coherent explanations, generate plans for problem solving, implement solution strategies, and monitor and adjust their activities.

Can we do any better in online learning? The diminution of opportunities for immediate interaction between learners and teachers, especially in the Covid-19 period, might reduce opportunities for process assessment; however, the enhanced communications capacity of online learning and the focus of most adult online learning in the real world of work provide opportunities to create assessment activities that are project and workplace based, that are constructed collaboratively, that benefit from peer review, and that are infused with both the opportunity and the requirement for self-assessment. A danger of assessment-centered learning systems is the potential increase in the workload demanded of busy online learning teachers.

Strategies that are designed to provide formative and summative assessment with minimal direct impact on teacher workload are

urgently needed. There is a growing list of tools that provide such assessment without increased teacher participation, including :

- The use of online computer-marked assessments that extend beyond quizzes to simulation exercises, virtual labs, and other automated assessments of active student learning collaborative learning environments that students create to document and assess their own learning in virtual groups;
- Mechanisms, such as online automated tutors, that support and scaffold students' evaluation of their own work and that of their peers;
- Student agents who facilitate and monitor peer activities to allow students to assess and aid each other informally;
- The use of sophisticated software tools, such as latent semantic analysis (LSA) or neural networks, to machine-score even complicated materials, such as students' essays. Thus, the challenge of online learning is to provide high quantity and quality of assessment while maintaining student interest and commitment. These goals are often best achieved through the development of a learning community, to which we turn next.

7.4 Community Centered :

Although there are many online learning researchers who celebrate the capacity to create learning communities at a distance (Harasim, Hiltz, Teles, & Turoff, 1995), there are also those who note problems associated with lack of attention and participation (Mason & Hart, 1997), economic restraints (Annand, 1999), and an in-built resistance among many faculty and institutions to the threatening competition from virtual learning environments (Jaffee, 1998). Ethnographic studies of the Net (Hine, 2000) illustrate how the lack of "placedness" and the complications of anonymity attenuate different components

of a given community when it is located in virtual space. In short, it may be more challenging than we think to create and sustain these communities, and the differences—linked to a lack of “placedness” and synchronicity, that is, mutual presence in time and place—may be more fundamental than the mere absence of body language and social presence. I have been struck by the wide variation in the expectations of learners about participation in a community of learners. Traditionally, distance education has attracted students who value the freedom from constraints of time and place that is provided by independent modes of distance education. Contrary to popular belief, the major motivation for enrollment in distance education is not physical access, but rather, temporal freedom to move through a course of studies at a pace of the student’s choice. Participation in a community of learners almost inevitably places constraints on this independence, even when the pressure of synchronous connection is eliminated by use of asynchronous communications tools. The demands of a learning-centered context might at times force us to modify the prescriptive participation in communities of learning, even though we might have evidence that such participation will further advance knowledge creation and attention. The flexibility of virtual communities allows more universal participation, but a single environment that responds to all students does not exist; thus, the need for variations that accommodate the diverse needs of learners and teachers at different stages of their life cycles.

These potential barriers argue for a theory of online learning that accommodates, but does not prescribe, any particular boundaries of time and place, and that allows for appropriate substitution of independent and community-centered learning. To this requirement, we add the need for a theory of e-learning that is learning centered,

provides a wide variety of authentic assessment, and is grounded in existing knowledge contexts.

II- Overview on ICTs

1- Definition of ICT:

Before we discuss the importance of ICTs in our era, it is paramount we define them first. ICT is an acronym that stands for Information and Communication Technology/Technologies that includes different communicating tools, devices, and applications such as computers, social networking (as facebook, twitter, messenger, youtube and the like), cell phones, television, radio and many other services and devices which enable people to communicate in real time with others as if they were living next door.

ICTs are also technological tools and resources used for communication, and creation, dissemination, store, and management of information. Computers, the Internet, telephony, and broadcasting technologies (radio and television) are considered as different technological tools. **(Statistics Canada, 2008)**. Education also relies on ICTs to support teaching, learning and a range of exercises in education.

On the other hand, ICTs are considered as effective tools for teachers. Through students' participation, mainly asking questions, giving opinions, teacher can make modifications and amendments for their instruction by regulating their teaching styles and strategies – determining what is appropriate and suitable for students **(Rashmi Ranjan Mohanty, 2001)**

2- The use of ICTs in Education:

In the 21st century, the term “technology” is an important issue in many fields including education. This has become the knowledge transfer highway in most countries. Technology integration nowadays because technology has gone through innovations and transformed

our societies that have totally changed the way people think, work and live (Grabe, 2007). As part of this, schools and other educational institutions which are supposed to prepare students to live in “a knowledge society” need to consider ICT integration in their curriculum (Ghavifekr, Afshari & Amla Salleh, 2012).

Integration of Information, Communication, and Technology (ICT) in education refers to the use of computer-based communication that is incorporated into the daily classroom instructional process. In conjunction with preparing students for the current digital era, teachers are seen as the key players in using ICT in their daily classrooms. This is due to the capability of ICT in providing dynamic and proactive teaching-learning environments (Arnseth & Hatlevik, 2012). While the aim of ICT integration is to improve and increase the quality, accessibility and cost-efficiency of the delivery of instruction to students, it also refers to benefits from networking the learning communities to face the challenges of current globalization (Albirini, 2006, p.6). Process of adoption of ICT is not a single step, but it is an ongoing and continuous pathway that fully supports teaching and learning and information resources (Young, 2003).

