Taking the Wave of Digitalization: Reflection on the Psychological Readiness of Teachers in Using Information and Communication Technologies

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Abstract
Considering the brainwave of the psychological approach for the use of Information and Communication Technology (ICT), collaboration, expectation, and motivation have been identified as the aspects of readiness for integrating technology into the teaching strategies. Studies have investigated the integration of ICTs in the teaching/learning process; still there is a lack of research probing the significance of the psychological readiness of teachers on their perceptions about utilizing ICTs in the Algerian EFL context. The research, between hands, aspires to bridge the gaps, reveal the significant obstacles; and barriers encountered while exploring ICTs, and investigate the following query: What are the significant psychological obstacles that might prevent the effective implementation of ICTs? A mixed-method design was used in this research, employing a survey questionnaire and semi-structured interview to collect data from thirty- five EFL teachers at the University of Mohammed Ben Ahmed in Oran; Algeria. Participant teachers reveal a satisfactory willingness for using education technologies. Lack of training, insufficient ICT skills, technology anxiety, resistance to change, and no perception of benefits were the major psychological obstacles reported by the informants. To perk up the digital proficiencies of teachers, to train them to utilize ICTs, and to explore the potential of ICTs were highly recommended to rouse in teachers, the emotional readiness to implement Information Technologies.

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Introduction

In the age of digitalization, the use of Information and Communications Technology (ICT) in the context of foreign language teaching and learning is essential to facilitate the process of language learning, and the acquisition of 21st-century skills. ICT revolutionizes the teaching/ learning environment, and modernizes the teaching experience of instructors in their role as makers of educational settings. The objective behind incorporating Information Technologies is to develop and enhance the teaching materials, making them understandable and engaging to students at any level of the pedagogical prospectus.

New challenges for teachers are associated with the self-reliant creation and evolution of the learning content, and the adaptation of this later in the structure of varied virtualized options in the ICT plan. Internal and external factors may significantly impede ICT integration, negatively affecting teachers' psychological readiness and willingness to face the challenge. It is critical to investigate the components of psychological readiness of teachers to uncover the significant barriers that may prevent them from accepting novelties and effectively coping with the demands of the digital world.

On this basis, the major problem is the imbalance between the effective implementation of novelties in learning environments, and the deficiency of psychological willingness to take part in innovation readily. Being internally reluctant to explore the innovative technologies of teaching, teachers would deliberately develop a psychological barrier that could prevent them from perceiving the merits of ICTs and, thus, refuse the change brought in education. The broad potential of structuring the psychological preparedness lies in the fact that teachers would have positive attitudes toward implementing ICTs only if they are psychologically ready to raise the defy and adapt quickly to the prevailing changes.

Though several studies have probed the integration of ICTs in the teaching/learning process, only a few types of research have investigated the impact of the psychological readiness of teachers on their attitudes about using ICTs in their classroom instruction. With positive attitudes toward implementing ICTs, EFL teachers would be emotionally prepared to cope with the current alterations. This research attempts to explore the following question:

➢ What are the significant psychological obstacles that might prevent the effective implementation of ICTs?

The current research intends to underline the psychological strategy about the readiness of teachers to use ICTs to bridge the gaps, and deal with the challenges encountered while exploring the innovative teaching strategies.

Literature Review

Towards a Technology Shift: Major Merits and Challenges

With the implementation of Information and Communication Technologies in education, a significant change has been perceived in the instructive role of the teachers (Petrova, 2016). It is, hence, essential to comprehend the psychological attitudes of teachers toward exploiting new technologies. According to García-Valcárcel and Mena (2021), ICTs are frequently employed as powerful instruments to endorse cooperative learning among learners, and teachers. The

integration of ICTs enables teachers to give assignments, find solutions, surmount difficulties, or invent platforms and online learning applications (Ghounane, 2020).

