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Unraveling Resistance: The Teacher's Dilemma with Distance Learning Platforms

Décortiquer la résistance : le dilemme des enseignants et enseignantes face aux plates-formes d'apprentissage à distance

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Abstract

This paper presents the results of an exploratory study that was conducted among teachers at the Higher Institutes of Technological Studies in Tunisia on how they resisted the use of distance learning platforms. Different forms of resistance were expressed by participants, ranging from apathy to aggressive resistance. Several causes were revealed to justify this behaviour. The study showed that such resistance is multi-faceted and multi-dimensional, resulting in a multitude of practices that could be implemented to reduce teachers' resistance.

Keywords

Resistance; apathy; passive resistance; active resistance; aggressive resistance; status quo theory; attribution theory; cognitive dimension; affective dimension; conative dimension.

Résumé

Cet article présente les résultats d'une étude exploratoire réalisée auprès des enseignants des Instituts Supérieurs des Études Technologiques en Tunisie sur leur comportement de résistance face à l'utilisation des plateformes d'enseignement à distance. Différentes formes de résistance ont été exprimées par les participants allant de l'apathie à la résistance agressive. Plusieurs causes ont été décelées pour justifier ce comportement. L'étude montre que le comportement de résistance est multi-facette et multi-dimensionnel, ce qui engendre une multitude de pratiques qui peuvent être mises en place pour réduire la résistance des enseignants.

Mots-clés

Résistance, apathie, résistance passive, résistance active, résistance agressive, théorie du statu quo, théorie d'attribution, dimension cognitive, dimension affective, dimension conative.

Introduction

No one can deny the prominent role played by Distance Learning Platforms (DLPs) in higher education, especially in the context of the COVID-19 pandemic, when distance learning was used as an alternative to face-to-face teaching to ensure the continuity of curriculum-based study and learning during lockdown periods. In Tunisia, the COVID-19 crisis presented an opportunity for the Ministry of Higher Education and Scientific Research (MHESR) to review the higher education system and improve it by adopting digital technologies and strengthening online teaching (Arfaoui, 2022). In this respect, Tunisian higher education institutions have been committed to implementing digital pedagogies and developing the necessary infrastructure. This initiative is part of the quality support program currently underway within the higher education modernization project aimed at enhancing employability.

If education is to be digitalized, however, the behaviour of potential users of online education, particularly teachers, must be studied. Indeed, the COVID-19 pandemic revealed that neither students nor teachers were keen to accept this innovation. Like all users of new information technology (IT), some teachers have readily accepted DLPs, while others have been resistant. Therefore, a retrospective study is needed to understand the ways in which teachers resisted this technology during the COVID-19 pandemic. Several studies have thoroughly investigated the acceptance of DLPs by teachers or learners. By contrast, little attention has been paid to how teachers resisted using DLPs, despite its importance for managing resistance to change, knowing that their behaviour could represent an integral part of the strategy for implementing new IT. This paper presents the results of an exploratory study conducted among teachers at the Higher Institutes of Technological Studies (HITS) in Tunisia on their resistance to DLPs.

The aim of this paper is to understand teachers' resistance to the use of DLPs during the COVID-19 pandemic. This could be done by exploring the ways in which teachers manifested their resistance and identifying the reasons for this behaviour as well as the strategies proposed to reduce resistance. Understanding the phenomenon of resistance will allow us to identify the challenges involved in implementing online teaching and the difficulties teachers faced in accepting this new technology in the Tunisian context. The results of this study will guide MHESR in choosing strategies and policies to promote a positive attitude towards the use of digital technologies among teachers and ensuring the success of the strategic orientation plan adopted by Tunisian universities.

Literature Review

Definitions of Resistance

In the field of information systems, resistance is regarded as user opposition to the change associated with new IT. It is an adverse reaction to change (Kim & Kankanhalli, 2009; Markus, 1983). It could also be seen as an individual or collective response to a situation perceived as negative or threatening (Bareil, 2008; Polites & Karahanna, 2012).

Forms of Resistance

Several authors have been concerned with understanding resistance to change by analyzing the terminology used to describe this behaviour (Lapointe & Rivard, 2005; Markus, 1983; Rivard & Lapointe, 2012).

Several studies have shown that resistance is multi-faceted and could be approached through the set of behaviours users adopted to express their dissatisfaction with the new IT (Kim & Kankanhalli, 2009; Rivard & Lapointe, 2012).

Resistance to implementation of new IT could take several forms. Indeed, it has been presented as a continuum with different degrees of resistance (Coetsee, 1999; Lapointe & Rivard, 2005; Rivard & Lapointe, 2012). An individual may behave apathetically, showing indifference, passivity, and inertia. He or she may show passive resistance, reflecting a lack of interest, a negative perception of change, and may take the opposite side during debates. Resistance can also be active, when the individual openly protests and attempts to sabotage the process of implementing new IT. Finally, the individual may express aggressive resistance by using threats and boycotts (Coetsee, 1999).

