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When ICT ensures pedagogical continuity in times of crisis : Case of Ibn Zohr University, Morocco

Samar Chakhrati

PhD of language and communication , Ibn Zohr University, Agadir Morocco.

Abstract

The year 2020 was marked by the advent of the COVID-19 pandemic, whose impact on the entire world was unprecedented. The rapid spread of this virus has led to health, economic, and social crises on a global scale. Indeed, it is one of the greatest challenges we have faced since World War II. Information and Communication Technologies (ICT) have indeed brought significant changes in the field of university education, improving access to information, enabling distance learning, facilitating collaboration and communication, and offering innovative tools for learning and assessment. These changes have not only enriched the educational experience but have also opened new perspectives for education on an international scale.

Keyword : Covid-19, ICT, higher education, usage, representations.

Introduction

For the past few years, information and communication technologies (ICT) have revolutionized many sectors of society, including higher education on an international scale. ICT, constantly evolving, are beginning to establish themselves as a lever in pedagogical innovation and educational accessibility.

Research has highlighted the positive impact of ICT, particularly their essential role in strengthening digital skills, a concept emphasized by Dinet, J. (2008). Moreover, according to Depover, C., Karsenti, T., & Komis, V., (2007), ICT stimulates motivation, creativity, and autonomy among educators and learners.

When the pandemic hit Morocco in March 2020, like many other nations, it adopted a proactive approach by imposing lockdown measures to control the spread of the virus. These measures, although necessary for public health, caused substantial disruptions in various sectors, including higher education. The impact of these measures has been felt both by educational institutions and by stakeholders, particularly teachers and students.

Our approach, at the level of this study, is situated in a purely theoretical dimension in which the treatment of our research object is favored under several facets, and which will subsequently constitute the basis for the definition of key concepts, leading to the answer to the following research

question:
What forms of usage are likely to emerge from students' participation in a virtual space containing devices (video capsules, PDFs, interactive exercises, etc.) provided by the university?

I. ICT: Studying Usage Between Yesterday and Today

Studying the use of ICT, according to Proulx S. (2015), is a discipline that emerged in France during the 1970s-1980s from several sociological studies describing "what people actually do with technical objects" such as the VCR, the television remote control, home computing, or the answering machine, and around the evaluation of the first social experiments with Minitel, cable, or videophone (Biarritz). This study is based on the research of Michel de Certeau and on the examination of the "ways of doing" of ordinary practitioners, resistant to new technologies. It is now based on the analytical categories of use, practice, representation, and context (social, cultural, or political).

Harold Lasswell, an American political scientist, was the first to present four functional analyzes of the media from a macrosociological perspective in 1948: the media perform functions for both society and individuals, including mutual surveillance, entertainment, the creation of associations, and cultural communication, by creating a model based on the following five questions: (Who says What to Whom in Which channel with What effect?) or, Who? Said what? To whom?

By what means? With what effects? He thus defended the idea that the media directly induce messages to individuals, called the "hypodermic needle model," from which propaganda derives, where the action of spreading, making public, and getting an idea, doctrine, or political ideology accepted in order to shape public opinion is an extremely important demonstration. In 1974, communication specialist Jay Blumler and sociologist Elihu Katz collaborated on the publication of an article titled "The Uses and Gratifications Research," in which they explain that the uses and gratifications approach had well entered a third major phase of its evolution: it is somewhat a transition to maturity. It may not be so simple to suggest that in its "early days," in the 1940s and 1950s, the main objective of much of the work in this perspective was the in-depth description of audience subgroups' attitudes toward certain forms of media content. Subsequently, and toward the end of the 1960s, much research focused on the implementation of social and psychological variables presumed to give rise to differentiated patterns in terms of media consumption. These studies mainly resulted in promising findings that viewers' tendencies to seek certain satisfactions in media content could be measured and deployed in a quantitative analysis.

1. ICT in daily life: new phrases, old realities ICT in daily life:

new phrases, old (s) realities (ies)

This trilogy "Information and Communication Technologies" is based on three key concepts that take on distinct connotations depending on the fields to which they belong. Thus, in the first part, we will define each concept, and then, in the second part, we will establish the relationship between each of them.

a. What is information? What is information?

