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Role of technology in future teachers' training: Case study of ESEFA students, Morocco

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Abstract: This study explores how technology adoption influences the professional development of future teachers at ESEF Agadir, Morocco, examining determinants of technology use within the UTAUT model framework. A qualitative methodology was employed through semi-structured interviews with 32 students from all disciplines (Mathematics, Sciences, French, English, Amazigh, and Primary Education) and study levels. Interviews were analyzed using NVIVO software, combining lexical and thematic analysis within an inductive and constructivist epistemological stance. The analysis reveals that UTAUT determinants—perceived usefulness, perceived effort, social influence, and facilitating conditions—remain central to the intention and actual use of digital technology. However, four contextual dimensions emerge as equally decisive: pedagogical creativity, identity engagement, structural inequalities in resource access, and peer solidarity, significantly shaping the technology appropriation process. While the UTAUT model proves robust in explaining technology adoption, emerging contextual variables highlight the necessity of adapting it to local realities. Technology integration in teacher training cannot be understood solely through universal determinants but must account for cultural, material, and social specificities. These findings underscore the importance of developing teacher training programs that integrate local specificities, promote collaborative learning, address structural inequalities, and leverage pedagogical creativity to optimize support and teacher professionalization in Moroccan educational contexts.

Keywords: *Contextual appropriation, Teacher training, Technology adoption, UTAUT.*

1. Introduction

Initial teacher training in Morocco is evolving in an environment marked by increasing digitalization and reform initiatives aimed at integrating educational technologies into pedagogical practices. At ESEF (Higher School of Education and Training) in Agadir, Morocco, a teacher training institution, the use of digital tools has become a major lever for reinventing learning and the professionalization of future teachers.

This study focuses on how the adoption and actual use of technologies influence the professional development of student teachers. Its objective is to analyze in depth the impact of digital technology on the development of skills, motivation, and autonomy of future teachers at ESEF Agadir, in order to inform and guide training practices toward greater relevance and innovation. Thus, we formulate the following research problem:

1.1. How Does the Use of Technologies Influence the Training of Future Teachers at ESEF Agadir?

To address this problem, we will employ the UTAUT model to answer the following research questions:

Question 1: What are the effects of perceived usefulness, perceived effort, social influence, and facilitating conditions on the intention to use technologies among future teachers at ESEF Agadir?

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This question aims to identify the importance of each determinant of the UTAUT model on usage intention. It helps identify the levers to activate in order to strengthen future teachers' motivation to use technology.

Question 2: To what extent does the intention to use technologies among student teachers at ESEF Agadir translate into the actual use of digital tools in training?

This question examines the transition from intention to action in order to understand whether the willingness to use technologies actually materializes into real usage in training. This sheds light on potential obstacles between intention and practice.

Question 3: How does the actual use of technologies influence the training process and professional development of future teachers at ESEF Agadir?

This question analyzes the influence of technology use on the professional development and learning of future teachers, to grasp the added value of technology in their training and the improvement of their skills.

The methodology adopted for this study is based on a qualitative approach, using semi-structured interviews with students in training at ESEF Agadir, from different disciplines and all three program levels (1st, 2nd, and 3rd year). This choice allows for gathering the diversity of experiences and perceptions related to technology use in training. The analysis followed an inductive and constructivist epistemological stance: categories and concepts were constructed from participants' discourse, without fixed theoretical presuppositions. The interviews, lasting 20 to 30 minutes each, were transcribed and then analyzed using NVIVO software, combining lexical and thematic analysis, to ensure the rigor and interpretive depth recommended in qualitative research.

The structure of this study unfolds in several parts, each responding to a specific objective of analysis and understanding. We begin with a presentation of the issues related to the integration and use of technology in teacher training in Morocco, in order to contextualize the problem within its national and institutional framework. The second part presents the UTAUT model, chosen as the theoretical framework for analyzing the determining factors of technology adoption. The qualitative methodology employed, based on semi-structured interviews and an inductive approach, is detailed in the third section. The fourth section focuses on the content analysis of the interviews, articulating a lexical analysis, centered on the frequency and use of keywords, and a thematic analysis, aimed at identifying the major categories and emerging logics from the field. Finally, the results are discussed in relation to the literature and the specific context of ESEF Agadir, before concluding on the contributions, limitations, and research perspectives to be prioritized.

