The Use of ICT in the learning process among the students of History and Civilization at Abdelmalek Essaadi University, Morocco

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Abstract— This article aims at analyzing the use of information and communications technology (ICT) in the learning process among university students of History and Civilization at Abdelmalek Essaadi University in Morocco. Data was collected by means of a questionnaire that was distributed among 187 students. The results reveal that there is still a digital divide regarding unequal access to ICT and its limited use by the students. Hence the need for multiplying efforts to ensure an effective integration strategy of ICT in the pedagogical practices.

Index Terms— Information and Communication Technologies, ICT, the use of ICT, learning, higher education.

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1 INTRODUCTION

The world has experienced a technological revolution that has emerged rapidly in all fields including the education field. Thus, educational systems are invited to adopt an ICT integration strategy in order to improve the pedagogical practices.

In fact, the advent of ICTs in higher education and the remarkable development of their uses have completely revolutionized the relationship between knowledge and the pedagogical practices. This idea has already been confirmed by [1] "*The ICT in the Education Programme focuses on the potential of ICT in achieving quality education for all*".

Recognizing the positive impact of ICT on improving the quality of the teaching-learning activity, Morocco is actively involved in the restructuring of ICT and its use by multiplying its actions for two main goals: to position Morocco as a regional technology hub and to make ICT a vector of human and economic development. In this regard, the Higher Council of Education, Training and Scientific Research has emphasized the need for renovating the pedagogical practices through a judicious integration of ICT and promoting widespread access to ICT programs for both students and teachers [2].

Furthermore, the use of ICT in the learning process by university students represents for them a key competency in order to better adapt to a constantly progressing society and to develop skills that meet the needs of the 21st century. Indeed, ICT stimulates their interest and encourages them to adopt a newer mode of acquisition of knowledge and skills for the sake of improving their cognitive capacities and developing their autonomous learning as well as their collaboration and sharing.

In order to better approach the problematic aspect of ICT use among students in higher education, we rely on the assumption that ICTs can have a positive impact on the learning process of students provided that they are used judiciously [3]. Hence the interest of this study which aims at analyzing the uses of ICT among the university students enrolled in His-

tory and Civilization, based on two factors: ICT accessibility and its uses, since the context and the use are crucial for the impact of ICT on learning and skills development [4]. We will try to answer the following questions:
• What is the degree of ICT accessibility among the students enrolled in History and Civilization at Abdelmalek Essaadi University?
• How do these students use ICT in the learning process?

2 THEORETICAL FRAMEWORK

2.1 Types of ICT tools

Basically, ICT refers to forms of technology that are used to create, store, transmit, share or exchange information. According to [5] ICT is defined as the "*diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information*". These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony.

There are many types of ICT tools that can be used by teachers and students in order to improve the teaching and learning process. In this regard, ICT tools have been classified into four categories by [6] as it shown on the table below:

TABLE 1
TYPES OF ICT TOOLS

Type of ICT tools	Description	Examples
Informative tools	Applications that provide huge amounts of information in various formats such as text, sound, graphics or video	Multimedia encyclopedias or different digital resources available on the Internet

Situating tools	Systems that place students in an environment where they can experience both the context and the real life situation	Games, simulation and virtual reality
Constructive tools	These tools allow students to produce a certain tangible product for educational purposes	web authoring applications, wiki and office tools which allow students to create their own web pages and share their ideas
Communicative tools	Systems that facilitate communication between the teacher and their students or among students.	Email, chat, social media teleconferencing

2.2 Use of ICT

Two main meanings are given to the term "use" in the Robert dictionary of sociology [7]. The first refers to the social practice whose age or frequency renders it normal in a given culture. The second refers to the use of an object, natural or symbolic, for particular purposes. We can deduce that the social uses of a product, an instrument, or an object in order to highlight "*the complex cultural meanings of daily life behaviors*" [8].

In this regard, the notion of "use" serves to emphasize the complex relationship between the following elements: the social behavior of the user, the purpose of the use and the technological devices.