Studies investigate the potential, and the promising advantages of ICTs to perk up the quality of education, as development in ICTs is both reason and a result of globalization (Hrehova&Teplická, 2020).According to Kent (2004), ICT refers to "Information and Communication Technology such as computers, communications facilities, and features that variously support teaching-learning, and a range of activities in education" (QCA schemes of work for ICT in Kent country council, 2004, p.1).

Besides, Batool, Kazmi, Islam, and Nawaz(2021) argued that the psychological preparation of teachers to employ ICTs has to be supervised by specialists in education. Michaeli, Kroparo, and Hershkovitz(2020)noted that education technologies are the best way to display data to various stakeholders to visualize the concept of the online learning environment. Educational technology devices comprise some types of visual aids that hearten teachers to consider and assist the motivational attitudes and behaviors of students. In a digital world, training teachers to pilot their perceptions and attitudes are more likely to develop their e-competencies and self-confidence. It is beneficial for teachers, and students to have positive perceptions and attitudes toward innovative education technologies (Benmansour, 2021).

The course outline for teachers should bring up-to-date ICT awareness, employing an all-inclusive psychological strategy. According to Rani (2017), considering the implementation of technology in the teaching/learning process, teachers must develop the knowledge and competencies compulsory to utilize ICT in their classroom instruction. Oralbekova, Begalieva, Ortaeva, Magauova, and Suleimen(2021)indicate that it is significant to develop the readiness and willingness of pre-service teachers to use Information Technologies in comprehensive pedagogy and learning.

It is significant to highlight the importance of developing the digital proficiencies of students in the new horizon of technologies. Trans-media technology, in this perspective, as described by Havrilova, Oriekhova, Beskorsa, Churikova-Kushnir, and Sofronii,(2021) is a recent inventive plan, which scientists deem the actual communication revolt. Letendre(2017), in this perspective, put ICT in the concept of world culture and educational psychology.

 Selwyn (2010) believes that the correlations between pedagogy and technology are contentious and suggests an effective strategy to go further than wondering if a given technology is effective or not. Researchers like Barak (2016), Perrotta (2017), and Saunders (2013) point out the prevalence of the emotional and social components of teachers when incorporating ICTs in their teaching practices. The use of technology in the teaching and learning process cannot uniquely consider the efficiency of digital competencies (Paraskeva, Bouta, &Papagianni, 2008), but other social and cognitive facets such as readiness, and anticipations, beliefs, perceptions, and attitudes of teachers. Besides, motivation, and enthusiasm should be considered (Tondeur, van Braak, &Ertmer, 2016).

Psychological Attitudes between Raising the Challenge and Resisting the Change

With the emergence of computers affecting nearly all aspects of life, the education sphere also lives a paradigm shift to online learning. Decision-makers and education experts envisage aspirations to perceive a turning point in teaching and learning. Alvarado, Aragón, and Bretones(2020)stated that teachers and students are more engaged when appealing and adequate technology tools are used. General assumptions from the findings are that more particular endorsement, backing and prospects must be provided to boost teachers' motivation and ,thus, perk up their attitudes and aptitudes to implement ICT in teaching (Fernández-Cruz &Fernández-Díaz,2016). Letendre (2017) inspected technology use and reported that the perceptions and readiness of teachers to use technology were essential factors. In a study by Ammani and Aparanjani (2016), it is stated that "because of its interactive and dynamic nature, ICT has the stamina to meet the needs of the individual student by providing opportunities to direct their learning and to pursue information" (p. 2). It seems that ICTs are meant to support the learning content, and stimulate the creative thinking about the curriculum.

Many studies like those of Batool, Kazmi, Islam, and Nawaz (2021) investigated the readiness of pre-service teachers to use educational technologies. It is also critical to mull over the factors hamper this technological alteration. Perienen(2020) described significant teaching changes, and Creswel and Creswell (2018)brought up the low-level use, whereby some fundamental processes like Internet information exploration, presentation programs and other application programs, are inserted into classroom instruction.