The word "information" appeared in 1274, derived from Latin. It refers to "information about someone or something," whereas this term, starting from the first half of the 20th century, has been used in the Media as an "Action of informing someone, a group, keeping them updated on events."

Indeed, this term is not at all related to the meaning given to the word "Information" in the expression "Information and Communication Technologies." It was only in the early 1950s, a period marked by the emergence of the science of information processing, that this notion gained the meaning we attribute to it here: "What can be transmitted by a signal or a combination of signals (message) according to a common code and thru a channel; what is transmitted (object of knowledge, memory)." "Computer processing of information." However, in the field of computer science, the term "information" is represented by a contextualized data, whereas a data is merely an information converted into a digital version to facilitate its recording, processing, and transmission.

b. What is communication? What is communication?

Any communication involves (at least) a sender, a message, and a recipient. The combination of all these elements has led to the emergence of the act of communicating, which might seem trivially easy, but is indeed a much more complex subject than it appears, putting to the test the reconciliation of all its components. It turns out that the transmission of the message from the sender to the recipient can be affected by a considerable number

c. What is technology? What is technology?

Technology, a term that can have multiple meanings

depending on the context and usage. History illustrates the existence of "technology" from the moment when man decided to design everyday tools for hunting, cooking, drawing, moving, etc., with the aim of enabling him to access his daily life. However, the emergence of the word "technology" dates back only 250 years. Derived from the Greek word "tekhnologia," which means "treatise" or "dissertation" on an art, "tekhné" signifies "process/craft" while "logos" equates to "discourse, study." In this sense, Guillerme, J., & Sebestik, J. (2007) explain that: "The term technology has only acclimated with difficulty in the French language." If its meaning seems somewhat fixed today, it is only after a long series of variously fruitful mutations. We have heard it in the ancient acceptance of terminology of the divisions of knowledge; it designated the language of the arts.

The CNRTL defined the word "technology" as the "Science of techniques, systematic study of processes, methods, instruments, or tools specific to one or more technical fields, arts, or trades." This notion appeared in England in the 17th century to mean "a debate on applied arts" and was detected, in French, for the first time, according to Guillerme, J., & Sebestik, J. (2007), in an article titled "Catalogue de l'Encyclopédie." However, this neologism is nonexistent in Diderot's encyclopedic work.

d. Information and Communication Technologies: ICT

In order to better understand this concept, it is useful to first highlight the element "communication" in the phrase "information and communication technologies." Indeed, it is truly the union of the three fields - T, I, C - and the results of their cross-applications. For Gerbault, J. (2012) "But it is communication, that is to say, the flows of information, products, people, capital, and ideas that change the universe of literacy, even more than the printing press changed that of writing."

Globalization and the emergence of the knowledge society have caused profound changes in various aspects of life. Information and communication technologies (ICT) are one of the essential vectors of this society. These technologies have significantly impacted not only our way of life but also our learning, our ability to communicate, and our work. Like everyone else, and especially the younger ones, the submission to technological progress in its applications and uses encounters no obstacles. Digital technology has invaded every discipline in just twenty years, permeating all aspects of our personal, family, professional, and social lives, even intruding into the most intimate parts of individuals.

e. ICT and ICTE: Toward a Pedagogical Transition

It is common to discover a plethora of definitions of information and communication technologies (ICT). Even more so, according to various readings by different researchers specializing in ICT, Papert, S. (1980); Chambat, P. (1994) ; Karsenti, T., Savoie-Zajc, L., & Larose, F. (2001) ; Mangenot, F. (2000) ; Poellhuber, B., & Boulanger, R. (2001) ; Charlier, B., & Peraya, D. (2003) ; Proulx, S. (2005) ; Basque, J. (2005) ; Narcy-Combes, J-P. (2005); S Grosjean, S., & Bonneville, L. (2007), and others, We note that the latter have focused more on the impact of ICT integration than on their definitions.