2.3 Impact of ICT on learning

ICTs arouse interest among university students and encourage them to adopt à new way of acquiring knowledge and developing skills, as pointed out by [9], ICT promote more in-depth learning among students, as well as its integration has a positive impact on learning and metacognition. Consequently, ICTs have the following impacts on learners:

- Motivate to learn: the aspects related to the motivation to learn based on ICTs have been the subject of a set of research papers. [10] emphasize the link between ICT and motivation by recalling that a high level of motivation generally facilitates learning, it is one of the most important factors in learning environments where learners participate actively. In addition, ICTs promote responsibility and active engagement of students towards learning and achievement [11] [12]. In this perspective, [13] built a model of motivation based on the social cognitive approach to explain the motivational dynamics of the learner in a learning situation.
- Co-construct knowledge: Researchers in social constructivism agree on the fact that the different uses of ICTs promote social interactions and learning. Indeed,

[14] talks about both the ability to develop social interactions and creating a "remote presence" in order to promote learning. Moreover, through ICTs, students are encouraged to work in teams, to learn through social interaction and to work on more or less long term projects [15].

- Improve cognitive abilities: The judicious use of ICTs promotes reflection [16], and positively influences the way of processing information by learners. Indeed, [17] argues that ICTs make learning more meaningful, increase the ability to solve problems and to use metacognitive strategies. Moreover, [18] confirms that ICTs provide innovative means not only for the dissemination of knowledge but also for the exploration of learning strategies that promote the construction of skills.
- Learning independently: A study conducted by [19] demonstrates that ICTs support self-determination, the exploration of identity, as well as collaboration and sharing. Moreover, [20] states that the most significant change in the technological educational environment refers to the learners' autonomy through the wide range of free choice available.

3 MEHODOLOGY

In order to identify and analyze the use of ICTs among university students in the learning process, we have chosen to conduct a questionnaire survey, which was written in Arabic so as to facilitate understanding. This questionnaire contains closed and semi-open questions that were devised according to the following axes: general information, accessibility to ICTs and their uses in the learning process.

The participants in this survey are university students enrolled in "History and civilization" at Abdelmalek Essaadi University.

This survey took place in the middle of the academic year 2015/2016 on two phases:

- Test phase and correction: We have distributed a sample questionnaire among 14 students in order to make necessary corrections to ensure it was properly designed.
- Questionnaire administration phase: We distributed anonymous questionnaires to 204 students in an amphitheater. Thus, we were able to recover 187 responses, which represent a return rate of 91.67%.

To process the data collected, we used the software Sphinx V5 and Microsoft Office Excel 2010 to analyze the results of this study.

4 RESULTS

4.1 General information on respondents

TABLE 2

DISTRIBUTION OF RESPONDENTS BY GENDER, FUNCTION AND LEVEL OF STUDY

		Number	Proportion
Gender	Male	130	69,5%
	Female	57	30,5%
Employee	Yes	8	4,3%
	No	179	95,7%
Level of study	1st year	158	84,5%
	2nd year	26	13,9%
	3rd year	3	1,6%
	Master's degree	0	0%
Total		187	100%

Nearly two-thirds of respondents are men and almost 31% are women. Almost all respondents don't perform any function. As for the level of study, all respondents prepare a bachelor's degree in "*History and Civilization*" branch.
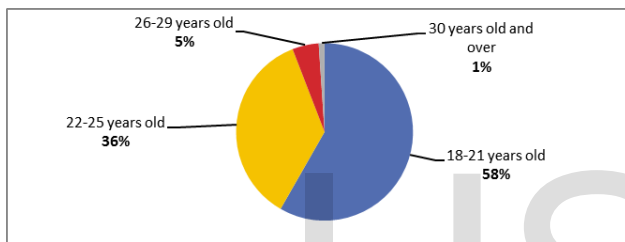
Fig. 1.   Distribution of respondents by age

More than half of the respondents are between the age of 18 and 21, this represents the usual age at the first and second cycle of university studies, while 42% of them are over 22 years old, this exceeds the usual age for the preparation of bachelor's degree, because "*History and Civilization*" is an open access branch.