Conversely, the shift to technological alterations will bring about an overload in duties and anxieties. Thus, the process of ICT integration would be associated with negative impressions of perceptions that would result in the attitudes of rejection and opposition (Yu, Lin, & Liao 2017).New ICTs cause an overloaded working time for instructors, such as encountering an incessant need for documents, additional virtual seminars, and more regular online classes with students, which negatively impacting their energy and enthusiasm (Ballet &Kelchtermans 2008). Deepti and Chandraka(2021) stated that:

> Most of the students use the android mobile device for online learning. [...] they also require a good internet connection or sufficient mobile internet data. Downloading various study materials require massive mobile internet data. [....] every student can't have enough internet data. It creates a financial burden on these families and thereby on students. (p. 2)

Some researchers like Addas and Pinsonneault(2015) consider that interruptions unconstructively impact task performance, and cause cognitive overload. Another difficulty students meet in e-learning is a lack of comprehending the content taught in distant classes.Deepti and Chandraka(2021) reported: " Time length of the online courses also affects the concentration level of students. They face difficulties in accomplishing their online assignments". (p. 2)

Moreover, technical breakdowns (such as instant messages, emails, etc.), and didactic demands for information may contract, and reduce teaching production. Externally compelled classroom disruptions have some bearing on the learning environment (Leonard, 2001). Those

unconstructive attitudes will result in negative feelings of stress and anxiety (Joo, Lim, &Kim, 2016).

Nowadays, there are rising demands on teachers and education experts to explore the advantages of ICTs to bridge education gaps. The viaduct to the teaching environment, perceptions, and level of competencies teachers have about technology will affect its implementation in the class (Jena, 2015). Selivanova et al. (2020) considered that teachers, in modernized teaching-learning settings, need to be trained to adapt their teaching materials to the new demands of e-learning, and facilitate the comprehension and understanding of content. With unique competencies teachers need to upgrade and master, there is a personal conviction about the effectiveness of the technology (Hidayah, 2015).

Harris, Harris, and Jena (2015) unveiled that beliefs and perceptions of teachers are crucial in shaping significant attitudes and outlooks about technology integration. Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, and Sendurur (2012) advocated that attitudes of teachers about technology greatly impacted their ICT implementation than some contextual issues. She also revealed that when incorporating technology into their syllabus design, teachers' attempts are usually fettered by external (first-order) and internal (second-order) obstacles. First-order obstacles involve the acquisition of digital competencies essential to the use of computers. Second-order barriers apply the teaching strategies of technology incorporation. The significant barriers that lead to negative attitudes among teachers involve technology anxiety, the fear of technical breakdowns, and lack of training (Al-fudailand Mellar(2008), Currie and Eveline (2011), Harris, et al. (2015)&Joo, et. (2016).

Livingstone (2012) considered that ICT integration had afforded revolutionary learning opportunities centered on technology creativeness, collaborative communication fuelled by an emotional willingness, and psychological readiness of teachers. Selwyn (2010) considered that the relations between education and technology still needs investigation, and suggests a critical approach to go further than merely asking if a particular technology works technically.

The implementation of ICTs during the last decades has created crucial advantages by providing innovative learning opportunities based on digital creativity and collaborative communication (Livingstone, 2012). Harmer(2007) stated, "a word innovation means something new, which means new ideas to change things for better"(p.2).He added : "If we look at all the language teaching methods [used] by different teachers [..], we cannot say that all of them are 100% successful. It is essential to keep looking and searching to find ways to make teaching and learning better"(p.2).ICTs have led to fundamental changes in teaching/learning (Almashi, 2019).

Research Design and Methodology

A mixed-method research plan was adopted. Through the mixed-method design, this study started with a quantitative approach and finished with a qualitative approach, wherein the quantitative was more underlined than the qualitative to scrutinize the study's objectives (Creswell& Creswell, 2018).

Instrumentation

A survey questionnaire and semi-structured interview were used. The questionnaire aids in collecting quantitative data, and examining the psychological attitudes of EFL teachers when using ICTs. Using the questionnaire is highly beneficial as it supports the researcher in underlining the significant internal and external psychological barriers to ICT integration. The use of the interview, on the other hand, is meant to collect qualitative data about the perspectives of participant teachers and the use of ICTs in their classroom instruction. The fluent nature of the interview makes the researcher, involved in the study, eager to report the perceptions and voices of the interviewees efficiently and effectively.