ICT integration in education generally means technology-based teaching and learning process that closely relates to the utilization of learning technologies in schools. Due to the fact that students are familiar with technology and they will learn better within a technology-based environment, the issue of ICT integration in schools, specifically in the classroom is vital. This is because the use of technology in education contributes a lot in the pedagogical aspects in which the application of ICT will lead to effective learning with the help and support from ICT elements and components (Jamieson-Procter et al., 2013). It is right to say that almost all ranges

of subjects' starts from mathematics, science, languages, arts and human sciences and other major fields can be learned more effectively through technology-based tools and equipment. In addition, ICT provides the help and complementary support for both teachers and students where it involves effective learning with the help of the computers to serve the purpose of learning aids (Jorge et al., 2003). Computers and technology do not act as a replacing tools for quality teachers but instead they are considered as an add-on supplement needed for a better teaching and learning experience. The need for ICT integration in education is crucial, because with the help of technology, teaching and learning is not only happening in the school environment, but also can happen even if teachers and students are physically distant. However, ICT integration is not a one-step learning process, but it is a continual process of learning that provides a proactive teaching-learning environment (Young, 2003). ICT can be used in various ways where it helps both teachers and students to learn about their respective subject areas. A technology-based teaching and learning offers various interesting ways which includes educational videos, stimulation, storage of data, the usage of databases, mind-mapping, guided discovery, brainstorming, music, World Wide Web (www) that will make the learning process more fulfilling and meaningful (Finger & Trinidad, 2002). On the other hand, students will benefit from ICT integration where they are not bound to the limited curriculum and resources, instead hands-on activities in a technology-based course is designed to help them to stimulate their understanding about the subject. It also helps teachers to design their lesson plans in an effective, creative and interesting approach that would result in students' active learning. Previous research proved that use of ICT in teaching will enhance the learning process and maximizes the students' abilities in active

learning (Finger & Trinidad, 2002; Jorge et al., 2003; Young, 2003; Jamieson-Procter et al., 2013).

Hermans, Tondeur, Van-Braak, and Valcke (2008) have identified three main stages for ICT to be highly valued and regarded by the teachers; integration, enhancement and complementary. Integration approach is about implementing the right use of ICT in a particular subject area that involves complex concepts and skills to improve student's achievement and attainment. Besides, the review of curriculum is also needed so that only related ICT resources and appropriate software will be installed for the main aims and objectives of the curriculum to be achieved. Enhancement approach is about using ICT to give great emphasis on the topic introduced. For instance, Microsoft PowerPoint can be used to present the topic in a very innovative and creative way that will lead into discussion and exchanging ideas and thoughts. Finally, a complementary approach is when the ICT is used to aid and support the student's learning. This approach allows students to be more organized and efficient in which they can obtain the notes from the computer, submit their assignments by email from home as long as they meet the deadline and look for information from various sources provided online to fulfil the task given to them (Hermans et al., 2008) .

Technology-based teaching and learning can make many changes in school that are required for proper planning and policy making. Researchers and policymakers must both have the same insight about the future plan. Dudeney (2010) noted that national ICT policies can serve several crucial functions. They provide a rationale, a set of goals, and a vision of how education systems run if ICT is integrated into teaching and learning process, and they are beneficial to students, teachers, parents and the general population of a given country. The Malaysian ministry of education has formulated three main policies for ICT in education. The first policy insists that all

students are given the opportunity to use ICT. This is aimed to reduce the digital gap amongst the schools. The second policy focuses on the role and function played by ICT in education. Besides that, another policy stressed on the use of ICT for accessing information, communication and as a productivity tool (**Chan, 2002**).

However, infrastructure and facility of ICT is then needed to supply to the schools throughout the nation. A key factor in the use of ICT is sufficient computer labs and ICT equipment. This is to ensure that subject teachers have easy access to ICT tools whenever needed (Hennessy, Ruthven, & Brindley, 2005). Lack of adequate ICT equipment and internet access is one of the key problems that schools specifically in rural areas are facing now. For example, results of a research show that in Kenya, some schools have computers but this could be limited to one computer in the office only. Even in schools with computers, the student-computer ratio is high. In addition, the report continues to reveal that the schools with ICT infrastructure are supported by parents' initiative or community power (Chapelle, 2011).

In most schools, technical difficulties sought to become a major problem and a source of frustration for students and teachers and cause interruptions in teaching and learning process. If there is lack of technical assistance and no repair on it, teachers are not able to use the computer temporarily (Jamieson-Proctor et al., 2013). The effect is that teachers will be discouraged from using computers because of fear of equipment failure since they are not given any assistance on the issue. Türel and Johnson's study (2012) revealed that technical problems become a major barrier for teachers. These problems include low connectivity, virus attack and printer not functioning. However, there are a few exceptions. Schools in countries like the Netherlands, United Kingdom, and Malta have

recognized the importance of technical support to assist teachers to use ICT in the classroom **(Yang & Wang, 2012)**.

In addition, teachers' readiness and skills in using ICT are playing an essential role in the use of ICT in education. Teachers need sufficient ICT skills to implement the technology and to have a high confidence level to use it in a classroom setting. Besides, teachers require insight into the pedagogical role of ICT, in order to use it meaningfully in their instructional process (Hennessy et al., 2005). According to Winzenried, Dalgarno and Tinkler (2010) teachers who have gone through ICT courses are more effective in teaching by using technology tools as opposed to those that have no experience in such training. A school in Ireland reported that teachers who did not develop sufficient confidence avoided using ICT. Similar case happened in Canada, some teachers admitted they were reluctant ICT users because they worried they might get embarrassed that the students knew more about the technology than they did (Hennessy et al., 2005).