Indeed, three initials have been repeated (T, I, C) in the three acronyms currently used, which previously existed in the acronym that preceded them: NTIC. Certainly, the disappearance of the N reflects the obvious fact that this field no longer needs to be qualified anew. Moreover, the flow of acronyms in information and communication technologies (ICT) continues to increase. It thus appears that this flow is increasing in relation to the number of studies conducted in this field. The integration of ICT in the educational sphere leads to multiple changes in usage and terminology. Moreover, the use of new technologies has taken on several pedagogical names: "Pedagogical Applications of the Computer" (PAC), "New Educational Technologies" (NET), "Computer-Assisted Instruction" (CAI), "Educational Technologies" (ET), "New Training Technologies" (NFT), "New Information and Communication Technologies in Education" (NICTE), and "Information and Communication Technologies in Education" (ICTE).

II. Methodological Aspect Methodological aspect

Working on the use of ICT in higher education leads us to question several targets (teachers/students). We dedicate this chapter to presenting the results obtained thru a quantitative study. Subsequently, we will synthesize these data using diagrams, figures, and summary tables.

2.1. Problematic and hypotheses

In order to collect the data necessary for this research, we resorted to questionnaires. The latter were distributed in paper format and also thru Google Forms links, intended for students enrolled in various programs at regulated access higher education institutions (ESEF, ENSA, ENCG, and EST). This wealth of data aims to ensure the representativeness and reliability of the responses, while shedding light on the central notions and concepts related to the issue, which we reformulate as follows:

What forms of usage are likely to emerge from students' participation in a virtual space containing resources such as video capsules, PDFs, interactive exercises, etc., provided by the university?

We will also address the verification of the three hypotheses previously stated in this study. For reference, they are as follows:

H1: Students' representations would determine their adoption (or rejection) of ICT.

H2: Digital devices would be an asset for the integration of ICT as a tool facilitating teaching/learning at Moroccan universities.

H3: The digital divide would be the main obstacle to the adoption and integration of ICT in higher education in Morocco.

2.2. ICT: Uses and Representations: Results of the Quantitative Study

• Respondent Profiles

Our survey targeted more than 500 students. However, out of this number, only 424 questionnaires were retained for analysis. The distribution of respondents by institution is as follows: 119 from ENCG, 113 from ESEF, 87 from EST, and 105 from ENSA. These figures are illustrated in Figure 1 below.

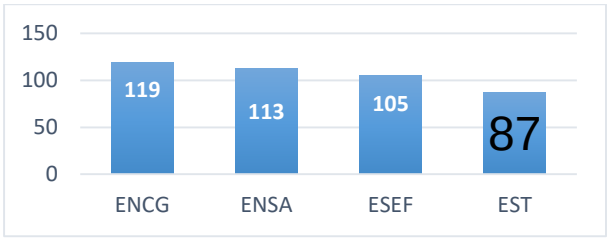

Figure No. 1 : Distribution of questionnaires collected by establishment

Among the 76 questionnaires not retained for analysis, 50 were not returned while 26 were discarded due to incompleteness (absence of responses to crucial questions). A total of 500 questionnaires were distributed, and 424 were returned, resulting in a response rate of 85%.

• Gender of the respondents

It should be noted that we have taken into account the "gender" variable (male/female) as it can prove relevant during cross-analyses between different variables.

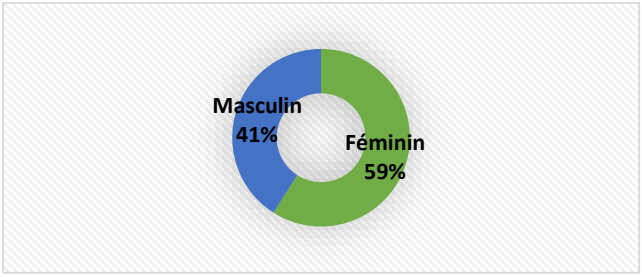

Figure No. 2: Distribution by gender of respondents

As shown in the graph above, 59% of the respondents are female, while 41% are male. This distribution highlights the importance of gender in participation in this survey. It is therefore relevant to use the variable "gender" when cross-referencing variables.