4.2 Accessibility to ICTs
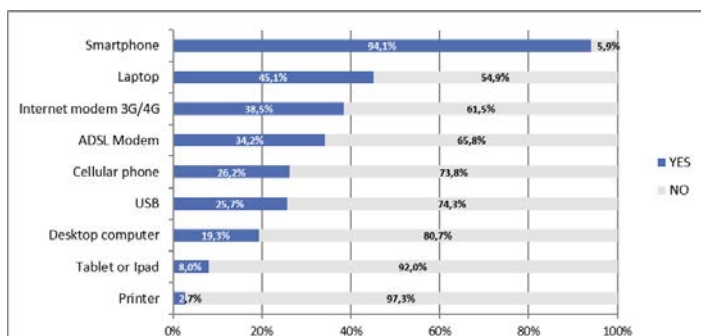
4.2.1 Accessibility to ICTs materials

Fig. 2.   Access to ICTs materials by students

It appears that the massive majority of students have smartphones, and almost half of them have laptops. In addition, about one third of respondents have 3G/4G or ADSL Internet modems, and almost a quarter of them have the following equipment: cell phones, USB storage devices and desktops.

Furthermore, a small portion of the respondents has tablets or Ipad and printers.

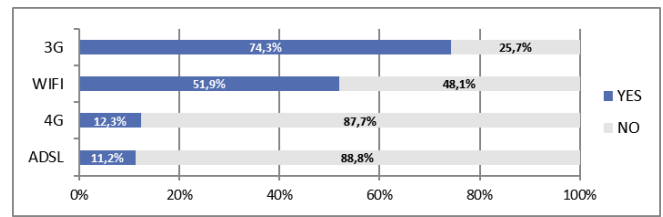### 4.2.2 Internet Connection Mode

Fig. 3.   Internet Connection Mode

The results show that nearly three-quarters of the students concerned connect to the Internet via 3G connection, while half of them confirm that they connect to the Internet via WIFI, which is usually available in public places or cybercafés. On the other hand, a tiny part uses ADSL and 4G as a mode of Internet connection.
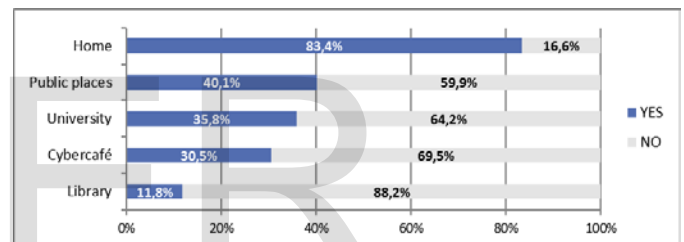
4.2.3 Places of Internet access

Fig. 4.   Places of Internet access

The majority of respondents access the Internet from their homes, while almost one-third of them connect to the Internet from public places, university and cybercafés. In addition, only 12% access the Internet from libraries.
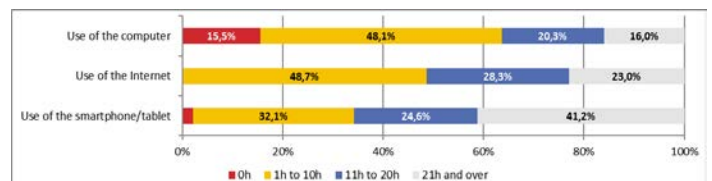
4.2.4 Frequency of ICTs use

Fig. 5.   Computer, Internet and smartphones/tablets frequency of use in hours per week

It turns out that almost half of the respondents use the computer between one hour and ten hours a week, while more than one third of them confirm using it for more than 11 hours per week, with an exception of 15.5% of the respondents who do not use the computer, a rate which should not be overlooked.
Regarding the use of the Internet, almost half of respondents use the Internet between one and ten hours a week, while the other half of them it is used for more than 11 hours per week.
As for the use of smartphones or tablets, we notice that almost

one-third of respondents use them between one hour and ten hours a week, and nearly two-thirds use them overwhelmingly for more than 11 hours per week. On the other hand, a tiny part does not use them.