The participants of this study were a sample of thirty-five (n = 35) Algerian EFL in-service teachers from Mohammed Ben Ahmed university in Oran, Algeria. They were teaching modules like literature, civilization, oral expression, and psychology of education for the license, and master's students in the English language department at the University of Oran2; during the first semester of the academic year 2021-2022. Informants had, at minimum, 06 years of teaching experience. Amid 35 participants, 20 were females (57.1%), and 15 were males (42.8%) teaching as full-time teachers in the department of English. Average age of the teachers was about 47. Selection of participants was based on a random sampling technique. Participants were selected because they used ICTs in their teaching practices, mainly with the shift to online learning during the pandemic.

For soliciting the readiness of EFL teachers to implement ICTs, and the significant obstacles that interfere in the process of the implementation, both quantitative (survey questionnaire) and qualitative (semi-structured interview) data collection instruments were employed. The survey questionnaire data were gathered and examined. Then, the interview data were collected, and reviewed for developing quantitative results. Before collecting information, a pilot test was performed to ensure the validity and reliability of the items. The interview procedure, the selection of the participant teachers was based on their teaching profiles, where ICT tools were utilized in classroom instructions.

Eight EFL teachers (05 females and 03 males) participated in the interview, which took around 15 to 20 minutes .The interview data were analyzed to treat the following themes: availability, competencies, and obstacles to using ICTs that were highlighted for developing an in-depth comprehension of the findings from the survey analysis.

Data Presentation and Analysis
The Questionnaire

To take the wave of digitalization, and cope with the demands of education nowadays, it deems critical for teachers to introduce ICTs in their didactic approaches, and adapt their teaching strategies according to the new learning conditions. Though they seem reluctant to leave their comfort zone, teachers should handle the situation by exploring innovative education technologies, developing ICT skills, and challenging their fears and resistance. Table one gives an idea about ICT tools used by EFL teachers:

Table1. *ICT tools*

ICT tools	%
Internet	85%
WIFI	70%
Social applications	35%
Google	80%
YouTube	77%
Social networks	80%
Online learning platforms	47%

Table one shows that participants were using Internet(85%);Google(80%) ; Social networks(80%); YouTube (77%); WIFI(70%); Online learning platforms (47%), and Social applications (35%) respectively. It seems that teachers are eager to use ICT tools.

In the second question, the participants were asked about the perceived benefits of ICTs. Table two spotlights teachers' perceptions regarding the merits of using ICTs in their teaching.

Table2. *Benefits of ICTs*

Perceived Benefits of ICTs	%
Developing effective and attractive teaching strategies	62%
Having collaborations and cooperation with peers and students	60%
Interacting and communicating online with students	58%
Providing feedback	35%
Using audio and visual aids	59%
Engaging students in learning	57%
improving students' motivation	57%
enhancing students' learning outcomes	47%

Table two reveals that teachers acknowledge the use of ICTs in that it develops practical and attractive teaching strategies (62%), maintains collaborations and cooperation with peers and students (60%), and supports online interaction and communication (58%).Fifty-nine percent of respondents reported that the integration of ICTs rouses the use of audio and visual aids. Seventy-five percent of informants revealed that using ICTs boosted motivation and engagement in teaching and learning. They also pointed out the importance of enhancing learning outcomes of students (47%), and providing feedback (35%).It seems that informants are satisfied with the use of ICTs.

Teachers were, then, questioned about their readiness to utilize ICTs. The following table provides an idea about the aptitudes and proficiencies EFL teachers in using ICTs.