• Age

The participants in our survey are aged 19 to 21. We did not include this variable in the questionnaire because the studied population comes from schools with regulated access, where the admission age is predetermined. This age homogeneity indicates that the respondents belong to the same cohort.

• Availability of ICT equipment in higher education institutions

ICT equipment includes computers, interactive whiteboards, printers, photocopiers, scanners, tablets, and projectors. However, it should be noted that the non-use of these tools by some teachers has led some students to deny their presence within their institution.

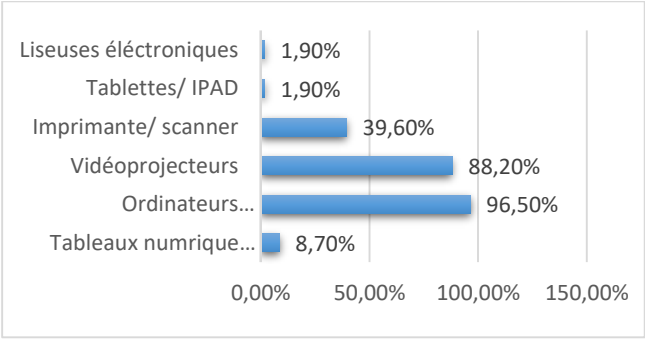

Figure No. 3 : Availability and Accessibility of ICT Equipment in Institutions

Asked about the ICT equipment in their institution and the most frequently used tools, 96.5% of students indicated that the computer remains the preferred instrument, closely followed by the projector at 88.2%. On the other hand, the use of the interactive whiteboard remains marginal with only 8.7% of mentions. It is important to emphasize that access to these equipment is often subject to administrative approval, an aspect that we will address in detail in the section "Access Mode to ICT Equipment."

• Frequency of access to available equipment

According to our survey: Even tho 54.3% of students frequently access ICT tools, it should be noted that the majority of them do not enjoy complete freedom in this regard. Regarding ICT equipment, the institutions have computers, printers, photocopiers, scanners, and projectors. All the visited schools offer at least one multimedia room. However, a segment of students who do not have access to these resources, or whose teachers do not integrate ICT, perceive a lack of equipment in their institution.

Access frequency	Number of students	Perrcentage (%)
Everyday	113	33.7
Often	79	20.6
Occasionally	142	33.5
Rarely	59	6.9
Never	31	5.3

Table No. 4: Frequency of access to ICT equipment in institutions

This aligns with Coulibaly, M.'s (2019) observations: the mere presence of ICT does not guaranty their effective use. Several obstacles, from insufficient training to faulty installations, can hinder this integration.

• Access modalities for equipment

If the presence of equipment is essential, it is indeed their accessibility that will determine their use. The table below illustrates the modalities of access to ICT in the higher education institutions studied:

Access mode	Number of students	Percentage (%)
Free access	30	7.1
Authorization from the administration	292	68.9
Authorization of teachers	101	24.1

Table No. 5: Access Modalities to ICT in Higher Education Institutions

A total of 68.9% of students require administrative approval to use ICT equipment, while 24.1% depend on their teachers' approval. Only 7.1% have free access. Ease of access to the equipment is a determining factor in encouraging its use.

• No internet access at home

Among the students without internet access at home, 15% connect via their neighbors' wifi and 9% use the 4G provided by a relative.

The analysis of the results shows that students are generally active Internet users. However, there are clear distinctions based on both technical and social dimensions. These conclusions align with those of a study by Tamokwe Piaptie, G. (2013), which examined the determinants of Internet access and use in sub-Saharan Africa. According to the same study, it turns out that less than 2% of respondents own a desktop computer at home, while more than 97% of internet users access the internet outside their homes.

Internet accessibility often depends on a country's infrastructure. Out of all the individuals concerned, 75% have access to the internet. Moreover, 15% manage to connect using their neighbors' wifi. As for the remaining 9%, they connect using 4G provided by a relative.