Forms of resistance have been categorized along a continuum from apathy, through passive resistance, sabotage, denial, and persistence, to coalition building (Coetsee, 1999; Lapointe & Rivard, 2005; Rivard & Lapointe, 2012). Figure 1 shows the different forms of resistance described in the theory.

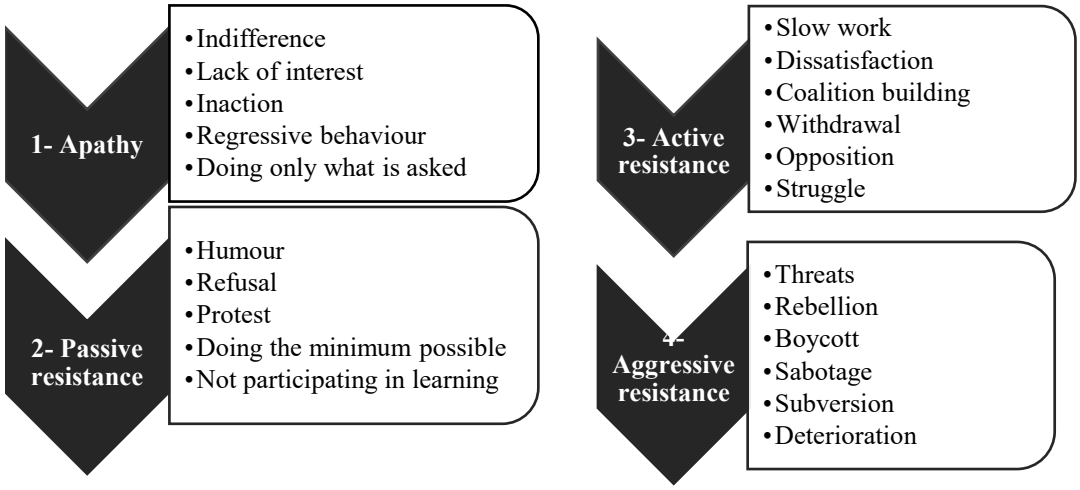

Figure 1
Continuum of Resistance to Change (Coetsee, 1999)

Causes of Resistance

Even if resistance proved to be natural and expected, determining its causes could remain a keystone to managing change. These causes are mentioned below. The study of teachers' behaviour towards new IT can be analyzed through a three-dimensional lens (Kin & Kareem, 2017):

1) The cognitive dimension is related to the information possessed about the new IT and the attribution of outcomes from its use (Ngafeeson & Midha, 2014);

2) The affective dimension encompasses the emotions felt regarding new IT. For example, intolerance of ambiguity, feelings of insecurity, fear of the unknown, risk aversion, lack of trust and a perceived threat to one's values and identity are major causes of resistance (Bareil, 2008; Craig et al., 2019; Lapointe & Rivard, 2005; Markus, 1983; Polites & Karahanna, 2012);

3) The third dimension is the behavioural or conative dimension which is reflected in the teachers' reaction to new IT. This could take different forms, such as acceptance, rejection, or reactance (Laumer & Eckhardt, 2012).Resistance to change can be explained by several theories,

especially the attribution theory (Ngafeeson & Midha, 2014) and the status quo theory (Zimmerman, 2006). Since resistance could differ from one cultural context to another, it is important to study teachers' resistance in the Tunisian context to analyze the above-mentioned forms of resistance, detect the causes, and identify practices to reduce this behaviour.

Context

Since 2002, the Tunisian government has adopted a policy of integrating information and communication technologies (ICT) into the education system. To enact this policy, they created the Virtual University of Tunis (VUT). Its primary concern is the integration of online teaching into Tunisian higher education establishments (Arfaoui, 2022; Messoussi et al., 2018; Taziri & Akkari, 2020). In 2003, VUT launched its first support program at HITS (Ghobtane & Amor, 2021). Prior to the COVID-19 pandemic, several teachers participated in skills-development training offered by VUT. However, some teachers refused to engage in online teaching (Kalai, 2018). Some studies even claimed that online teaching has a higher failure or dropout rate (Ben Romdhane, 2013) and that the integration of ICT into Tunisian higher education remained immature (Kaddachi, 2017).

In 2019, the coronavirus (COVID-19) changed all that. The COVID-19 pandemic created a specific context that unexpectedly upended the university teaching system worldwide (Arfaoui, 2022; Ghobtane & Ben Amor, 2021). This abrupt change led university teachers to take on "global challenges" (Poellhuber et al. 2021), that affected several countries on different continents and with different teaching contexts.