Table 3. E- Competencies of Teachers

E- competencies of Teachers	%
Mastering PowerPoint and excel software	55%
Posting lectures online	53%
Attending virtual meetings	30%
Communicating with students through online platforms	39%
Having distant classes	45%
Using audio, videos, movies ,or songs as teaching materials	37%

Table three indicates that fifty-five percent of teachers use PowerPoint and Excel software, post their lectures online (53%), and have distant classes (45%). 39% of respondents believed that using ICTs permits teachers to communicate with their students via online platforms. 37% reported implementing ICTs embellished and enhanced their teaching using audio, videos, movies, or songs. 30% of responses envelop attending virtual meetings.

The fourth question seeks to inspect the significant internal and external obstacles that may dishearten teachers to use ICTs and, thus, resist the change. Barriers to integrating ICTs are exposed in the following table.

Table4. *Barriers to integrating ICTs*

Barriers and obstacles	%
Cognitive overloads	70%
Lack of training	80%
Overload teaching time	75%
No perception of benefits	78%
Resistance to change	79%
Insufficient ICT skills	80%
Emotional anxiety toward technology	79%
Fear of technical breakdowns	65%
Existing teaching method	74%
Inconsistent syllabus	76%

Findings from table four reveal that most teachers believe that insufficient ICT skill (80%), the lack of training (80%), and emotional anxiety towards technology (79%) as significant barriers to

ICT integration. Teachers believe that resistance to change (79%) results from absence of perception of benefits (78%). Incompatible syllabus (76%) can cause an overload of teaching time (75%). The existing teaching methods (74%) cause cognitive overloads70%, and develop a fear of technical breakdowns (65%).

In the last question, the informant teachers requested to propose some suggestions for the effective integration of ICTs. Table five provides an idea about the top recommendations.
Table 5.*Suggestions for effective use of ICTs*

Suggestions	%
Developing digital proficiencies of teachers.	69%
Exploring the potential of ICTs	70%
Training teachers to utilize ICTs.	71%
Reducing the teaching hours.	67%
Providing technical support mechanisms.	65%

Table five shows that for implementing ICTs, stakeholders, decision-makers, and education experts should provide training sessions for instructors to use ICTs (71%). They also reported that teachers and students need to explore the potential of ICTs (70%). Results disclose that it is critical developing the digital competencies teachers (69%); reducing the teaching hours (67%); and providing technical support mechanisms (65%). If they are actively trained to employ technology, teachers will be psychologically ready to face the change and develop ICT proficiencies. They would have positive attitudes about introducing education technologies.

The Interview
Online interviews endeavor to elicit voices and considerations of EFL teachers about using ICTs. Interviews attempt to examine the psychological readiness of teachers and the perceived obstacles faced when implementing educational technologies. The interviews also seek to bring out their attitudes and visions about using technology in a digital teaching and learning mode.
Question one: How can the use of ICT be beneficial for your teaching?

Interviewed teachers stated that when using ICT tools, they are encouraged to adopt good and appealing teaching approaches. They added that it maintains collaborations and cooperation with peers and students. An interviewee stated: *"I like interacting and communicating with my students online"*. They reported that the integration of ICTs involves the use of authentic learning materials in addition to audio and visual aids. It is stated: "*when listening to a song in an oral expression session or watching a movie in a lecture of literature, I have my students completely engaged in the learning process"*. They asserted that ICTs increased motivation and engagement in teaching and learning. They also pointed out the importance of enhancing the learning outcomes of students.

Question two: What do you appreciate most in the use of ICT?

Answers showed that using ICTs changes the perception and construction of lesson plans and activities. Participating teachers claimed that it allows them to reconsider the existing teaching approaches and reflect on the inconsistent syllabus employed in the curriculum. It was claimed: *"with technology in classes, teachers are provided with the opportunity to have rich and efficient learning materials which can be shared with peers and students".* They highlighted the relevance of online learning platforms and social networks in keeping in touch with students and providing feedback.