Beyond basic skill training, schools had used a variety of strategies to provide further professional development for teachers. According to Warwick and Kershner (2008) the significance and advantages of ICT should be known by teachers in order to conduct a meaningful lesson with the use of ICT. Indeed, teachers should be sent to attend training courses to learn about integration ICT in teaching and learning process. Nonetheless, many school schools used peer-tutoring systems. A more skillful teacher in ICT would assist and guide another teacher who has less experience with ICT along the preparation work for teaching and learning process. As what has been discussed, there are many factors to enable the use of ICT in classroom teaching and learning. Begin with policy, followed by the supplement of all the ICT hardware and software facilities, continued by readiness and skills of teachers to integrate it into the pedagogical

process (Agbatogun, 2012). Besides, technical support and continuous professional development in ICT should be conducted from time to time. In short, all parties must cooperate in order to bring a given nation to become *a country advanced in technology*.

The importance of ICTs:

With the ongoing speed of this era and its inventions, it's a necessity to cope now and to have at least what is called nowadays digital literacy, real opportunities can be offered by new ICTs to enhance the quality of community life. To develop ICTs; it is also important to use these technological tools and to deepen our level of reflection on community dynamics and on the constraints encountered. A healthy information society is related to getting reliable and timely information to its members. Making people care about the advantages from the use of ICTs will help to make the society a healthy one. (Esoswo Francisca Ogbomo, 2008).

In various fields and frameworks, the use of ICTs like audio and video devices has become a requirement in order to:

- Allow us to research and share useful Information – e.g using the Internet;
- Give us access to information on jobs/internships. And create new employment opportunities (via ICTs/with icts);
- Enhance interaction with peers over long distances;
- Create entertainment opportunities (games, music,video);
- Provide more realistic information on life elsewhere;
- Provide health information, including on sensitive issues
- Provide educational information (long distance learning.

In several ways , the previous mentioned ICTs and others can enhance the

quality of life in general and education specially, which occurs by increasing the motivation in learners and their engagement making it easy to acquire the basic skills, and by enhancing teachers' training. When these ICTs are used appropriately, it can encourage the shift to a learner-centered environment.

In these two areas of teaching and learning, The ICTs have the potential not only in ensuring effectiveness and efficiency; but also in erasing the administrative duties. (The Organization for Economic Co-operation and Development (2005)and Gbenga (2006).

Currently, there are different technological tools of ICT For example,television, videos, and multimedia computer software that join text, sound, and colorful, moving images that can be used to enhance challenging and authentic content that will engage the learners in the learning process. The teachers use Interactive radio which makes them become involved in the lesson which is delivered by the teacher. Any type of Information and communication technology more so than any other type of ICT can enhance learner motivation as it joins the media richness and interactivity of other ICTs offering the opportunity to connect with real people and to participate in real world events.

As an Example, people generally and students specially can find out information and gain new knowledge by using ICTs, They may find information on the Internet based encyclopedia such as Microsoft Encarta .The teacher can extract information and prepare documents to make them available to them via ICT, such as documents created using Microsoft Word or a Microsoft PowerPoint slideshow.

In addition, students can use ICT as part of a creative process where they have to consider more carefully the information which they have about a given subject. They may need to carry out calculations (eg. by using Microsoft Excel), or to check grammar and spelling in a piece of writing (perhaps using Microsoft Word), or they may need to

re-sequence a series of events (for example by re-ordering a series of Microsoft PowerPoint slides).

Thus, “To share knowledge, Students can present their work in a highly professional format by using ICT. Documents and slideshows can be created to demonstrate what they have learned, and then share this with other students, with their teacher, and even via email with people all around the world. . **(Rashmi Ranjan Mohanty,2011)**

4-Traditional, Current and Blended ICTs:

Numerous comparative studies of traditional and online education have concluded that online learning can be as successful and effective as traditional learning. Certain learning and communication theories suggest that a third alternative – blended learning, a combination of distance and face-to-face learning – has the potential to produce even better results than either alone. The advantage of blending is that it may combine the strengths of face-to-face (more intimate interactions, potential for immediate feedback) and online learning (asynchronous setting, technology, and interactive features). Blended learning, however, is not a single recipe (Garrison & Cleveland-Innes, 2004). There are many ways of combining online and face-to-face learning, falling anywhere along a spectrum between entirely face-to-face and entirely online education. The optimum balance can vary depending on the subject matter and the learning situation. Although many case studies and guidelines have been published about blended learning, there are only a limited number of studies that compare blended instruction with both traditional and online learning. Most of these comparative studies examine only one course and focus on the relationships between no more than a couple of variables. In order to gain a better understanding of what makes a successful blended learning and what are the optimal blends of the synchronous and asynchronous

learning events that support learning in various disciplines, large scale studies of courses of different subject matter are needed. So traditional ICTs were used from the beginning. The classroom was equipped with a traditional blackboard and a cassette/CD player printed with teaching materials accompanied by audio-CDs and a paper dictionary.

In the last decade,, the appearance of smart devices such as smartphones, tablets and other mobile devices and the revolution in social network like Facebook, video, LinkedIn, Twitter became very powerful means to facilitate education and training by promoting easy sharing effective and flexible learning, they allow learners who have not had chance to enroll in one of the best universities to enjoy the same course content to learn and improve their knowledge. Because in the Algerian university education system, we notice a weakness in terms of educational content of ICT platforms.

Learners and teachers benefit from using social network like Facebook for sharing and collaborative work, other learners use DropBox tools for sharing documents, courses, practical workshops and articles, others use the services offered by Google, such as Google Drive for sharing of all types of documents and files as well as Gmail for messaging and asynchronous communication teacher-student accounts, several other categories of learners prefer the use of YouTube and enjoy videos which offer a better educational content.