The main challenges observed worldwide were related to teachers' preparation for using DLPs and making online courses available (Karsenti et al. 2020). Indeed, given the suddenness of the COVID-19 crisis, little time was devoted to training teachers and equipping them with the skills needed to use DLPs. Rapid training sessions had to be arranged and the transition to online teaching had to happen immediately. Equity among students was another major challenge to address, as not all of them had the same means to access online learning. This issue was particularly evident in Africa, where 82% of students lacked the means to access online learning (Ghobtane & Amor, 2021; Karsenti et al. 2020). Course continuity, pedagogical success and the implementation of online assessment were other challenges faced during the pandemic (Karsenti et al. 2020; Poellhuber et al. 2021).

Tunisia, too, faced challenges as it confronted the pandemic. To cope with the COVID-19 crisis, teachers were abruptly forced to migrate to online teaching (Arfaoui, 2022). Consequently, accelerated training courses were quickly organized by VUT to train teachers on how to use the Moodle platform. The pandemic thus presented an opportunity for the rapid reinforcement and spread of online teaching. However, an access problem existed at universities, among students and teachers alike. This included problem accessing Moodle, lack of Internet access and an absence of digital devices for students (computers, tablets, smartphones). Indeed, theoretical and empirical studies after COVID-19 argue that the integration of ICT into Tunisian higher education still faces major challenges and significant obstacles (Arfaoui, 2022; Hamlaoui, 2021; Taziri & Akkari, 2020).

To address these challenges, Tunisia has committed, in recent years, to an educational strategy for 2023-2025 aimed at modernizing the education system by integrating digital technologies (UNESCO, 2024). In this respect, as part of the World Bank-funded quality support program, the MHESR has committed to a strategy to enhance the use of digital technologies by setting up the

necessary infrastructure for online teaching and teacher training (Arfaoui,2022). To date, this project is still ongoing, with some achievements announced on the project's Facebook page, including a pedagogical innovation centre at the Higher Institute of Technological Studies in Sousse equipped with the audiovisual materials needed to produce digital content; a videoconferencing room at the Higher Institute of Technological Studies in Beja; and some training programs to strengthen teachers' digital skills. In addition to these measures, it is important to mention the strategy led by the Ministry of Technologies and Communication (2021-2025), which aims to reduce the digital divide by implementing a program to digitize the Tunisian administration, which includes connectivity for educational establishments (Aissaoui, 2020).

While infrastructure and training are necessary for establishing online teaching, on their own they are insufficient and must be accompanied by other essential measures to address the challenges raised by this study. Therefore, we will make recommendations at the end of this paper for promoting teachers' acceptance of digital technologies.

Methodology

Since the VUT program was launched within the HITS, an exploratory study has been conducted among teachers at these institutes on their attitudes to DLPs. Twenty-eight teachers took part in the study. Eighteen of them accepted the use of distance learning platforms while ten showed resistance. Of these, some reported resistance at first, but later accepted the platform, while others were pushed into using it during the pandemic.

In this paper, we will focus our analysis on the forms of resistance exhibited by the teachers. To preserve anonymity in the data analysis, each participant was assigned a unique code from P1 to P28. Those who expressed resistance had the following codes: P3, P7, P15, P16, P18, P19, P21, P22, P24 and P25.

Semi-structured, in-depth interviews were conducted with the teachers. Some interviews were face to face while others were done online. Open-ended questions were asked about the forms and causes of resistance, as well as suggested practices to reduce such resistance. Verbatim statements were transcribed in French, then translated into English using the DeepL translation tool and reviewed by a specialist translator. Content analysis was carried out on the interview data, and Sphinx iQ3 software was used to perform textual and semantic data analysis. Of the teachers who reported resistance to the DLP, 60% were female and 40% were male. The average age of the participants was 44. Ninety per cent of them were technology teachers with 17 years of teaching experience and a year and a half of experience in distance education. Participants came from different educational backgrounds. Sixty per cent of them have been trained in the field of management, 20% have an electrical engineering background, 10% have a civil engineering background and 10% have a mechanical engineering background.

Results

Forms of Resistance

Participants in this study have shown different forms of resistance ranging from the apathetic to the aggressive. Apathetic behaviour was expressed through inaction caused by a sense of fear of the unknown as asserted in this quote, "At first, I didn't understand what it was exactly. I was scared because I didn't have a clear idea about the platform" (P25).

Apathy was also expressed through regressive behaviour that questioned the usefulness of IT: "I judged again the usefulness of IT and recognized its limitations," said Participant P22.

Most participants exhibited passive resistance by expressing their refusal to use distance learning platforms. Here are some examples of statements expressing passive resistance: "I rejected the concept, because I noticed that it will not ensure quality in education" (P7). "At first, I was reluctant, then I refused to use it" (P15).

Other participants were pushed by the pandemic into using DLPs, since this became the only way to ensure course continuity. However, passive resistance may be exhibited by using what is mandatory and doing what is required. These participants attempted to find an alternative to DLPs, as expressed by Participant P24: "I have to accept, and I agreed to use the platform because the situation pushed me to go along with it, but I went much further to try an alternative to this platform."