4.3 The use of ICTs in the learning process
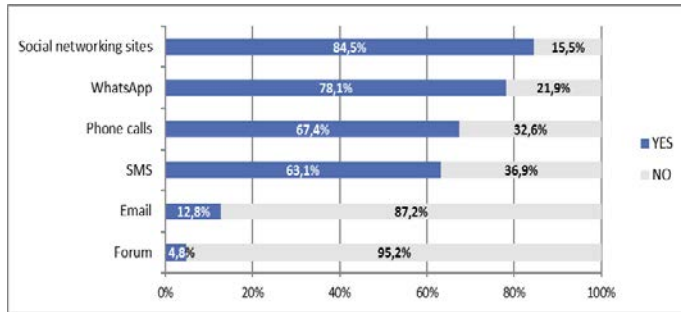
4.3.1 Communication tools

Fig. 6.   Communication tools used by students in the learning process

The results reveal that students use a variety of synchronous and asynchronous communication tools to keep in touch with their peers. The majority of respondents reported using social networking services and WhatsApp messenger, and almost two thirds of them use phone calls and SMS. Furthermore, almost one third of respondents use instant messaging. On the other hand, a tiny fraction of the students affirm using the forum and the e-mail in the learning process.
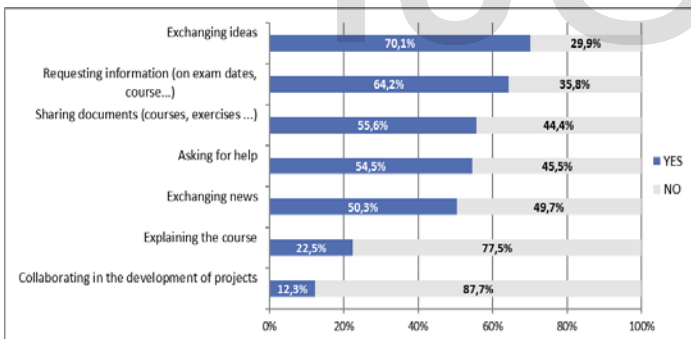

Fig. 7.   Uses of ICT tools for communication among students and their peers in the learning process

Nearly two-thirds of respondents reported using communication tools with their peers in the learning framework to exchange ideas and to ask for information. While more than half of them use these tools to share ideas and documents related to the course, to exchange news and to ask for help. On the other hand, a limited proportion of respondents said that they use these tools to explain the course and collaborate in the development of research projects.
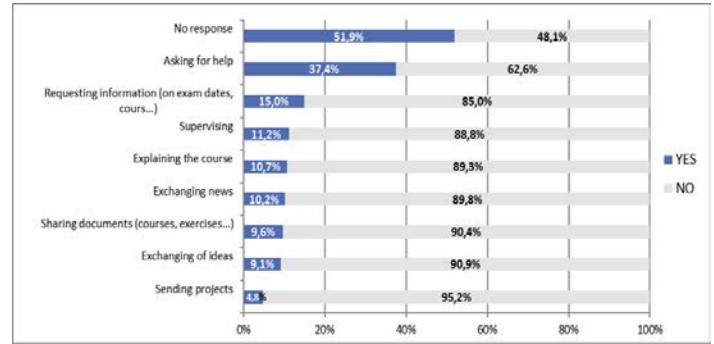

Fig. 8.   Use of ICT tools for communication by students with their teachers as part of the teaching-learning process

The results reveal that more than half of respondents do not use any ICT tool to communicate with their teachers in the teaching-learning process. Moreover, almost a third of respondents use these tools to seek help. On the other hand, a tiny part uses these tools with their teachers for the following reasons: request for information, exchange ideas and news, explain course content, share documents related to the course and supervising research projects.
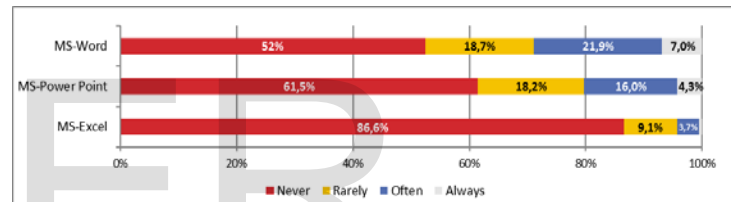