2. The Integration and Use of Technology in Teacher Training in Morocco

The rapid evolution of information and communication technologies (ICT) has profoundly transformed educational systems on a global scale, prompting Morocco to rethink teacher training to better prepare teachers for the demands of digital pedagogy. Several Moroccan studies emphasize the decisive role of ICT training, both as a tool and as pedagogical content, in the development of teachers' professional competencies. The use of ICT during initial or continuing training promotes the integration of innovative practices, strengthens professional autonomy, and increases the motivation and sense of competency ownership among future teachers [1].

The Covid-19 pandemic accelerated the digitalization of education, revealing both the opportunities and challenges related to the integration of technologies in Moroccan training programs. The literature points to persistent gaps in terms of techno-pedagogical skills, resource availability, and support. Several educational reforms have attempted to consolidate professional development around digital tools, such as the GENIE program, which aims to generalize the use of ICT in schools and in teacher training [2, 3].

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3. The UTAUT Model as an Analytical Framework

To understand the acceptance and actual use of technology by teachers in training, the UTAUT model (Unified Theory of Acceptance and Use of Technology) is often employed as a theoretical framework [4] offers a relevant theoretical framework. This model is regularly used in research to analyze the factors determining the appropriation and use of technological innovations. UTAUT identifies four main determinants: performance expectancy, effort expectancy, social influence, and facilitating conditions. These dimensions help understand why, in various contexts such as Morocco, teachers do or do not integrate digital tools into their training and pedagogical practices.

Results obtained in various educational contexts confirm the relevance of this model: for example, in a study conducted in Malaysia, facilitating conditions (resources and technical/organizational support) and social influence (peer/supervisor pressure) proved decisive in teachers' intention to adopt new technologies in the classroom [5].

In Francophone Africa, using the UTAUT model to analyze the integration of ICT in initial teacher training helps identify levers and barriers to effective adoption. In the Maghreb context and the MENA region, the importance of performance expectancies and educational support is also highlighted by the study of Tolba and Youssef [6] conducted in Saudi Arabia [6]. Furthermore, usage intention constitutes a powerful predictor of actual adoption and use behavior of technologies. According to the UTAUT model, usage intention translates into actual use of technologies [4].

Based on this theoretical foundation, we formulate propositions that will guide our empirical study:

P1: Perceived usefulness (PU) positively influences the intention to use technologies among teachers in training.

P2: Perceived effort (PE) positively influences the intention to use technologies among teachers in training.

P3: Social influence (SI) positively influences the intention to use technologies among teachers in training.

P4: Facilitating conditions (FC) positively influence the intention to use technologies among teachers in training.

P5: The intention to use technologies positively influences the use of technologies.

P6: The use of technologies positively influences teacher training.

Thus, we develop our initial conceptual model.