	@if not accessing the internet thru		Total
	4G from a relative	**Neighbors' wifi**	
@ Possession of home connection	**9%**	**15%**	**24%**

Table No. 6: Alternative Internet Access Methods for Students Without Home Connection

This phenomenon can be explained by the notion of the "digital divide," which highlights the inequalities in access to and use of ICT. Kling, R. (1998) identifies two dimensions of this divide: a technical one (infrastructure, hardware, software) and a social one (skills needed to manage these technical resources).

• Frequency of Internet connection

Our survey revealed the connection trends among students. It turns out that 45% of them connect for 4 to 6 hours a day, while 21% spend more than 6 hours browsing online. Moreover, 25.2% of students connect for a duration of 2 to 4 hours, and 9% allocate between 1 and 2 hours. Notably, all the surveyed students claim to connect, with none claiming to never do so.

	Nb	**% cit.**
Never connected	00	00
1-2h	38	9%
2-4h	107	25.2%
4-6h	190	44.8%
≥ 6h	89	21%

Table No. 7: Daily Internet Connection Duration by Students

The trend is similar to that observed in other studies, such as the one conducted by AMSIDDER, A. ; DAGHMI, F. ; & TOUMI, F. (2012) who indicates:

"The Internet habits of Moroccans are not so different from those of the French." Indeed, 54% of the French connect to the Internet at least once a month, and two-thirds of them connect every day, averaging two hours per week (Donnat, 2009). The search for updated information and entertainment, such as movies and music, are the most common activities.

• Training in the use of ICT

The integration of information and communication technologies (ICT) in education depends not only on the available resources but also on the decisions made by educational authorities. The main question is whether the students have received specific training on ICT. The results show that 61% of students claim to have learned to use ICT on their own without formal training. This figure is noteworthy.

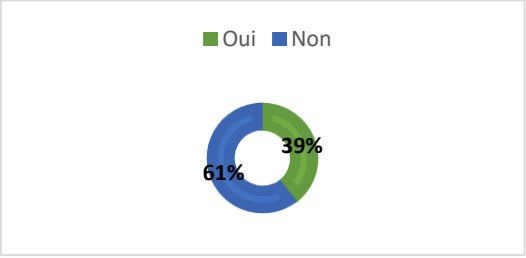

Figure No. 7: Training in the Use of ICT

However, a study by Baron, G-L and Bruillard, E. (2008) indicates that although many young people frequently use ICT, their expertise is often superficial. Only a few engage in creative activities such as programming, creating websites, or blogs. Similar observations have been made in Switzerland. According to a survey by Tissot, S. & Bétrancourt, M. (2018), the FORS 2016 social report highlights that only 20% of young people aged 16 to 29 claimed to have created a blog or a website.

• Level of ICT usage

According to the survey results presented in Table No. 3, 69.3% of the participants declare themselves to be daily users of ICT. Furthermore, 23.3% claim to be regular users, while 6.1% are frequent users and 1.2% are occasional users.

	NB	**% cit.**
Daily user	294	69.3%
Reguler user	99	23.3%
Frequent user	26.1	6.1%
Occasional user	5	1.2%
Non-user	0	0

Table No. 25: Level of ICT Usage

According to Jouët (1993), a "User" is defined as one who commands the machine, which in return imposes on them the technical logic of its user manual. It is worth noting that among the respondents, none identified as "Non-User."

• Use of ICT in the educational context

The dominant use of ICT for writing reports, minutes, and presentations is notable with 118.2% of the responses. This indicates that this modality has become a central element of the learning process for students. Office software such as Word, PowerPoint, and Excel are also widely used, with a prevalence of 74.8%.

Exchanges between students, likely facilitated by online communication and collaboration platforms, as well as the use of digital libraries, were cited by 62% of respondents. Interactive educational activities such as quizzes also register significant usage at 55%.