Fig. 9.   Degree of mastering of office tools

The results show that more than half of the respondents affirm that they have mastered the MS-Word software, and nearly 21% are comfortable using MS-PowerPoint presentation software. In addition, a limited number of students master MS-Excel software. On the other hand, a remarkable number of students (about 19%) declare that they do not master any of these softwares.
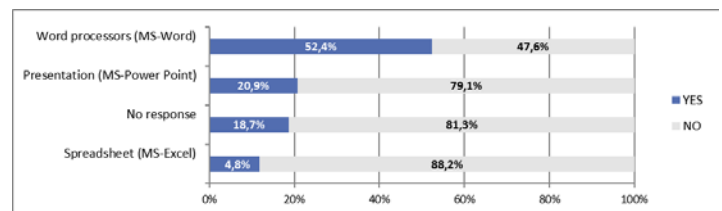

Fig. 10. Frequency of use of office tools by students

It turns out that the use of office tools by students is very low in the production of digital documents as part of the learning process. Indeed, almost 29% often or always uses the MS-Word word processing software, nearly 21% confirms that they use the MS-PowerPoint software regularly, while less than 5% declare that they often or always use MS-Excel software.
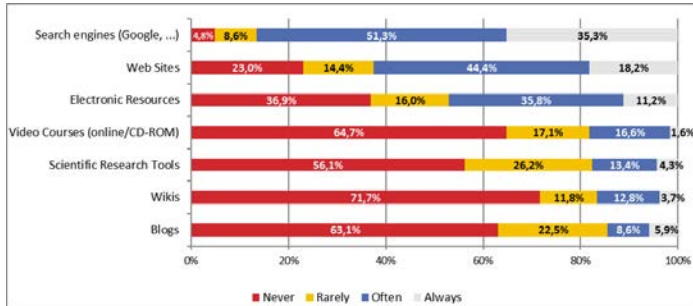
4.3.3 Information search tools

Fig. 11. Frequency of use of information search tools by students

The results reveal that the massive majority of students often or always use the popular Google search engine in information search process, while nearly two-thirds of the students often or always use Web sites and almost half of them use the electronic resources for the same purpose. On the other hand, a small proportion of students (less than 19%) affirm that they often or always use Video courses (online/CD-ROM), Wikis, blogs and academic research information tools: scientific search engines (such as Google Scholar) and databases (articles, theses, online libraries ...) for the sake of looking for information.
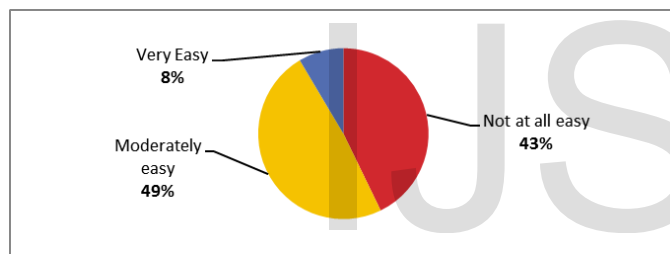

Fig. 12. Degree of ease available in the use of online information search tools

Regarding the ease of use of online research tools in order to access relevant information, only 8.6% of respondents affirm that they could easily access to the desired information on the Internet, while almost half of them find this operation moderately easy. On the other hand, a significant number of students (approximately 43%) confirm the existence of difficulties in finding the information sought.
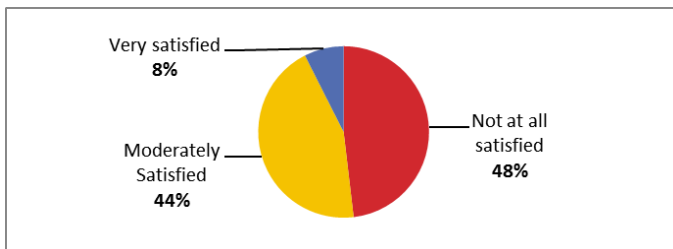

Fig. 13. Level of satisfaction towards the results found during searching for information on the Internet

The results reveal that a tiny part of the respondents is very satisfied with the results obtained by using Internet search tools, while almost 44% of them are moderately satisfied. On the other hand, almost half of them are not satisfied with the

results found while searching for information on the Internet.