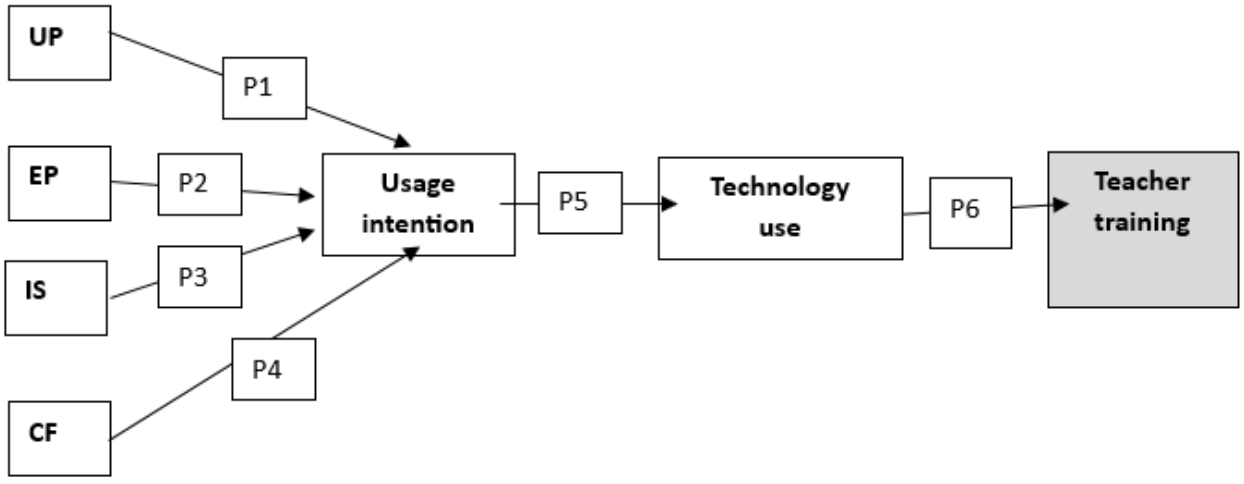

Figure 1.
Our initial conceptual model.

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4. Methodology

Our study is based on a qualitative approach, grounded in semi-structured interviews conducted with students in training at ESEF Agadir to become teachers, across all disciplines (Mathematics, Sciences, French, English, Amazigh, and primary education). The participants, both men and women, come from all three levels of the training program (1st, 2nd, and 3rd year), which allows coverage of the entire professionalization pathway. Each interview, lasting 20 to 30 minutes, was conducted using a guide specifically designed to explore experiences of digital integration, perceptions of benefits, obstacles encountered, the influence of the training environment, and the anticipated impact on their future profession. This approach ensures rich data while allowing the emergence of new and contextualized logics. We obtained their consent for their responses to be used in this study.

The epistemological stance adopted is inductive and constructivist: we consider that knowledge about ICT integration in training is constructed from the discourse and concrete experiences of participants [7, 8].

This positioning favors the discovery of categories and a fine-grained understanding of the phenomena studied, free from strict theoretical presuppositions. Respondent anonymity was strictly maintained in accordance with the ethical standards of qualitative research to encourage sincerity and depth in responses [9, 10].

After collection, all interviews were carefully transcribed to ensure the fidelity and accuracy of the verbal data gathered. The verbatims were then imported into the NVivo qualitative analysis software, recognized for its robustness in processing textual data [11]. The analysis combined a lexical approach, allowing identification of the frequency and use of keywords revealing representations, and a thematic analysis aimed at identifying and structuring the major axes and emerging categories of discourse. This methodological choice ensures triangulation of analytical techniques and increases interpretive validity, in accordance with recommended practices in qualitative research [12].

5. Content Analysis

The lexical analysis, conducted using NVIVO, allows the identification of the keywords and expressions most frequently used by participants, thereby revealing the dominant representations related to digital use in training. This lexical mapping constitutes a first exploration of the collected corpus. In addition, the thematic analysis aims to group and structure the discourse around major significant axes and emerging categories from the field. This dual approach promotes both a fine-grained and comprehensive understanding of the logics of technology appropriation by future teachers.

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Table 1.
List of the 20 most cited words in the interviews.

Word	Number	Weighted percentage (%)
Technology	152	1.29
Digital	148	1.26
Really	141	1.20
Tools	138	1.17
Resources	127	1.08
Teaching	95	0.81
Training	92	0.78
Access	88	0.75
Create	86	0.73
Support	77	0.65
Educational	68	0.58
Students	68	0.58
Perceived	64	0.54
Videos	64	0.54
Online	55	0.47
Placements	55	0.47
Applications	52	0.44
Become	51	0.43
Language	50	0.42
Interactive	48	0.41

5.1. Lexical Analysis

The qualitative interviews were imported into NVIVO software to perform content analysis. To generate word frequency with NVIVO, a specific configuration was adopted: only the top 20 most cited words were retained, in order to limit the list to significant and representative terms of the corpus. Additionally, the minimum word length was set at five letters to exclude short prepositions and articles such as "le," "la," "les," "dans," etc. This parameter setting allows the analysis to focus on the central concepts in participants' discourse. Below is the table of the 20 most cited words by interview participants:

The examination of frequencies shows that the most repeated words are "technology" (152 occurrences), "digital," "really," "tools," and "resources." This reflects a marked interest in digital innovation and technological tools in the context studied. The terms "teaching," "training," "access," and "create" highlight the importance of educational processes, continuing education, and resource creation. Words like "support," "educational," and "students" signal the place of pedagogical support and learner assistance. The appearance of "perceived," "videos," "online," "placement," "applications," "become," "language," and "interactive" confirms the diversity of themes addressed, particularly online learning, interactivity, and the use of videos or educational applications. The totality of these results thus testifies to a dominance of topics related to technology, pedagogy, and digital teaching in the interviews analyzed.

As with the previous analysis, NVIVO software was configured to consider up to 1000 words (default setting), and by setting a minimum length of five letters.

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Figure 2.
Word cloud.

The technical choice aims to target meaningful terms while excluding function words and prepositions, thus allowing better highlighting of central concepts related to the use of technologies in the training of future teachers at ESEF Agadir.

5.1.1. Analysis by Word Size and Centrality

The words displayed in larger size and placed at the center of the cloud are those that appear most frequently in the interviews: "technology," "digital," "really," "tools," "resources," "training," "teaching," "access," and "create." This indicates that the discourse is strongly oriented around digital technology, tools, and resources, in direct connection with our research problem.

5.1.2. Spatial Analysis (Word Position)

- Center: The central words (e.g., "technology," "digital," "tools") reflect the central axis of the discourse: the omnipresence of digital technology, the usefulness of tools, and the notion of resources, consistent with the analysis of perceived usefulness and facilitating conditions (Question 1).
- Top and sides: We find words such as "perceptions," "experiences," "learning," "motivation," or "applications," which refer to social influence, perceptions, and motivation, extending the analysis of factors present in the UTAUT model and questioning how motivation (and its absence) modulates usage intention (Questions 1 and 2).

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- Bottom and periphery: Words such as "activities," "context," "professional," and "environments" highlight the diversity of usage contexts and the dimension of professional development expected through digital integration (Question 3).

5.1.3. Color Analysis

- Light blue and dark blue: These colors draw the eye to the most frequent words at the center: "technology," "tools," "really," "teaching," "access," etc. They signal the importance and recurrence of these notions in the corpus, particularly for determinants and actual uses (Questions 1 and 2).
- Orange and brown: Used primarily for "digital," "resources," "training," "support," "applications," "environment," they highlight complementary axes: support, training, the digital environment, and concrete applications. These words resonate with the facilitation aspect, access conditions, support, and creation of added value, which echoes both actual use and its training impacts (Questions 2 and 3).

The word cloud confirms that the use of technology, its utilitarian perception, and contextual levers, as well as related pedagogical processes, are at the heart of the concerns collected. The dimensions of intention, actual use, and professional impact are all illustrated by the salient words, thus validating the relevance of the UTAUT model and our research axes for understanding practices and obstacles to pedagogical digitalization at ESEF Agadir.

5.2. Thematic Analysis

Our thematic analysis is based on responses from the interview corpus to examine the concepts of the UTAUT model represented by our initial conceptual model, while highlighting convergences and divergences in participants' statements. Citations are faithfully attributed to respondents to ensure authenticity and diversity of experiences.

5.2.1. Perceived Usefulness (PU)

Regarding usefulness, testimonies converge to emphasize that technology provides unparalleled access to diverse resources, enriches pedagogical practices, and makes learning more concrete. For example, "I find that it allows me to access many resources that would be impossible to find otherwise, and to better visualize how it works in the classroom" (respondent 1) aligns with the idea of "the main advantage is being able to demonstrate dynamics, it's much more meaningful than a drawing on the board" (respondent 2). Others, like respondent 16, a teacher in training in the Amazigh language, see it as a tool for cultural valorization: "I can create my own resources, record tales, film traditions." However, while motivation and intention are generally supported by recognition of usefulness, some qualify this ("it motivates [...] but sometimes I feel overwhelmed by everything I need to master," respondent 2), or emphasize the burden of additional work, particularly for less-resourced fields like Amazigh.