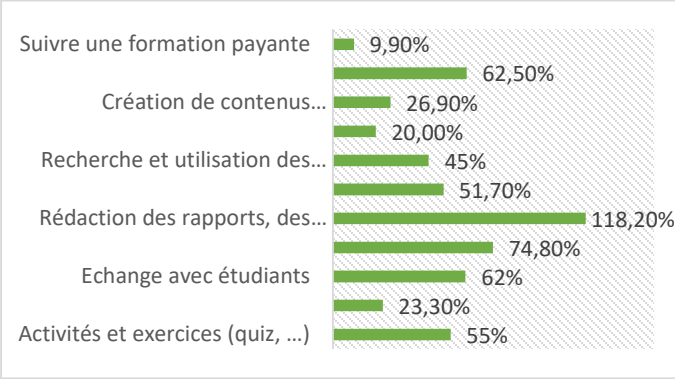

Figure N°32: Context of ICT Use Among Students

Responce	Effective	% cit
Totally agree	46	10.8%
quite agree	41	9.7%
agree	79	18.6%
Not much agreement	47	11.1%
disagree	211	49.8%

Table No. 3: Perceptions of Internet Accessibility

Only 18.6% agree with this statement, and a minority, 10.8%, are firmly convinced that the internet is easily accessible and not exclusively reserved for those with financial resources. III. Discussion of the results Discussion of the results Indeed, the analysis of the collected data indicates that students' social representations of ICT are shaped by a range of cultural, economic, and social influences. It becomes evident that to make ICT accessible and useful, it is not enough to introduce technology into the classrooms. A deep understanding of students' attitudes, beliefs, and values is essential, highlighting the need for pedagogical strategies that recognize and adapt to diverse socio-cultural dynamics. 3.1. Role of the university in the 21st century It is imperative to rethink the role of the university so that it becomes a catalyst for essential skills for the 21st century, such as critical thinking, collaboration, and adaptability. In summary, our results indicate a dissonance between theoretical expectations and practical reality. The trajectory of ICT integration in the Moroccan educational system is hindered by multidimensional challenges. Recognizing these complexities requires a holistic strategy, reconsidering teacher training methodologies, technological integration approaches, and the national educational vision.

3.2. The 'screenic' culture and the diversity of pedagogical tools

The emergence of a generation accustomed to the immediacy and reactivity of digital content is changing academic expectations. However, the predominance of traditional educational materials in our institutions reflects a hesitation, even a resistance, to embrace digital educational resources. IV. Verification of hypotheses Verification of hypotheses Revisiting the premises of our research offers the opportunity not only to confront our hypotheses with the realities on the ground but also to enrich our understanding of a complex educational landscape influenced by ICT.

a. H1: Students' representations would determine their adoption (or rejection) of ICT.

Legros, V.'s (2006) research offers a valuable insight into the changing dynamics of teachers' perceptions at the beginning of their careers. The study highlights the existing tension between the adoption of new technologies and the reconfiguration of teachers' professional identities. This process, far from being linear, involves a constant reevaluation of personal beliefs and pedagogical practices in the context of the digital age.

Regarding students, the data from our quantitative survey confirm that the use of ICT significantly enriches their educational experience. Bobillier-Chaumon, M. (2009) expands on this notion by describing the adoption of ICT as a personal and evolving journey, rooted in individual perceptions. The acceptance and integration of technologies follow a journey of discovery, exploration, and ultimately, acceptance or rejection, highlighting the underlying complexity of this phenomenon.

b. H2: Digital devices would be an asset for the integration of ICT as a tool facilitating teaching/learning at Moroccan universities.

Turning our attention to the second hypothesis, we appreciate the significant impact of digital devices in the educational landscape. The positive responses from our research highlight a consensus among the participants: digital technologies are now indispensable for bringing about significant and progressive change in the spheres of teaching, learning, and research.

By examining the perceived usefulness of ICT, Ansart, P. (2002) and Matthijsainsi, G. (2019) identify these tools as catalysts that transcend traditional methods. They not only facilitate communication and organization but also enrich the learning experience by making content more accessible and stimulating civic engagement, as highlighted by Mastafi, M. (2020).