5 DISCUSSION

5.1 In terms of ICT accessibility and connectivity

According to the results, almost 55% of students affirmed that they do not have a laptop and almost 81% reported that they do not have a desktop computer, which brings us to the issue of inequality in terms of computer ownership, even though a significant number of students were subsidized by the INJAZ program for the acquisition of laptops and Internet subscriptions, but this program was intended only for master and PhD students. In this regard, the Moroccan Ministry of Higher Education, Scientific Research and Professional Training has launched another program called "Lawhati" which aims to make "Tablets 2 in 1" available to all the students enrolled in higher education institutions at advantageous prices. According to the call for expression of interest No. 2/2015 [21], the target population is estimated more than 1.3 million beneficiaries for the academic year 2015-2016.

Regarding accessibility to Internet services, all students affirmed that they access the Internet at least one hour a week, and the majority of them made their access from their domicile. Because nearly 94% of students have a Smartphone that they use everyday including 75% use it to access the Internet via the 3G connection on their phones. Indeed, the report of [22] states that the Internet penetration rate reached 50% at the end of September 2016, the distribution of subscribers by access mode is as follows, with a predominance of the mobile Internet access, representing 92.88% of the global Internet market followed by ADSL with 7.06%. Thus, this unequal access to ICTs will surely influence the degree of their use, according to the results of [23] who affirm that the majority of university students in Morocco are in a situation of non-use of ICT, due to the inaccessibility of technological tools at home and on university campuses.

5.2 In terms of the use of ICTs in the learning process

5.2.1 Communication tools

Social networking sites and WhatsApp messenger are the most used communication tools by the majority of students in the learning process, a fact which has been confirmed by other research findings in the field of education that focuses on the uses of social networks in general and Facebook in particular by university students, these studies show that they use social networks to keep in touch and spend times with friends [24] [25]. In addition, the ANRT's annual report for 2014 [26] states that "*participation in social networks, access to instant messaging, [...] on the Internet are still the main activities of Moroccan Internet users*".

Students who participated in this study stressed the importance of using ICTs to stay in touch with peers outside the university, because more than half of the respondents can exchange ideas, ask for information, share documents related to the course, ask for help and exchange the news. Indeed,

synchronous and asynchronous communication tools can facilitate informal communication around classroom activities [27], since they create a virtual discussion space online among students by providing the opportunity to participate in various learning activities, especially for shy or reluctant students who are not ready to get involved in face to face discussions [28].

However, these uses are very limited because a very small proportion of the respondents affirm that they use communication tools to construct their knowledge and to collaborate in the development of research projects, due to the fact that Moroccan university students make regular use of ICTs in their daily lives, but rarely in their academic life [23]. While other research reveal that these tools support new forms of collaboration and construction of knowledge [19][29] and increase students' critical thinking [30].

Regarding the use of communication tools by students with their teachers, it remains very limited, since more than half of the respondents stated that there is no possibility of communication outside the classroom, due to the reluctance of teachers, who are less involved in the process of integrating ICTs therefore students are confronted with the lack of supervising and support by their teachers [31], since the basic training of teachers does not take into consideration the integration of ICT in teaching practices [23] [32]. Despite the undeniable contributions of ICTs in the reinforcement of communication and interaction between students and their teachers, as it was stated by [33] ICTs increase the interaction among students, between teachers and students, as well as that between educational materials and students.

On the other hand, a small proportion of the respondents take advantage of the potential offered by ICTs to communicate and interact with their teachers either in terms of coaching and mentoring or in terms of sharing and exchanging. Thus, the participation rate is very low, because communication channels are organized voluntarily by teachers [32] and informally around classroom activities [34].