5.2.2. Perceived Effort (PE)

Regarding effort, initial adaptation remains difficult for many: "at the beginning, Moodle [...] I didn't know where to find the documents, but after a few weeks, it got better" (respondent 1); "GeoGebra, at first, it was really complicated" (respondent 2). Ease of use comes with practice, but the cognitive load of new tools, the language of software, or lack of guidance hinders some ("software only in English makes it more difficult to learn," respondent 18). Limited material resources (slow computers, unstable internet connections) are also sources of frustration (respondent 13). These difficulties do not prevent progress: many participants affirm having gained proficiency over time, especially through peer support or self-training.

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5.2.3. Social Influence (SI)

Regarding social influence, a large majority affirm being actively supported by teachers and peers. "My professors encourage us a lot" (respondent 1), "our teachers insist that it's the future of teaching" (respondent 17), "we share a lot on WhatsApp" (respondent 3), illustrate this climate. But there are also contrary reservations: "Some colleagues prefer traditional methods; they find technology too complicated" (respondent 2). The intensity of influence, therefore, varies according to disciplines and personal resistances.

5.2.4. Facilitating Conditions (FC)

The diversity of access to tools and support generates contrasting trajectories. Several point to obstacles: "the computer lab is often overcrowded, some computers are broken, not all students have their own PCs, the Wi-Fi cuts out" (respondent 1), "I often have to create the entire resource in Amazigh language myself" (respondent 7).

Institutional training efforts are appreciated but are sometimes judged to be too theoretical or insufficient (respondent 6: "we need more practical workshops and real follow-up"). Some individuals who are better equipped mention fewer material constraints, but all call for more technical support and resources adapted to the real field context.

5.2.5. Usage Intention

Many affirm that the intention to integrate digital technology has become reflexive in their practice: "I no longer prepare my lessons without thinking about digital tools" (respondent 9), "I always start by searching for online resources" (respondent 5). However, this intention is modulated by context: it translates more into action when means and confidence are combined, but can be hindered in unfavorable situations.

5.2.6. Actual Use

Most students move from intention to practice, but with necessary adaptations: "I create interactive resources, but during internship I sometimes have to modify everything because there's no projector" (respondent 9). Others invent solutions to compensate for a lack of equipment; some occasionally switch to paper or old formats when conditions require it (respondent 8, "I also use paper when there are constraints"). There is thus a convergence on the general desire to use technology, but a divergence on the real possibility of doing so everywhere.

5.2.7. Impact on Training

The impact on the training pathway manifests in a consensual but nuanced way. Many emphasize the acquisition of skills, creativity, confidence, and professional modernity: "I feel more modern, capable of adapting my lessons" (respondent 3). For some, it is also a source of collective emulation ("I see that I am not alone in searching for solutions," respondent 17).

However, disciplines confronted with a lack of resources or work overload, such as the Amazigh language, report notable progress in autonomy and improvisation, but also frustrations or weariness ("I have to invent everything myself, sometimes it's discouraging," respondent 7).

5.2.8. Emerging Variables

Beyond the concepts of the UTAUT model, several new variables and elements clearly emerge from the interviews conducted.

5.2.9. Creativity and Pedagogical Innovation

Creativity, stimulated by the need to compensate for a lack of resources, plays an essential role in teacher training at ESEF. Situations where one must "invent everything oneself" (respondent 7) push future teachers to design original materials and explore various digital tools. This dynamic enables

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continuous improvement of pedagogical practices and encourages proactivity, as respondent 31 expresses: "I have developed real expertise in creating digital resources."

5.2.10. Identity Engagement and Social Mission

In disciplines like Amazigh, technology becomes a tool for cultural valorization and a genuine social mission. Testimonies such as "contributing to the modernization of Amazigh" (respondent 25) or "digitizing narratives so they don't disappear" (respondent 23) show that training goes beyond mere technical acquisition: it is anchored in a professional approach carrying values and strengthens future teachers' motivation to become actors in their community.

5.2.11. Structural Inequalities and Adaptation

Inequalities in resources and access force teachers in training to develop resourcefulness and adaptability. Confronted with concrete obstacles, they anticipate difficulties: "I always plan a plan B in case [...]" (respondent 8). This necessity for adaptation fosters the development of key competencies, such as resilience and managing unforeseen circumstances in the field.