For videoconferencing synchronous communication and sharing presentations, learners, use "Skype ", this tool is also used in the case of lessons, lectures, oral presentations or remote selection interviews, also many students are already familiar with web page designing and there are several software programs available for web page creation, student can create individual web pages to introduce

themselves to their partners. Web pages can also operate as autobiographical essays and help students learn more about self-presentation.

A more recent tool that is similar to the web page is the social network site called “My space “ because of its vast popularity (over 78 million registered accounts) Blogs are spaces on the web where you can write and publish (post) about a topic or several topics, when designing activities it can be useful to return to the tried and true communicative approach tasks that have work well in the classroom and finding ways to adapt them for instance ,audioblogs can be used much the same way as the “telephone “game where each student whispers a sentence to the next one until it works its way down the row.

Discussion boards (forums) ,like blogs ,online discussion boards or forums can promote discussion and reflection between distanced students who do not meet face to face. There is also voice chat like text chats. Voice chat allows real time interaction between the students voice over the internet protocol allows the student to speak to others by using a microphone connected with the computer this tool becomes more popular.

4- Why Blended Learning?

Blended learning (BL) systems combine face-to-face instruction with computer mediated instruction. The definition reflects the idea that BL is the combination of instruction from two historically separate models of teaching and learning: traditional face-to-face learning systems and distributed learning systems. It also emphasizes the central role of computer based technologies in blended learning.

There are many reasons that an instructor, trainer, or learner might pick blended learning over other learning options. Osguthorpe and

Graham identified six reasons that one might choose to design or use a blended learning system: pedagogical richness, access to knowledge, social interaction, personal agency, cost-effectiveness, and ease of revision.

Blended learning has become increasingly important and is closely related to distance learning and E-Learning. In spite of the many attractive advantages of accessibility, flexibility, and cost savings of E-Learning, direct human contact, especially the physical face-to-face interaction is missed in the learning process. Putting learning materials online doesn't make learning happen automatically. It is a big challenge to create good E-Learning courses, and develop relevant learning skills and culture, and many people and organizations returned to the face-to-face mode after experiencing frustrations with E-Learning.

If the one-place-same-time traditional face-to-face classroom teaching fits at one end of the spectrum of the learning delivery mode, then pure E-Learning fits on the other end.

Figure 2 reflects the spectrum of delivery modes in terms of time and space, and illustrates the relationship among distance learning, E-Learning and blended learning.

One place, same time	Multiple place, same time and different time	Anywhere anytime
Face to face Classroom teaching	Distance learning Blended learning	Pure E-learning

Figure01: Spectrum of delivery modes

The results of some studies suggest that there are trade-offs in the processes when you compare blended and traditional learning. The authors believe that traditional classrooms will continue to offer benefits that arguably cannot fully be obtained in any other manner, but that any gaps in process effectiveness will continue to be narrowed as technology becomes friendlier for both instructor and student.

Conclusion:

Since information and communication technologies are effective tools in education nowadays, it is clear that a major shift occurred since the introduction of ICTs in teaching and learning.

On the other hand, it is important to remember that the learning process and the pedagogical performances are progressively conditioned by modern technology. Therefore, the types of interactions vary from the use of one tool to another. The Covid-19 period has demonstrated these variations and their effects on teachers' and students' performances. From another perspective, there should be a study gathering the available options for the use of ICTs in teaching prior to establishing a radical shift from traditional to other types of learning.

The following chapter covers an overview about the theoretical basis of ICT in education and learning process.

Chapter two: Data analysis

Introduction :

The present research study is concerned with the foreseeable pedagogical challenges towards improving ICT learning tools, this chapter introduces the methodological part and illustrates the steps of the research methodology and design followed to achieve the objectives of the study. This chapter indicates the setting where the study was undertaken and describes the profile of the participants who took part in the research study. In the second section, the research instrument used to gather data is indicated, then the data collection process concerning students' questionnaires is explained in detail . Finally, the data analysis is described to indicate the results of the study .

1. Research setting:

The informants of the current study are a sample of master two students (didactics and linguistics) in the department of English at the university IBN KHALDOUN of Tiaret. The variable of this study included (50) students, thirty eight (38) female and twelve (12) male. Their perceptions and opinions are essential to confirm whether the suggested hypotheses are valid or non valid. The participants were randomly chosen.

2. Research Instrument:

In order to collect data, we employed different procedures: observation, interview and questionnaires. However, in the current study, the primary research tool that was used to gather data from the participants was a questionnaire which was delivered to students in order to fulfill the overall aims of this study.

3. Students questionnaire:

This section is concerned with indicating the aim behind addressing these questionnaires. Furthermore, the target participants who took part in the research study were described. Then, it was followed by a detailed description of the students' questionnaire. The questionnaire designed for this study consists of two sections

- Personal information: A series of questions to gather information about students' Gender and Age.
- The other questions are all arranged in a manner that helps answering our research questions

The Questionnaire consists of twelve 12 questions, and is addressed to Master II students at IBN KHALDOUN university .

3.1 Aim of the Questionnaire:

The students questionnaire is designed for Master two students, the aim of the questionnaire was to collect students' perceptions about the use of ICTs in their learning, and investigate the expected pedagogical challenges for the development of ICTs at IBN KHALDOUN university.

4. Data Analysis:

The questionnaire is addressed to (50)master two students (didactics and linguistics) the objective is to know their opinions concerning the methods of improving ICTs at IBN KHALDOUN university and the challenges that it may face. This questionnaire includes twelve (12) questions analysed and represented in tables to simplify the explanation of the obtained results.

Question 01 :

The participants were asked to precise their gender , from the table above we notice that thirty eight (76%) are female and the rest twelve (24%) are male .