5.2.2 Office production tools

Concerning the use of office tools by students in the production of digital documents as part of the learning process, the results reveal that less than one third of respondents use the MS-Word software to produce reports and courses summaries, and a tiny fraction of the respondents uses MS-PowerPoint software to create presentations and MS-Excel software to perform basic and complex mathematical computations and functions. It clearly seems that these uses are extremely low because office production tools are used only by those who master them through "*self-directed learning*" [31] and their motivation to discover new technologies tools. While a significant number do not take advantage of the potential of these tools in developing of their work, in improving their presentation and in communicating their knowledge.

5.2.3 Information search tools

The results reveal that the majority of respondents use general search engines in the information search process especially Google, which is considered as an entry point for the majority of researchers in order to access information [35], it has become the best tool for students to quickly access relevant information that meets their needs.

However, a tiny part states that it's easy to find the information sought adding that it's satisfied with the results found, since the massive majority doesn't use scientific research tools on the Internet such as (Google scholar, databases, online libraries ...), In accordance with the results of [31], which confirms that the use of academic research information tools (such as databases, scientific journals, etc.) is rare among students pursuing their studies at four Moroccan universities, due to either the lack of technological skills, or the unawareness of the existence of such tools, or the unawareness of the effectiveness and usefulness of these research tools.

Hence the interest of developing the information literacy skills of the students which represents "*a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information*" [36]. In this regard, some countries such as Canada, take into consideration the importance of developing these skills which correspond, according to [37], to abilities and skills in searching for and processing information, both on paper and on digital support.

6 CONCLUSION

This research aims to analyze the use of ICT in the learning process among the students of History and Civilization at Abdelmalek Essaadi University in Morocco, by determining the degree of accessibility to ICTs and their use in the learning activity. Data analysis reveals the existence of a double digital gap, either in terms of unequal access to ICT or the limited use of ICT in the learning process.

In terms of ICT accessibility, there is an inequality in computers and Internet modems ownership, except that the majority of students have a Smartphone. Nevertheless, all students use Internet services daily at least one hour a day through 3G connection on their phones and the WIFI available in public places. Aware of this reality, Morocco has multiplied its actions in the higher education sector in order to generalize ICT, thus facilitating students' access to digital services. However, students don't take advantage of the real potential of ICT in the learning activity.

First, social networks and WhatsApp Messenger are the most widely used tools by students to communicate with their peers for exchanging ideas, asking for information and sharing documents related to the course. Without taking into account the optimal uses of these tools especially in the framework of collaboration, construction of knowledge and collective learning. In addition, a remarkable number of students stressed the lack of communication with their teachers outside the university. Hence the need to establish means of communication in a formal way between the students and their teachers in order to take advantage of the potential of these tools in the context of improving the teaching-learning activity.

Secondly, the office tools for production of digital documents

(MS-Word, MS-Excel and MS-PowerPoint) are used only by the students who master them. Hence the advantage of reinforcing the students' acquisition in office tools through certified training programs such as the Microsoft Office Specialist (MOS) or the International Computer Driving License (ICDL). These training and certification programs help to develop the students' skills in the judicious use of aforementioned office tools according to international standards and to obtain a widely recognized certificate at the end of these programs.

Finally, the general search Google in the learning process is seen as an essential tool in the information search process by the majority of students. However, they find difficulties to access the relevant information; moreover, they are not satisfied with the results obtained, due to the fact of being unaware of such scientific research tools on the Internet or the lack of information literacy skills in order to locate, evaluate and use effectively the information sought. Hence the need to develop these skills to offer self-learning opportunities to students and to use the appropriate ICT tools to access relevant information quickly and easily.

In conclusion, to improve the use of ICT in the process of learning process, it is necessary to accelerate the implementation of a national strategy for the integration of educational technologies, through the multiplication of actions towards a widespread access to ICT and an unconditioned support of innovations that promote the development of pedagogical practices in higher education.

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