The teachers' resistance evolved into active resistance through the formation of coalitions. The result of this process was not only collective opposition to the use of distance learning platforms, but also advocation for the interests of students as well as teachers who could not provide online courses because they didn't have the necessary infrastructure. "I advocated on behalf of the situation of some students and teachers" (P18).

Aggressive resistance is a form of resistance shown by teachers through boycotts, as expressed in these quotes: "At some point, coalition-building also occurs due to the lack of infrastructure," said Participant P15. "Teachers refused to use the DLP, then they boycotted it. Coalition-building occurs on the part of teachers due to lack of information about DLPs, an issue of equity among students, and poor infrastructure at the institute" (P16).

The exploratory study revealed that teachers used various forms of resistance. However, passive resistance was the form used most frequently, demonstrated by the refusal to use distance learning platforms as shown in the word cloud generated from the interviewees' descriptions of their forms of resistance (Figure 2), where one of the main repeated terms is "refusal", which expresses passive resistance according to the resistance continuum (Figure 1).

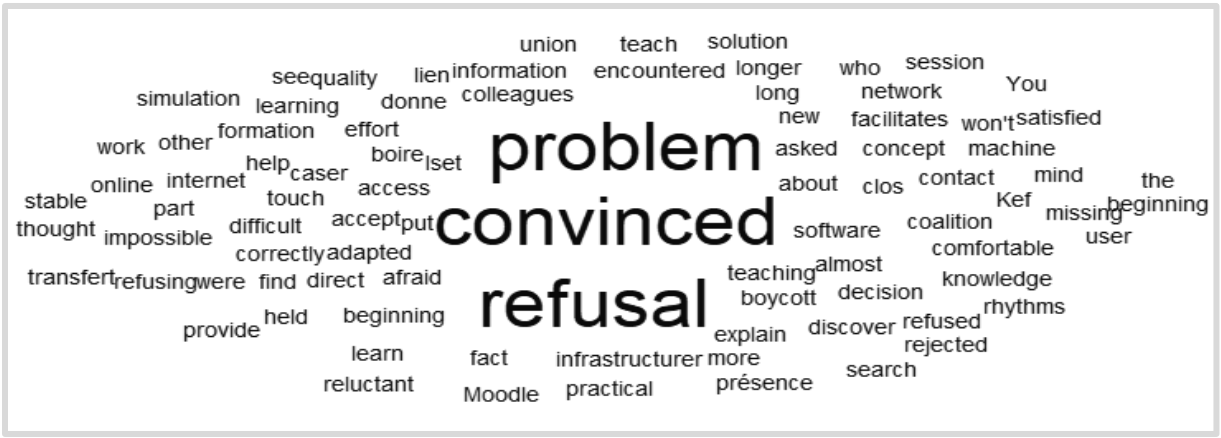

Figure 2
Word Cloud Generated from Descriptions of Forms of Resistance

To better understand the phenomenon of resistance among participants, the interviews included a question about the causes of resistance. An analysis of these causes is the topic of the following section.

Causes of Resistance

The study identified several causes of resistance to the use of DLPs. Lack of information about DLPs was the cause that the interviewees mentioned most often. "I didn't know what it is and how to use it" (P25). This cause was mentioned by four interviewees. Indeed, due to the lack of information, the DLPs were like a black box whose operation and usefulness remain unknown.

Resistance to using DLPs was also explained by the emotional state associated with this change. Interviewees expressed fear of both change and failure as a cause of resistance. "I didn't know the tool and by nature I fear change despite its positive effect. I felt anguish and my mood dramatically changed," said Participant P3. Lack of experience and failure during past experiences were associated with this sense of fear. For instance, Participant P15 had a fear of failure resulting from their trainer's negative experience when they first used a DLP. "I was afraid of failure because the trainers themselves experienced such failure with DLPs" (P15).

In addition to the emotional state, the lack of necessary infrastructure and the absence of suitable conditions for using DLPs are among the main causes of resistance mentioned by participants. The lack of both computers and digital courses, unreliable Internet connections and poor computer' performance present a challenge for online teaching.

These factors were recognized as technical issues for live online classes: "Unsuitable conditions and unavailability of online learning tools related to the Internet, PC and courses," said Participant P3. "Logistics of online learning present problems. Neither students nor teachers can access DLPs" (P18).

Inertia and the difficulty in changing acquired teaching habits are also causes of resistance, as expressed by Participant P24: "For me, teaching should occur in a physical classroom. I prefer delivering lessons in a classroom rather than online. The machine prevents me from having face-to-face interaction with students. So, it is a matter of practice."

These remarks show that teachers are used to interacting with students in a physical classroom, but they perceived that DLPs do not represent this interactivity. "Virtual interaction does not mimic physical interaction. I want to post online courses and to invite students to interact with the content," said Participant P24. "I am among those who refused online teaching because I want to teach the students face to face, I want to look at them and see their reactions," said Participant P19.