Gender	Male	Female	Total
Number	12	38	50
%	24%	76%	100%

Table 2.1 Gender Distribution

Question02 :

The age findings shows age category from 23-25 is frequency 32 and percentage is 64% , age 26-30 is frequency 18 and percentage 36%

Factors	Category	Frequency	Percentage%
Age	23-25	32	64%
	26-30	18	36%

Table2.2 Age distribution

Question 03:

Does IBN KHALDOUN university use IT tools/ platforms?

By this question , we want to know if IBN KHALDOUN University use it tools platforms

The majority of them i.e 54% of the learners (27) said that IBN KHALDOUN university uses ICT tools while (23) learners said no 46%.

IBN KHALDOUN use IT tools/ platform	Yes	No	Total
N	27	23	50
%	54%	46%	100%

Table 2.3 The use of IT tools/platforms in Ibn khaldoun university

Question 04 :

Do you prefer studying online or attending classes ?

The aim behind this question is to know if learners prefer studying online or attending classes.

Table4 shows that the majority of our participants thirty six (72%) prefer attending classes, while the other participants fourteen(28%) prefer studying online .

Students prefer studying	Attending	Online	Total
N	36	14	50
%	72%	28%	100%

Table 2.4 Attending and online study

Question05:

As a student, does the internet help you when studying remotely?
 Through the answers we note that most of the respondents thirty two(64%) see that the internet helps them in studying remotely, while the rest eighteen (36%) see that the internet doesn't help them in studying remotely.

Internet helps in studying remotely	Yes	No	Total
N	32	18	50
%	64%	36%	100%

Table2.5 benefits of internet in studying remotely

Question 06 :

Student acquire knowledge through ?
 The purpose of this question is tried to know how students acquire knowledge forty learners which represent (80 %) confirm that they acquire knowledge through both (sight and hearing) while seven students (14%) said that they acquire knowledge through hearing ,while just three students(6%)acquire knowledge through sight

Student acquire knowledge through	Sight	hearing	both	Total
N	3	7	40	50
%	6%	14%	80%	100%

Table2.6 The way of Knowledge acquisition

Question 07 :

Did university's Moodle platform increase your knowledge level during the covide-19 period ?

Table 07 demonstrates that the majority of our participants agree that the university's Moodle platform did not increase their level during the covid 19 period (68%) whereas the other participants (24%) said that university platform somehow increased their level, and just (8%) see that moodle increased their level .

University Moodle increase level	Yes	No	Somehow	Total
N	4	34	12	50
%	8%	68%	24%	100%

Table 2.7 Benefits of the university Moodle platform

Question 08 :

Which of these problematic situations did you experience distance learning ?

Most respondents showed that the poor teacher contact is the problem that they faced in the distance learning , as shown in the table 08 (50%) of the respondents have lack of face to face contact and lack of communication with teachers that affect successful distance learning

Also findings shows that inadequate feedback (20%) and poor students support services (20%) are other problems in distance learning , finally alienation and isolation (10%).

problematic situation	Inadequate feedback	poor teacher contact	Alienation and isolation	Poor student support services	Total
N	10	25	5	10	50
%	20%	50%	10%	20%	100%

Table2.8 problematic situation in distance learning

Question 09:

Which of the following do you prefer when learning?

The findings of table 09 indicate that the majority of students prefer learning through websites (62%) while (20%) prefer learning with apps, whereas the rest respondents prefer learning using moodle.

Student prefer learning with	website	platform	Apps	Total
N	31	09	10	50
%	62%	18%	20%	100%

Table 2.9 learning through website , platform apps

Question10:

Were you able to access Moodle easily?

Findings in table 10 showed that the majority of students (58%) argue that they were able to access Moodle easily sometimes, while other participants never accessed Moodle easily (28%), whereas (14%) always have difficulties accessing Moodle easily .

Able to access moodle	Always	sometimes	Never	Total
N	07	29	14	50
%	14%	58%	28%	100%

Table 2.10 Moodle access

Question11 :

Which of the following social media do you use the most ?

Findings in table 11 showed that the most social media used is facebook (62%) while (24%) of the respondents used instagram and the rest (14%) used linked in.

The most social media used	Facebook	instagram	linkedin	Total
N	31	12	07	62
%	62%	24%	14%	100%

Table 2.11 The use of social media

Question12 :

According to you, what is the most significant pedagogical challenge that the university will have to take in order to improve the ICT learning tools?

Findings in table 12 showed that the most challenge that the most important challenge that the university has to take in order to improve ict learning tools is improving internet access in urban and rural areas (32 %) while (26%) of the respondents see that the training for both teachers and students is also another important challenge, and about of (22%) reported developing ict skills, and (10%) see students assessment through virtual exams as a challenge have to take .

Selected challenges	N	%
Developing IC skill	11	22%
Improving internet access in urban and rural areas	16	32%
Training for teachers	13	26%
Raise awareness among students on the usefulness of learning online	02	04%
Covering different needs and learning styles	03	06%
Students assessment through virtual exams	05	10%

Table 2.12 pedagogical challenges to improve ICT learning tools

Data Interpretation :

In order to reach reliable results in this study and to demonstrate a clear idea about the pedagogical challenges to improve ICT learning tools, the results acquired from the previous analyses are discussed subsequently . The discussion of the findings is obtained from the analysis of data that was gathered by one main research instrument; the questionnaire addressed to students.