5.2.12. Peer Solidarity and Mutual Support

Solidarity among students largely compensates for the lack of institutional support, transforming training into a space for collective learning. Mutual assistance ("we created a shared library [...] it's indispensable," respondent 16; "We support each other, we adapt, we share everything," respondent 23) promotes skill development and multiplies opportunities for informal learning. This mutual support strengthens the sense of belonging and motivation to sustainably integrate technology into pedagogical practices.

We can deduce from our analyses that creativity and pedagogical innovation (PI) reinforce PU by valorizing experimentation and personalization of learning. Identity engagement acts as a driver of usage intention, particularly in contexts where technology becomes a cultural or social vector.

Structural inequalities, such as disparities in access to equipment, infrastructure, and pedagogical resources, act as external factors that modify the quality and effectiveness of FC. Rather than forming an independent, direct relationship, these inequalities should be considered as moderating the effect of FC on usage intention and, potentially, on actual use.

Peer solidarity compensates for institutional weaknesses and supports adoption, thus reinforcing positive SI and collective confidence.

In light of the results of our qualitative analyses, it appears necessary to enrich and improve our initial conceptual model. It must now integrate the relationships highlighted between the variables of the UTAUT model and emerging contextual factors such as structural inequalities, peer solidarity, creativity and pedagogical innovation, and the sense of identity engagement. This evolution would allow better representation of the real dynamics observed in the field and offer a more refined and nuanced understanding of the adoption and influence of educational technologies among teachers in training at ESEF Agadir.

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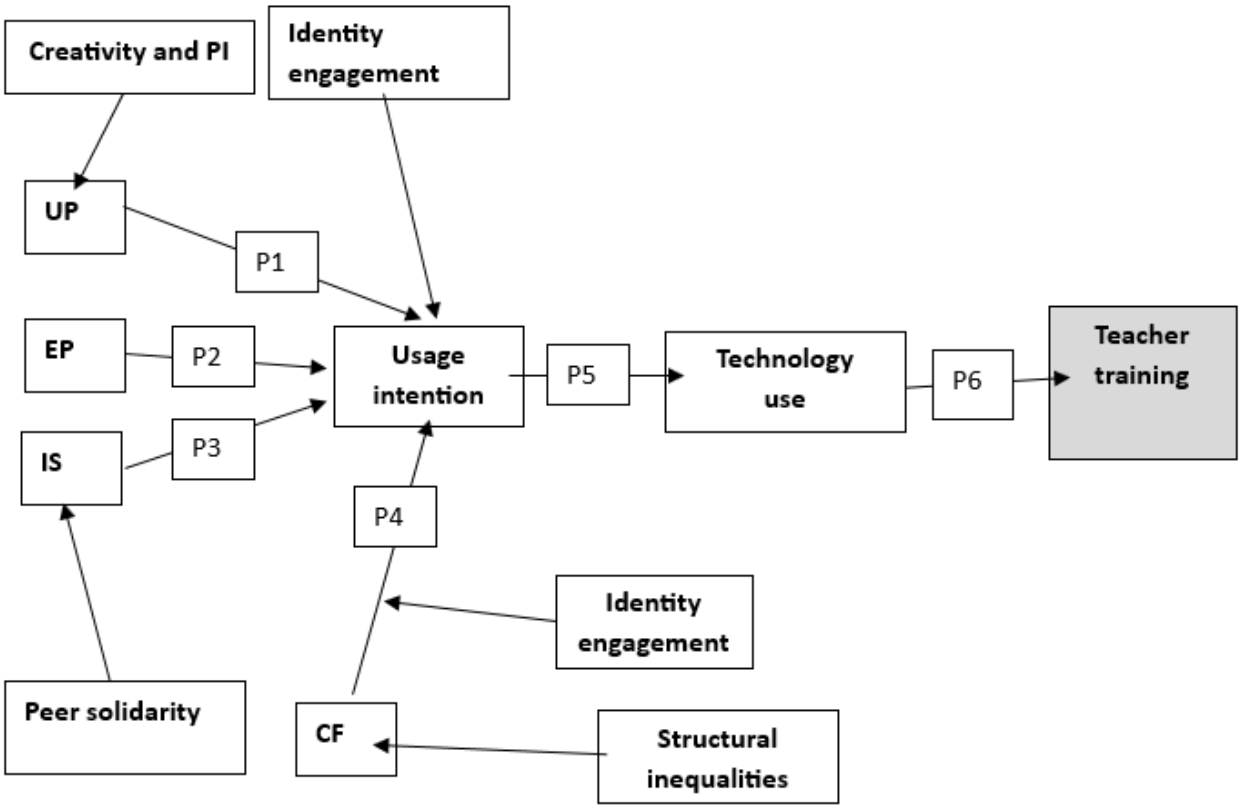