This perceived lack of interactivity in DLPs has created a belief among teachers that communication via DLPs could not always be as effective, instructional, and purposeful as face-to-face teaching. "I am not convinced that communication is effective. There is a lack of interactivity with students" (P7). "I am not convinced about online teaching, which is likely to fall short of its achieved course objectives in terms of understanding, assimilation, motivation, and fulfillment," said Participant P19.

Another cause of resistance to the use DLPs was the fact that these platforms did not align with the teacher's habits and preferences. "I like being in the field. I value students' class attendance. I like to touch the paper, to move around, and to see my students. In online teaching, I couldn't do that," said Participant P24.

Similarly, the mismatch of DLPs to the teachers' professional needs presents an additional argument for resistance according to some teachers: "The DLP meets neither my needs nor those of the students. It also doesn't meet the course' specificities" (P24).

The DLP that I used is merely a solution adopted without being reconciled with the Tunisian context. I still have a critical eye. The platform could be better reshaped. For instance, the online discussion forum works well in different contexts, but it does not operate in that of Tunisia. We must study what the Tunisian context needs (P22).

Another participant highlighted the shortcomings encountered in providing practical work through the DLPs: "We were unable to do practical work on the platform, and when training a technician, practice is important" (P21).

Similarly, the ability of DLPs to handle teachers' evaluation systems has been questioned, since it has been an impediment to the use of these platforms, as expressed by Participant P19: "There is also a pitfall in terms of evaluating students' participation or giving them marks."

In addition to the mismatch between DLPs and teachers' needs, some participants emphasized the importance of aligning DLPs with teachers' values. In this respect, Participant P22 stated that the use of DLPs to provide online instruction can raise the issue of equity among students because most of them could not afford the necessary educational materials to participate in online courses. There were even those who resisted in support of students who could not access DLPs, as these quotes confirm: "No, I didn't accept the use of DLPs at once. I feel at ease without it. I supported some students' and teachers' situations" (P19). "The issue of equity among students was obvious," said Participant P16. "The problem of inequality has increased among students: between those who can afford it and those who cannot" (P26).

Moreover, other teachers mentioned a lack of IT skills, lack of training, and lack of experience as further causes of resistance to using DLPs. "Lack of computer skills and lack of experience existed with DLPs" (P15). "No, I didn't accept the use of DLPs right off the bat because we weren't trained and prepared enough to facilitate remote learning" (P18). Considering that teaching connects teachers with students, it is worth noting that students' attitudes and behaviour toward DLPs influenced the teachers' resistance. Likewise, some teachers mentioned their students' non-involvement and lack of motivation to use DLPs for online learning. "Lack of motivation among students is evident simply because the use of DLPs is not mandatory" (P15). "Students aren't engaged in distance learning" (P16).

Students' absenteeism is explained by the limited platform connectivity, the difficulties that they encounter when accessing the platform, the lack of financial resources, and lack of training and support. "I was hampered by students' reluctance due to a lack of financial resources and absence of training" (P26). "Problems occurred when using it: poor access, poor Internet connection and lack of financial resources" (P9).

On the other hand, the teachers' lack of ambition to change their teaching methods and the perceived lack of security on DLPs with respect to intellectual property protection were additional explanations for the teachers' resistance to using DLPs.

Once the causes of the teachers' resistance are identified, it is important to suggest practices to reduce this resistance. The study also focused on the practices suggested by teachers. These are presented below.

Practices to be Implemented to Reduce Resistance to Change

Training, coaching, and raising awareness are the most cited practices for both students and teachers to reduce their resistance. In fact, it is through training that teachers discover the black

box's contents, understand its function and usefulness, and master its use. Participant P22 stated: "Transparency is needed: to show exactly what a DLP is and how it works."

Some teachers suggest that training could be mandatory for all teachers to overcome the fear of the unknown. The example of Participant P15, who resisted at first and later changed his behaviour, was mentioned to illustrate the importance of training. This participant stated: "The training produced a need to understand the platform carefully. It motivated me to learn more about it." He argued that it is important to have high-quality training. Another participant emphasized the importance of practical training based on learning by doing and the provision of online training for DLPs as well as for online teaching. Coaching for teachers can be provided through a group of teacher ambassadors who have experience with DLPs and who can help resistant teachers change their behaviour. In this respect, some participants stressed the importance of teamwork and advocated a core group of teachers' leaders who influence others to try and learn about DLPs to overcome their resistance.

According to some participants, training and coaching are both effective training strategies, but insufficient. These strategies were considered to be quite important for making the teacher an active partner throughout the DLP implementation process. This process should start with the study of teachers' needs, as suggested by Participant P24: "It is not enough to train them, but they must be present, and aware of the entire process. We have to go beyond teachers' needs and to take into consideration some subject specificities."