The main findings that were acquired from the analysis of data confirm that IBN KHALDOUN university uses IT tools/ platforms. Students prefer attending classes and they favor direct interaction

with their teachers for a better comprehension. Also, the internet helps them when studying remotely. The university moodle platform doesn't increase their knowledge level during the covid-19 period. Students faced difficulties to access Moodle, However the university has to take challenges in order to improve the ICT learning tools. Improving internet access in urban and rural areas is an important challenge to take, according to chapter one page(...) Lack of adequate ICT equipment and internet access is one of the key problems that schools specifically in rural areas are facing now (Chapelle, 2011). In addition, the university has to develop ICT skills in order to improve their education systems and develop its human resources' performances. Finally, ICTs training for teachers and students is more than necessary to enhance students' knowledge and skills.

Conclusion:

According to the results obtained from the questionnaire, we discussed the pedagogical challenges that the university should take in order to develop and improve its educational resources and tools. The students are aware that ICTs play an important role in their learning. Moreover, it is necessary to implement ICTs as pedagogical tools to enhance the quality of education taking into consideration the hurdles of such a process.

This practical part of our research also determined random students' preferences in terms of interaction and resources in learning.

Chapter three
Recommendations
And
Suggestions

Introduction:

In light of the obtained results, this chapter concerns the pedagogical challenges to improve ICT learning tools and the main suggestions and recommendations that draw the attention of both students and teachers to the need of using ICT learning tools. This chapter is the last part of this study research, therefore, it focuses on the main challenges that the university may face along with the limitations of the study.

Pedagogical challenges to improve the ict learning tools:

1. Developing ICT learning tools:

Communication skills have been important in education for centuries (Voogt et al., 2013). Students need to have the ability to “exchange, criticise, and present information and ideas” (Ananiadou, Claro, 2009, p. 10). ICT has become an important tool for supporting communication both in education and also in a wide range of social practices (National Research Council, 2012) making it easier to reach a wide audience and communicate at a distance, faster and more ubiquitously. Students need to have well-developed communication skills in order to collaborate and work in teams. Collaboration is one of the skills clearly demanded by the twenty-first century workplace, particularly with the shift away from manual work (Dede, 2010). Team working is increasingly being facilitated by digital tools, which allow geographically dispersed team members to collaborate.

Digital literacy does not simply refer to technical skills, but to “the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills” (ALA, 2011). It includes, for example, internet safety and an understanding of the ethical and legal issues relating to the access and use of ICT. Digital literacy is sometimes

conflated with the closely related terms, information literacy and media literacy. In addition, other 21st century skills, for example, communication, collaboration and creativity are included as components of some definitions of digital literacy. While the integration of these 21 century skills in classrooms is encouraged by theorists and policymakers, in practice, teachers often lack the skills and the space to teach their students 21st century skills (Voogt et al., 2013). Furthermore, their development requires substantial changes to pedagogical approaches and assessment practices (Binkley et al., 2012; Voogt, Pareja Roblin, 2012). The ITEC project has endeavoured to provide support and resources for teachers to enable them to develop their students' 21st century skills through new pedagogical approaches that make substantial use of technology. The resources have been designed to be generic and applicable to a wide range of curriculum areas, thus enabling the development of 21st century skills to be integrated within curricula.

2. Improving internet access in urban and rural areas:

Ongoing Covid-19 lockdowns are laying bare the cracks in global digital infrastructure. Many communities in the developed as well as the developing world still lack access to internet of sufficient quality to work and learn from home, presenting an acute risk for long-term economic growth. A digital-led recovery is not viable if employees and customers alike cannot participate in the digital economy.

Covid-19 has shown that internet access is a necessity, “like access to electricity or clean water”, as Bhaskar Chakravorti, dean of global business at The Fletcher School at Tufts University, told *Tech Monitor* last year.

And while the proportion of people who are internet users has increased rapidly across the world in the past two decades – 61% on

average in 2020, up from 9% in 2000, according to GlobalData – many countries still fall short when it comes to providing fast, reliable and affordable connectivity.

Online teaching in Algeria is not an easy task, many teachers face challenges due to different reasons and factors. One of these reasons is Internet access and reliability. With the current circumstances, it has been noticed that the need for internet access is alarming, and that the Algerian authorities should ensure for both teachers and students. Razei Mohammad Fakhrul also stated that students who live in urban areas would not have any problems as their access to the internet was good, but these were a small number.

So far, the students have no problem with internet access, regardless of their social situation, in urban or rural areas...as long as they have a handphone.

Meanwhile, Mathematics teacher in a primary school in Taiping, Perak, Syafaat Nasib, 29, said he does not conduct online classes and homework is given through the Telegram application, but not all students are in the group.

He said teachers must be aware of students who may have problems with online study due to lack of internet access.

Online learning is very dependent on internet access, for instance, students are given work through Google Form or Quizizz, but not all can get access.

3. Training for teachers and students:

One of the most efficient methods for trainee teachers' effective and active learning is integration of technology in syllabus. Nowadays, there is a widespread use of Information and Communication Technology (ICT) in education, and a lot of schools around the world have been equipped with technological facilities. Thus, teachers need to exploit the considerable potential of these facilities in education.

Churchill (2009) argues that ICT adds a new dimension to teaching effectiveness by enabling teachers to do things that might not be possible within the traditional classroom. Nevertheless, teachers need professional training to be able to integrate technology in the syllabus. Using modern technology alone or without considering learning theories will not be effective.