In summary, this extended discussion validates and reinforces our first hypothesis, demonstrating that representations play a crucial role in the adoption of ICT. Moreover, it establishes a convincing argument for our second hypothesis, presenting digital devices as indispensable catalysts for effective ICT integration. This enriched debate does not merely corroborate existing ideas; it also encourages us to critically reflect on how teachers, students, and institutions can overcome the obstacles to the adoption of ICT.

For students, emphasizing digital literacy is crucial. As noted by Ansart, P. (2002) and Matthijssen, G. (2019), the effectiveness of ICT relies on users' ability to navigate competently in digital environments. The programs should therefore integrate digital training modules, perhaps even certifications, to ensure that students are not only passively exposed to technologies but also become skilled artisans of their own digital journey.

Finally, the engagement of the extended community, highlighted by Mastafi, M. (2020), is an often-overlooked aspect. Partnerships between universities, technology industries, and communities can open new avenues to enrich teaching and learning. Forums, research collaborations, and outreach programs can serve as bridges, transforming higher education into a dynamic community enterprise.
c. H3: The digital divide would be the main obstacle to the adoption and integration of ICT in higher education in Morocco.

The validation of hypothesis H3 highlights the necessity of a multidimensional intervention. It is not enough to have technological tools at one's disposal; a successful educational revolution thru ICT requires equitable access, thorough training, and robust institutional and governmental commitment. The future of higher education in Morocco depends on the ability to embrace this complexity and act with vision and resolve. To move forward, several strategic measures must be considered. First, a national investment is required to improve the technological infrastructure within higher education institutions. This involves adequate funding for modern equipment, maintenance, and high-speed internet services, ensuring that institutions, both urban and rural, are on an equal footing.

Secondly, it is crucial to restructure teacher training programs to include robust and continuous technological education. Digital skills must be considered as fundamental competencies in pedagogical practice, as suggested by Lebrun, M. (2002) and Karsenti, T., & Fiévez, A. (2014). Thirdly, special attention must be given to students' digital literacy. Beyond access, students must be able to navigate, evaluate, and create information using technology. This involves revising the curricula to include courses focused on digital skills and providing platforms where students can practice these skills in a structured setting.

Fourthly, institutions must establish support mechanisms for students and teachers, including technical assistance services, online tutorials, and in-person consultations, to ensure that technical challenges do not hinder the learning process. This approach aligns with the recommendations of Charlier, B., Daele, A., and Deschryver, N. (2002), highlighting the importance of institutional support in the successful adoption of ICT.

In conclusion, the effective adoption and use of ICT in Moroccan higher education go beyond the mere acquisition of technological equipment. They require a holistic and inclusive strategy that addresses existing disparities, redefines pedagogy, and mobilizes institutional and governmental investment. Only a concerted and multisectoral approach can hope to overcome the substantial barriers identified by hypothesis H3, paving the way toward a more equitable and innovative educational future in Morocco.

Conclusion

The results of our research highlight a fundamental truth: the use of ICT in higher education is not limited to the mere provision of technological tools. It is a complex process that requires strategic commitment and thorough consideration of various factors, both human and material.

The major challenge remains the training and support, not only for students but also and especially for teachers. The latter, key players in pedagogical evolution, must be able to navigate the constantly changing digital landscape with ease. This highlights the importance of the initiation and mastery of computer science and new technologies as a central element of training programs, not as a mere complement, but as a fundamental pillar of modern education.

Moreover, the ecosystem in which ICT is deployed must be taken into account. The infrastructures must not only be physically adapted but also support an innovative and inclusive learning culture. This involves stable access to electricity, reliable connectivity, and learning spaces that encourage exploration and collaboration thru technology. The issue of student motivation is also crucial. Without a well-thought-out incentive policy, even the most advanced tools are likely to remain underutilized. By recognizing and rewarding the innovative use of ICT, institutions encourage a culture of excellence and continuous improvement.

It is also imperative to recognize that digital skills go beyond the mastery of certain tools; they represent an essential critical thinking competency in the contemporary world. Education in digital culture is therefore a necessity, preparing students to apply these technologies in broader contexts and to solve concrete problems.