Question three: How do you evaluate your level of readiness to use ICT?
Interviewed teachers appear to have good competencies in using ICTs in their classroom instructions. They stated that they are competent in PowerPoint and Excel presentations and reported that they frequently post their lectures online, and have online classes.
Question four: What are the major problems encountered when integrating ICT?
Interviewee teachers consider insufficient ICT skills, the lack of training, and technology anxiety the major obstacles faced when integrating ICTs. They believe that inconsistent syllabus, and the existing teaching methods dishearten teachers from using technology, and claim that fear of technical breakdowns, and fears of competition were the actual hampers in implementing ICTs.
Question five: What do you suggest to integrate ICT into education nowadays?

Informant teachers asserted that they should reflect on more engaging enterprises when integrating ICTs. Interviewees insisted that it is crucial, for decision-makers, to provide active training to integrate ICTs effectively. It is also concluded that providing professional and technical support is highly required.

Discussion
Data analysis demonstrates that implementing ICTs in the EFL context was conceived as efficient and effective. Teachers involved in the study revealed a conditioned emotional willingness to utilize ICTs. The finding confirms the results of a survey by García-Valcárcel and Mena (2021) that using ICTs, as a shift mechanism, is advantageous. In this study, EFL teachers concede the learning facilities of educational technologies in enhancing motivation, providing feedback, and updating the traditional teaching approaches. These conclusions support studies by Michaeli, et al. (2020) and Oralbekova, et al. (2021), which indicated that it is significant to develop the psychological readiness of teachers to use ICTs in comprehensive pedagogy and learning.

The findings disclose that teachers were motivated to use ICTs in their didactic strategies. Though, they lack training; teachers are ready to shift to a digital teaching model wherein they are expected to post lectures on the platforms, give lessons online, and attend virtual meetings. These conclusions prop up the research findings by Kapalygina (2021) and Almashi(2019),which expose that the integration of ICTs fosters the construction of social behavior on digitalization. These findings support the results of a study by Havrilova, et al. (2021), which maintained that implementing ICTs is a novel strategy, that researchers consider the turning point of modern communication. This also confirms the findings of research by Alvarado et al. (2020), which maintained positive attitudes and psychological readiness of teachers towards technology was of paramount importance.

Results showed that informant teachers have a psychological readiness to use ICTs, with some limitations. Result might answer the main research question, what are the significant psychological barriers that might prevent the effective implementation of ICTs?
This study showed that the internal obstacles to integrating ICTs, involve insufficient ICT skills, resistance to change, technology anxiety, fear of technical breakdowns, and cognitive overloads. The lack of training, the plethora of teaching time, existing teaching methods, and inconsistent syllabus were the external obstacles as mentioned by Addas and Pinsonneault(2015) and Ertmer (2017).

These findings corroborate the thought of Joo, el al. (2016) and Carlson, el al. (2015), who considered that those internal and external barriers cause negative attitudes about using ICTs. Results, also uphold that computer concerns are a significant obstacle. Findings match the results of a study by Currieand Eveline(2011) that a lack of technical support, and insufficient digital competencies might impede ICT integration. They believed that providing training sessions and exploring the potentials of ICT were the possible enablers to effectively introducing ICTs.

Conclusion
The present research aims to analyze the psychological readiness of EFL teachers to use Information Communication Technologies in English language teaching at Oran University. The paper tries to reflect on the significant internal and external obstacles faced when integrating ICTs. Findings revealed that participant teachers have positive perceptions and attitudes about using ICTs. Analysis also showed that some internal and external barriers prevent the integration of ICTs. Stakeholders and decision-makers should realize that purchasing the latest educational technologies is not the magic stick. Success of this initiative is related with the motivation, collaboration, and the expectation of teachers to accept the change.

Suggestions
Education technologies attempt to promote an engaging and efficient teaching/ learning environment where both teachers and learners are advantageous to the facilities afforded by digitalization. The study provides some suggestions that can assure effective implementation of ICTs in the language teaching/ learning process:
➢ Encouraging efficient technology plans.
➢ Developing ICT skills of teachers and students.
➢ Affording good training programs and software.
➢ Adopting suitable strategies to meet the content objectives for practical teaching approaches.
➢ Supporting technology-enhanced teaching for tutors to rise above the obstacles encountered in the educational structure.

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