Some teachers considered teacher' involvement as an important factor in developing DLPs, since it has facilitated the acceptance of the new norm: "When you are involved in something, you will accept it," said Participant P24. Involvement would allow DLPs to be better suited to the teachers' needs as well as to their subject specificities, as stated by Participant P21: "If I were involved in the development of a DLP, I would understand the tool and I would help with ideas for handling practical coursework on the platform" (P21). Being involved in the DLP development process could also help teachers understand the distance learning process: "As long as I get involved, I will have a clear idea about distance learning," said Participant P19. Teachers have even suggested the development of a DLP' prototype taking into consideration teachers' expectations, students' concerns, and the needs of the administration.

In addition to training, awareness-building, coaching and involvement, participants emphasized the importance of having the necessary infrastructure to use DLPs for online teaching and of providing students with the necessary human resources as well as the equipment and material resources, such as computer equipment, Internet connections and coaching. "If we want to use DLPs, we must provide students with the effective equipment and necessary infrastructure to ensure equity among students" (P20). Other participants believed that to reduce resistance, it should be important to improve DLP functionalities to ensure interactivity and security. More options could be provided to correspond with teachers' needs as well as course' specificities. Technical issues should also be resolved and direct access to DLPs should be made easier. Having ergonomic and user-friendly DLPs could reduce teachers' resistance. "We need to find solutions with artificial intelligence to provide better interactivity and to ensure students' control," said Participant P21.

Additionally, some teachers have promoted the implementation of coercive measures that compel teachers and students to use DLPs through a decision-making policy that makes online teaching platforms mandatory. "We need to have a decision-making policy that serves distance education" (P16). Another participant suggests: "The use of DLPs should be made mandatory." (P26). Other

teachers find it necessary to know how to respond to a given situation and how to present a framework that forces teachers to accept DLPs.

In contrast to teachers who encourage coercive measures, others suggest the gradual integration of DLPs into teaching from primary school onwards and the adoption of hybrid teaching to inculcate the culture of using DLPs. "Online teaching should be integrated with face-to-face teaching. That is, integrate the submission of practical work, reports, and assessments. This method becomes easier to use in case of emergencies," suggested Participant P7.

Discussion

Recent studies have increasingly focused on resistance to change with regard to online teaching during the COVID-19 pandemic that marked the worldwide transition from the second to the third decade of the 21st century. These studies were conducted in various countries characterized by different cultures, such as Canada, the U.S.A., Italy, Romania, Jordan, Pakistan and Tunisia (Al-Takhayneh et al., 2022; Alvi, 2023; Arfaoui, 2022; Dârjan, 2024; Gratz & Loony, 2020; Sokal et al., 2020; Toto & Limone, 2021). Despite the diversity of contexts, these studies all endorsed the same finding: that resistance to change existed among teachers with respect to online teaching, and this can be explained by several factors, including psychological, institutional, social, technological, and cultural ones.

This exploratory study of resistance to change among teachers at HITS in Tunisia confirms the existence of different forms of resistance as defined by theory, ranging from apathy to aggressive resistance. However, passive resistance, often expressed by the refusal to use DLPs, remains the most common form of resistance among teachers. Active resistance is expressed by forming coalitions and aggressive resistance is expressed by boycotting classes. In some cases, a defense of equality among students was also detected.

This study confirms a multitude of causes that are defined by the theory and allows us to detect three explanatory dimensions of resistance: the cognitive dimension, the affective dimension, and the conative dimension. These results are supported by the study conducted by Kin & Kareem (2017), who validated the impact of these three dimensions on teachers' attitudes.

1) The cognitive dimension is indeed the first explanatory dimension of resistance among teachers. It reflects the lack of both information and knowledge about DLPs (Laumer & Eckhardt, 2012). Teachers may perceive the new IT as a threat that will affect their expertise and their skills since they do not know it well. (Zimmerman, 2006).

2) The second dimension is the affective dimension (Andin et al., 2022; Laumer & Eckhardt, 2012; Markus, 1983). The fear of change and the fear of failure are both expressed by teachers and represent a hindrance to using DLPs (Mohamed, 2008).

3) The third dimension is the conative dimension. It is related to behaviour based on the context, conditions, and students' attitudes. This study shows that the context of DLP use, conditions, infrastructure, and equipment needed to accept DLPs are determinants of the conative dimension. Thus, COVID-19 forced some teachers to use DLPs but didn't change their belief that DLPs are not an effective way to teach.

In addition to the explanatory dimensions of resistance to change, the study confirms that teachers' resistance explained by the status quo theory (Kim & Kankanhalli, 2009; Markus, 1983;

Zimmerman, 2006). Indeed, in the Tunisian context, some teachers stated that they do not want to change their teaching habits and methods. They prefer to keep their acquired habits.

Similarly, the attribution theory (Ngafeeson & Midha, 2014) explains the resistance of teachers who have repeatedly expressed their convictions and beliefs that using DLPs does not achieve teaching goals, does not ensure effective communication, does not lead to excellent teaching quality, and does not meet teachers' needs.