In order to be able to integrate ICT teaching, teachers first need an intensive course on the pedagogical use of ICT for a certain subject (Baylor & Ritchie 2002). Teacher-trainers should illustrate, both in practice and in theory, how technology is used in teaching so that this may provide them a direct experience. Second, teachers should be aware that introducing ICT tools in teaching not only changes the use of tools in teaching but also what we teach and how we teach, which is an important and often overlooked aspect of many ICT integration interventions (Harris et al. 2009). Therefore, trainee teachers need to be able to use ICT tools in their classrooms creatively, purposefully, and effectively. Graham et al. (2009) state that teaching ICT skills alone does not serve pre-service teachers well, because they learn how to operate ICT-related tools without being able to use them effectively to promote students' learning. To be an ICT-integrating teacher means going beyond ICT skills, and developing an understanding of the complex relationships between pedagogy, content, and ICT (Hughes 2005).

Koehler and Mishra (2005) recommended that involving teachers in collaborative authentic problem solving tasks with ICT is an effective way to learn about ICT and ICT integration processes and to develop Technological Pedagogical Content Knowledge (TPACK), which they called 'learning technology by design'. The idea of Pedagogical Content Knowledge (PCK) was first described by Shulman (1986) and TPACK builds on those core ideas through the inclusion of

technology. Koehler and Mishra have done extensive work in constructing the TPACK framework. Koehler, Mishra, and Yahia (2007) proposed that teachers should work collaboratively in Design Teams (DTs) to develop TPACK by designing an ICT solution for a pedagogical problem.

The Algerian Ministry of higher education and scientific research started a training program dedicated to newly recruited teachers. This initiative supervised by the university of Constantine aims at training the lecturers on the importance of online and blended learning and at improving their ICT skills in designing online lessons and activities for their students.

4. Raising awareness among students on the usefulness of learning online:

Thanks to the internet, it becomes easy for students to access a wide range of information. While students face an obstacle in traditional education, then online classes will help them to learn something new and gain knowledge. Even the students from the boarding schools are able to take this benefit. E-learning is an effective way for students to study. Online learning has many advantages that help students to benefit from their education. Online education has seen rapid progress in recent times. **Online classes** may assist students when they are unable to go to take face to face classes. Through *online classes*, students can get the same quality of education sitting in their homes. Education may have numerous purposes, and online classes help to fulfil them. Online education can be a recognized education as it offers new opportunities for traditional learning. *Online classes* are convenient and flexible. Here are some features of online classes:

a) Flexible Schedule:

Without going outside, students can learn various topics through online classes, even sitting at home. *Online classes* save time and money of travelling. Online classes offer a flexible schedule that permits students to study at their own convenience. Students can gain knowledge through virtual classes with their teacher, or by downloading the contents of their lessons or simply by watching the videos of any subjects at any time.

b) All student can Benefit from their education:

Through online classes, every student can gain an education. When the students are not able to go to the university due to some serious reasons, they can easily study from online classes. In such cases, online classes help to eliminate the hurdles that might keep them from learning. *Online classes* offer high-quality education to students at their own place. Online learning is a great solution for students to study effectively.

c) Keep up With evolving trends:

In every field, it is essential to keep up with evolving trends. Whether it is the educational field or any other field, changes are required everywhere. In today's world, a considerable number of people have a digital life. The online classes can help students to learn things visually, and because of this, they can easily remember the things that they have learnt. In other words, through online classes, students learn more effectively. Online classes are more beneficial than traditional education in some ways.

d) Vast Choice Of Syllabus

In traditional education, students have a limited syllabus, whereas, in online education, students have a vast choice of syllabus. Through online classes, students can learn more things out of their syllabus, which become very useful for their future. Online platforms like Moodle or Edx provide unlimited paths, and online education has a wide range of choices. Students can study anything they want to study at any level. From learning a new language to building a website, students can learn quite a lot from online classes.

e) Learn Whatever You Want

Online classes also allow students to learn anything or whatever they want. When students make their own choices, they can learn more efficiently. Through online classes, students can learn the subject in which they are interested. In online classes, students have numerous choices so that they can choose anything of their choice.

5- Students assessment through virtual exams:

Faculty who assess students through exams and quizzes can continue to do so online. Teaching remotely, however, does pose distinct challenges for testing students and requires instructors to be thoughtful about designing assessments that promote both student learning and academic integrity.

Because high numbers of students may miss the exams or the deadlines, and technologies may not always work as intended in this time of high demand. That is why, lecturers should be more flexible in setting parameters for exams. Illness, inability or technological problems may prevent some students from taking

exams or turning in assignments as scheduled. It is paramount that lecturers foresee the mechanisms to handle such situations, and communicate their plans to their students. It is also recommended to consider flexible completion times.

Proctoring away from the classroom is not practical and the university does not encourage the use of remote proctoring services or using tools like Zoom or BlueJeans for this purpose. Think about strategies for administering and designing exams that mitigate cheating.

Teaching courses entirely online often calls on faculty to think differently about how teachers assess students and develop assignments that take advantage of being online. It would be highly appreciated that teachers think about alternatives to exams that enable them to see that students have learned what teachers expect.

Suggestions and Recommendations:

Ultimately, the results obtained in this research are not definitive. Some recommendations are suggested to help the university, teachers and students overcome the numerous pedagogical challenges to improve the use of information and communication technologies in the educational framework.

- ✓ Sufficiently equipped classrooms with sufficient ICT tools should be at teachers and students' disposal to provide a comfortable teaching and learning atmosphere .
- ✓ Students, teachers and administrators should have easy access to the internet connection in order to do research and prepare their lessons .
- ✓ It is necessary to schedule continuous training sessions for teachers on the use of different types of technological

devices and teaching platforms, because many teachers lack the experience in that field to improve the quality of education.

- ✓ Raise Awareness amongst students about the importance of using ICT in education.
- ✓ Teachers should allow students to use ICT applications with activities if they face any difficulties .