Finally, the responsibility for the successful use of ICT does not rest solely on teachers. This requires a collective effort involving school administrators, decision-makers within the relevant ministries, and the students themselves. Each actor has a role to play to ensure that technologies add tangible value to the educational experience.

References

Akrich, M. (1998). Les utilisateurs, acteurs de l'innovation. *Éducation permanente*. https://halshs.archives-ouvertes.fr/halshs-00082051

Aktouf, O. (1987). *Méthodologie des sciences sociales et approche qualitative des organisations : une introduction à la démarche classique et une critique*. Sillery, Québec : Presses de l'Université du Québec. http://bibliotheque.uqac.uquebec.ca/index.htm

Amsidder, A., Toumi, F., & Youssoufi, K. (2014). Pratique et usage des TIC dans l'université Marocaine : le cas de l'université Ibn Zohr d'Agadir. *sfsic*. https://doi.org/10.13140/RG.2.2.17211.26402

Basque, J. (2005). Une réflexion sur les fonctions attribuées aux TIC en enseignement universitaire. *Revue internationale des technologies en pédagogie universitaire*, *2*(1), 30. https://doi.org/10.18162/ritpu.2005.66

Belfkih, A. M. (2000). La charte nationale d'éducation-formation. *Revue internationale d'éducation de Sèvres*, *27*, 77-87. https://doi.org/10.4000/ries.2383. Consulté le 15 mars 2021.

Ben Youssef, A. (2004). Les quatre dimensions de la fracture numérique. *Réseaux*, *n° 127–128*(5), 181. https://doi.org/10.3917/res.127.0181

Bourdereau, F. (2006). Politique linguistique, politique scolaire : la situation du Maroc. *Le français aujourd'hui*, 154, 25-34. https://doi.org/10.3917/lfa.154.0025

Charlier, B., Deschryver, N., & Pereya, D. (2006). Apprendre en présence et à distance. Une définition des dispositifs hybrides. *Distances et savoirs*, *4*(4), 469-496. https://doi.org/10.3166/ds.4.469-496

Depelteau, F. (2000). La démarche d'une recherche en sciences humaines. *Presses de l'université Laval. Montréal*. Published.

Doueihi, M. (2011). Un humanisme numérique. *Communication & langages*, *2011*(167), 3. https://doi.org/10.4074/s033615001101101x

Idrissi, A. N. (2020). Les TICE au Maroc : entre usage et gestion, cas de l'enseignement du français dans le cycle collégial à Agadir. *Revue IMIST*.

Published.https://revues.imist.ma/index.php/SEMEION_MED/article/download/22281/11960

Karsenti, T., & Collin, S. (2013). TIC et éducation : avantages, défis et perspectives futures. *Éducation et francophonie*, *41*(1), 1. https://doi.org/10.7202/1015056ar

Lebrun, M. (2014). L'hybridation dans l'enseignement supérieur : vers une nouvelle culture de l'évaluation ? *Evaluer. Journal international de Recherche en Education et Formation*. https://fr.slideshare.net/lebrun/admee-2014lebrun

Mastafi, M. (2020). Rôles et impacts des TIC dans l'enseignement et l'apprentissage des mathématiques : perceptions des enseignants du secondaire. *Formation et profession*, *28*(2), 60. https://doi.org/10.18162/fp.2020.508

Peraya, D., & Viens, J. (2005). Culture des acteurs et modèles

d'intervention dans l'innovation technopédagogique. *Revue internationale des technologies en pédagogie universitaire*, *2*(1), 7. https://doi.org/10.18162/ritpu.2005.64

Proulx, S. (Éd.). (2001). *Usages des technologies d'information et de communication : reconsidérer le champ d'étude ?* Actes du XIIe Congrès national des sciences de l'information et de la communication UNESCO (Paris).

Youssoufi, K., Amsidder, A., & Mazegh, M. A. (2016). Les TIC mobiles et la recomposition des frontières entre les sphères de vie professionnelle et privée, quels enjeux pour les cadres marocains - Cas des entreprises d'Agadir. *Revue française des sciences de l'information et de la communication*, *9*. https://doi.org/10.4000/rfsic.2409