The theory of IT Identity Threats (Craig et al., 2019) also explains teachers' resistance, since there are teachers who have reported a refusal to use DLPs because it threatens equality among students. These results are also confirmed by Ghobtane & Ben Amor, (2021) and Arfaoui (2022). In this sense, the alignment of DLPs with teachers' values is important for some authors (Cooper, 1994; Pardo del Val & Martínez Fuentes, 2003). Similarly, the study conducted by Righi (2021) proved that when the values accorded to online teaching platforms by teachers and the values perceived by teachers in a specific platform are congruent, this promotes a positive attitude towards the specific platform and reduces the intention to resist online teaching.

Furthermore, this study highlights the impact of the Tunisian context on the teachers' resistance. Even though the institution deliberately tends to modernize higher education in Tunisia (Kaddachi, 2017), studies show that there are several barriers to the adoption of ICT in the educational sector.

The first barrier is a political one. It can be seen in the huge gap between the political discourse advocating the promotion of ICT integration within Tunisian universities and the actions taken. Despite the presence of official documents advocating the integration of ICT into higher education, the reality in Tunisian universities has not changed much. In addition, the actions taken are insufficient to ensure any tangible transformation of the reality of Tunisian universities in the field of techno-pedagogy (Hamlaoui, 2021; Kaddachi, 2017; Kalai, 2018; Messoussi et al., 2018).

Moreover, it is important to mention the economic barriers, knowing that the COVID-19 pandemic worsened the economic recession in a country already suffering from economic stagnation (OECD, 2022). This recession had several repercussions in various sectors, including education. Universities suffer from a shortage of hardware and software, low-speed Internet connections, poor data security and confidentiality issues that make the use of e-learning difficult (Ghobtane & Ben Amor, 2021; Kalai, 2018; Taziri & Akkari, 2020). The lack of necessary infrastructure led some universities to refuse to use online teaching during the pandemic (Arfaoui, 2022).

In addition to economic barriers, cultural barriers have limited the integration of ICT into Tunisian higher education. Kalai (2018) noted that the absence of a technological culture contributes to teachers' resistance to online teaching. Teachers are aware that ICT integration requires ongoing training and technical support to acquire the necessary knowledge, gain the required skills, develop pedagogical approaches and master digital tools. Furthermore, the lack of ongoing training and technical support from universities are factors that explain teachers' resistance and fear of engaging with the digital world (Kalai, 2018).

A number of teachers refused to use online teaching during the pandemic, which posed a real problem of equity among all students as well as all Tunisian universities. Indeed, online teaching leads to unequal access to the world of education, which can exacerbate learning and social inequalities (Arfaoui, 2022; Ghobtane & Ben Amor, 2021). That is, many students were excluded from online education during the pandemic because they did not have the necessary means to take online courses. Inequalities also existed among teachers, who did not necessarily all have access to the same online teaching methods and tools (Ghobtane & Ben Amor, 2021; Arfaoui, 2022).

Disparity and digital divides preventing the integration of ICT were observed between institutions – and even within the same university – during the pandemic (Taziri & Akkari, 2020).

Psychological barriers were also identified in the studies. Many teachers were unprepared for and unaccustomed to accepting online teaching. They were not psychologically prepared for change, for migrating to digital teaching, for adopting a new pedagogy and for using new techniques (Arfaoui, 2022; Kalai, 2018; Ghobtane & Ben Amor, 2021). This study proves the existence of these barriers and highlights several causes of resistance that can be categorized as shown in Figure 3.