Figure 3.
Conceptual model of educational technology adoption: integration of UTAUT and contextual factors at ESEF Agadir.

The multiple interactions represented by our new conceptual model above invite us, in the upcoming discussion, to move beyond a linear reading of the model and to interpret the empirical results in light of contextual complexity, group dynamics, and individual trajectories that emerge from the field.

6. Discussion of Results

Our results confirm, first and foremost, the robustness of the UTAUT model for explaining the intention and actual use of educational technologies by teachers in training at ESEF Agadir. Similar to Yousfi and Yousfi [1] and the foundations of Venkatesh et al. [4], perceived usefulness, perceived effort, social influence, and facilitating conditions emerge, in our interviews, as essential determinants of acceptance and adoption of digital technology in pedagogical training. These convergences with the literature are reinforced by the contributions of Ab Jalil et al. [5], who demonstrate the importance of positive pressure exerted by the academic or institutional environment on ICT integration in teachers' professional practice.

However, our interviews reveal elements that enrich the understanding of the adoption process and nuance certain aspects of the model. First, creativity and pedagogical innovation take a central place: Faced with a lack of resources, future teachers develop adaptation, invention, and digital creation skills, thus aligning with the analyses of Mishra and Koehler [13] on the importance of TPACK, initially called TPCK (Technological Pedagogical Content Knowledge), and defined by these authors as a form of emergent knowledge that goes beyond the three isolated components: content, pedagogy, and technology and Laurillard [14] on pedagogical innovation through digital technology, but little discussed in applications of the UTAUT model to Moroccan education. This creativity is often driven

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by a constraining context, confirming the findings of McKnight et al. [15] on the positive effects of digitally poor contexts in terms of pedagogical ingenuity.

Moreover, our study highlights identity engagement and the social mission associated with digital use, especially in the Amazigh discipline. Identity commitment (or commitment) is central to identity theory, involving the formation of personal and definitive choices regarding values and norms [16]. Identity engagement modulates the relationship between facilitating conditions and usage intention. This dimension, absent or marginal in the literature on technology acceptance, appears in our study as a powerful driver of appropriation, not only to meet a functional need but also to defend, transmit, and valorize a culture. These results corroborate the work of Warschauer [17] and Canagarajah [18] on the use of ICT for minority languages and cultures.

Furthermore, as income inequality is identified as a key obstacle and a pivotal hurdle to the widespread adoption of the Internet and the achievement of objectives [19], structural inequalities in terms of resources, equipment, internet access, or geographic disparities are experienced as major barriers that affect the actual scope of facilitating conditions, making the intention to use sometimes inapplicable in practice as Trucano [20]1 and Bingimlas [21] in African contexts with a strong digital divide, unlike some international studies that minimize the effect of these disparities in favor of individual factors, our study confirms the importance of taking them into account in any integration strategy.

Collaboration stimulates the seizing of opportunities [22]. Moreover, collaboration and peer interaction are fundamental mechanisms that facilitate learning, engagement, and the acquisition of essential collective skills [22]. In this vein, peer solidarity and mutual support emerge as essential levers for collective training and appropriation. This collaborative dynamic, well identified by Damsa [23] and Laurillard [14], remains insufficiently discussed within the UTAUT model framework. It transforms training into a space of mutual support, compensates for the lack of institutional guidance, and promotes the development of professional competencies in a peer learning context.