Limitation of the study:

The main limitation of this study was in the practical part since Covid-19 obliged the researcher to work from home, hence ,not being able to have face to face contact with the participants and obliged the researcher to conduct online questionnaires for students. These questionnaires have been spread using social media platforms and e-mails. Another limitation is the lack of awareness when it comes to ICT, some students could not understand what this term means.

Conclusion:

In this last chapter we attempted to determine the most important challenges that the university may face in terms of ICT learning tool. A non-exhaustive series of suggestions and recommendations based on various research was formulated for a reliable and effective use of ICTs in the educational system.

These conclusions added to a realistic educational digital policy are the starting point of a reliable educational reform that meets the technical and technological requirements of the 21st century.

General Conclusion:

The present research study has attempted to cover limited ways to improve ICT learning tools in education. Primarily ,it was dedicated to examine the pedagogical challenges that universities may face. Besides, it has sought to raise awareness about the importance of ICTs in education. Students have positive attitudes towards ICT and feel more comfortable, dynamic and confident while utilizing these tools, it tends to solve problems and difficulties facing them as well. For teachers ,on the other hand, ICTs provide a new and innovative way of teaching as it facilitates the way of teaching and motivates the students' to get interest in the courses. Our research reveals that ICTs in education have a great potential to enhance educational reform through the use of platforms (blended and online learning), therefore ICTs is important in helping teachers to interact with students, and in accessing with institutions and universities, therefore through our study we reached three research questions (1- Does IBN KHALDOUN university use ICTs tools / platforms?, 2- Did university's moodle platform contribute to developing students and knowledge skills during the covid-19 period?, 3- What is the most significant pedagogical challenge that the university will have to take in order to improve the ICT learning tools.)

This study assumes three hypotheses, the answer to the first question is that IBN KHALDOUN university uses IT tools / platforms. During the recent Covid-19 pandemic, the university was forced to resort studying remotely the university has applied to use Moodle platforms in order to help teachers and students to contact contribute to developing students and knowledge skills during the corona -19 period

Moreover, the use of this tools contribute to developing students' and knowledge skills during the covid-19 period by putting students in to small groups where they could present their their assignments. this will help to develop students skills, students can work online or in a blended way, and they can create posters digitally and share them through online platforms either synchronously or asynchronously.

The results of our research also show that the university has to foresee this pedagogical challenges in order to improve ICT learning tools and developing ICT skills and training for teachers. Teachers should also be aware about the methods of using ICT in education .

We have examined the practical part of the research study . In order to answer the research questions we have investigated this problem through gathering various data from IBN KHALDOUN university students. The findings of this study appear to confirm our hypothesis, the students questionnaire have enabled as to collect data concerning the use of ICTs and the pedagogical challenges in educational settings .

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APPENDICES

Poor teacher contact

Poor student support services

9. Which of the following you prefer when learning?

website

platform/Moodle

Apps

10. Were you able to access Moodle easily ?

always

sometimes

Never

11. Which of the following social media do you use the most ?

facebook

Instagram

linked in

Others.....

12. According to you, what is the most significant pedagogical challenge that the university will have to take in order to improve the ICT learning tools?

Challenges	Select
Developing ICT skills	
Improving internet access in urban and rural areas	
Training for both teachers and students	
Raise awareness among students on the usefulness of learning online	
Covering different needs and learning styles	
Students assessment through virtual exams	

Thank you for being a part of this research, we appreciate your help.

ملخص

قد شكّل إنتشار فيروس كورونا المستجد تحديا للعالم أجمع لما له من آثار جليلة المعالم على حياة الفرد والمجتمع. شُلت جميع مظاهر الحياة بس الجائحة، بما في ذلك الأنظمة التعليمية والتربوية العربية والغربية. و ضمانا لاستمرارية التعليم في ظل الإجراءات الصحية الكلي أو الجزئي للدراسة حضوريا، وجدت الجامعات الجزائرية، بما فيها جامعة ابن خلدون ، نفسها مجبرة أن تنصرف إلى التعليم عن بُعد و التعليم المختلط. وعلى ضوء ما سبق، فإن أهمية الموضوع تكمن في تسليط الضوء على تجربة جامعة تيارت مع التعليم الحديث، معتمدة على المنصات الإلكترونية ووسائل معلومات التكنولوجيا والاتصال والتحديات التي واجهتها.

Résumé :

La propagation du nouveau coronavirus a posé un défi au monde entier en raison de ses implications évidentes pour la vie de l'individu et de la société. Tous les aspects de la vie ont été paralysés par la pandémie, y compris les systèmes éducatifs arabes et occidentaux. Afin d'assurer la continuité de l'éducation dans le cadre des mesures sanitaires, les universités Algériennes, y compris l'Université d'Ibn Khaldoun de Tiaret, se sont trouvées contraintes soit d'aller à l'enseignement à distance et l'enseignement hybride. À la lumière de ce qui précède, l'importance du sujet réside dans la mise en évidence de l'expérience de l'Université de Tiaret avec l'éducation moderne, en s'appuyant sur les plateformes électroniques et les moyens des nouvelles technologies et de l'information et de la communication et les défis que les universités devront relever.

Summary :

The spread of the new Coronavirus has posed a challenge to the entire world because of its obvious implications for the life of the individual and the society. All aspects of life have been crippled by the pandemic, including Arab and Western educational systems. In order to ensure the continuity of education according to the sanitary condition, the Algerian universities, including the University of Ibn Khaldoun- Tiaret, have found themselves forced to either adopt remote learning or blended learning. In the light of the above, the importance of the topic lies in highlighting the experience of the University of Tiaret with modern education, relying on electronic platforms and the means of information and communication technologies. and communication information and the challenges they have faced.