The synthesis of our results is presented in table form to highlight the convergences and divergences between our study and the scientific literature.

Table 2.
Synthesis of results.

Dimension	Convergences with the literature	Divergences with the literature
Perceived usefulness	Yousfi and Yousfi [1], Venkatesh et al. [4] and Ab Jalil et al. [5]	—
Perceived effort	Venkatesh et al. [4], Yousfi and Yousfi [1], and Tolba and Youssef [6]	—
Social influence	Venkatesh et al. [4], Ab Jalil et al. [5], and Tolba and Youssef [6]	Limited consideration of mutual support and solidarity [14, 23]
Facilitating conditions	Venkatesh et al. [4], Ab Jalil et al. [5] and Berdi et al. [2]	Underestimation of structural inequalities [20, 21]
Creativity and pedagogical innovation	Mishra and Koehler [13], McKnight et al. [15], and Laurillard [14]	Little present in UTAUT/classical technology acceptance
Identity engagement and social mission	Warschauer [17] and Canagarajah [18]	Absent from classical models like UTAUT
Structural inequalities	Trucano [20], Abouserie et al. [24] and Berdi et al. [2]	Venkatesh et al. [4] and Ab Jalil et al. [5] (an aspect little addressed)
Peer solidarity and mutual support	Laurillard [14] and Damşa [23]	Absent in UTAUT and most acceptance models

We deduce that while the essential relationships represented by the UTAUT model are validated in our study, the emerging variables (creativity, identity engagement, structural inequalities, and peer

[1] https://www.worldbank.org/en/news/feature/2020/10/26/closing-the-digital-divide-a-time-to-stay-connected consulted on 19/10/2025

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solidarity) provide major contextual insights and invite an evolution of the theoretical model to better adapt to the reality of the Moroccan field.

7. Conclusion

In the context of accelerated digitalization of education in Morocco and the evolution of initial teacher training programs, our study aims to understand how the determinants of technology adoption influence the training of future teachers at ESEF Agadir. The central research problem is stated as follows: To what extent do the determinants of technology use influence the use of technology in the training of future teachers at ESEF Agadir?

Three research questions structure this approach:

- What are the effects of perceived usefulness, perceived effort, social influence, and facilitating conditions on the intention to use technologies among future teachers at ESEF Agadir? This question aims to specify the importance of each determinant of the UTAUT model and to identify motivation levers.
- To what extent does the intention to use technologies translate into actual use of digital tools in training? This question sheds light on the transition from intention to action and potential obstacles.
- How does the actual use of technologies influence the training process and professional development of future teachers? This involves understanding the added value of technology and its impact on professional competencies.

To this end, we employed a qualitative methodology, based on semi-structured interviews with students in training at ESEF Agadir (mathematics, sciences, French, English, Amazigh, primary education), from all three years of the program, both men and women. The interview guide explores the experience of digital technology, perceptions of benefits, difficulties, the environment, and professional impact.

The main results confirm the relevance of the UTAUT model: the classical determinants (perceived usefulness, perceived effort, social influence, facilitating conditions) play a central role in the intention and actual use of technologies. However, new factors emerge from the field, such as pedagogical creativity, identity engagement, structural inequalities in access, and peer solidarity, enriching the understanding of the adoption process and inviting local adaptation of the model. These results provide scientific insight into the reality of teacher training at ESEF Agadir, while emphasizing the need to develop more equitable, collaborative, and contextualized programs.

Methodologically, our study has certain limitations: the qualitative choice and restriction of the field to ESEF Agadir limit the generalizability of results. Research perspectives invite expanding the field to other institutions, diversifying methods (for example, focus groups according to Morgan [25], cross-interviews), and using a quantitative approach to test our hypotheses and validate the proposed conceptual model [26].

From a theoretical perspective, this study contributes to enriching the UTAUT model by integrating contextual and creative dimensions, while on a practical level, it suggests pathways to inform teacher training policies and support for pedagogical innovation in Moroccan institutions. This work thus lays the groundwork for reimagining educational technology integration, adapted to field realities and conducive to professional development.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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