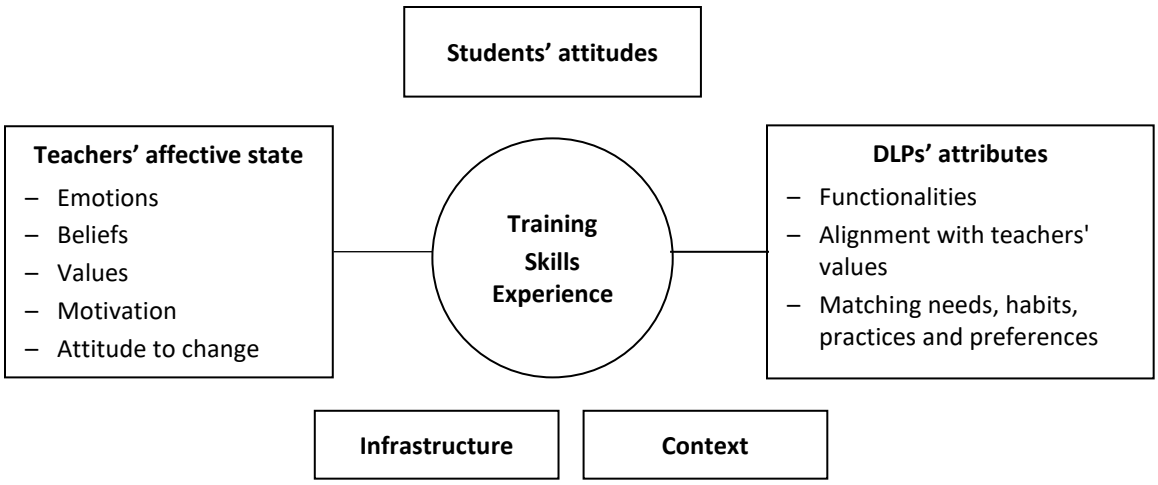

Figure 3
Factors in Teachers' Resistance to DLPs

The first category is mainly related to the teachers, specifically to the affective dimension, and it includes teachers' affective state towards change, their beliefs, values, motivations, practices, and preferences. The second category is related to the characteristics of DLPs, which refers to the cognitive dimension: the DPL's' functionalities, and their alignment with the teachers' values, needs, habits. The third category reflects the conative dimension and involves relational factors that create the link between DLPs and teachers, such as training, skills, and experience, and the conditional factors which include context, infrastructure, and students' attitudes. Furthermore, Table 1 presents the results of cross-sectional data analysis to identify the causes that led to different forms of resistance. As shown in Table 1, the teachers exhibited apathetic behaviour when there was a lack information about DLPs, which created a sense of fear of the unknown.

Passive resistance appeared when teachers attribute the negative results of using DLPs. Active resistance occurred when DLPs affected the teachers' core values, especially equality among students. Lastly, aggressive resistance occurred when there was a range of causes involving teachers' values, lack of infrastructure, and lack of information about DLPs. This indicates that the form of resistance engaged in by the teachers changes depending on the causes. Thus, the more the causes affect a teacher's core values, the more aggressive the teacher's resistance will become.

Table 1
Forms and Causes of Resistance

Forms of resistance	Causes of resistance	Verbatim examples
Apathy	Fear of the unknown Lack of information about DLPs	"At first, I did not understand what it was exactly. I was scared because I didn't have a clear idea about the platform" (P25).
Passive resistance	Negative outcomes attributed to DLP use	"I rejected the concept, because I noticed that it will not ensure education quality" (P7).
Active resistance	DLPs do not align with teachers' values Lack of necessary infrastructure	"I don't want technology that deepens social injustice. This can lead to conflicts and social violence" (P22). "At some point there was also coalition-building due to a lack of infrastructure" (P15).
Aggressive resistance	Lack of information about DLPs DLPs do not align with teachers' values Lack of necessary infrastructure	"Coalition-building occurs on the part of teachers due to a lack of information about DLPs, an issue of equity among students, and poor infrastructure at the institution" (P16).

Recommendations

Understanding the causes of resistance is not enough to reduce it (Zimmerman, 2006); it is also necessary to adopt practices to reduce resistant behaviour. As mentioned above, in recent years, the MHESR has been committed to strategies for establishing needed infrastructure, reducing the digital divide between academic institutions and teachers in training. These strategies are necessary but insufficient, since they must be complemented by other strategies to act on the three dimensions identified.

The results of this study highlight several challenges to be addressed to ensure the integration of online teaching in Tunisian higher education institutions. This leads us to propose some recommendations to the MHESR for implementing the strategic orientation plan to ensure the integration of digital technologies and encourage their use by teachers. The recommendations that could be added focus on the following axes:

1) Develop a communication and awareness strategy for teachers to instill a technological culture, make them aware of new teaching methods, and develop the future horizons of teaching with new IT and a vision to achieve common goals (Mohamed, 2008).

2) Adopt a strategy that involves teachers in the process of designing and developing digital technologies, and identify their specific needs to facilitate acceptance of the new technology.

3) Adopt an adaptation strategy to offer digital technology that includes various features to meet the needs and specificities of different subjects being taught, integrating new technologies such as artificial intelligence, virtual reality, or augmented reality. This would allow teachers of technical subjects to conduct online practical work, perform continuous assessments and have immediate interactivity.

4) Adopt a strategy to align the IT values offered by digital technologies with the IT values attributed by teachers to these technologies in the teaching context. Indeed, the study revealed that teachers' resistance becomes aggressive when the technology does not align with their values, particularly regarding equity among students and equal access to online education.

Understanding teachers' values and offering technology that aligns with these is key to fostering a positive attitude among teachers.

5) Adopt a continuous practice strategy based on training with a "learn by doing" approach, which is essential for developing teachers' skills in using new digital technologies, especially since digital technologies are constantly evolving.

6) Establish a coaching and technical support team that can assist teachers at any time in their efforts to set up online courses and online teaching. The presence of such a team would reassure teachers who express anxiety and fear about new technologies.

7) Set up the necessary infrastructure and reduce the digital divide.

These recommendations are intended to act on the three dimensions identified by this study, as shown in Table 2: an effective communication strategy and involving teachers in the DLP design process are strategies that act on the cognitive dimension. They help teachers understand the DLPs' functionalities and their usefulness.

Table 2
Proposed Strategies for each Dimension

Cognitive dimension	Affective dimension	Conative dimension
Effective communication and awareness strategy	Alignment strategy	Continuous training strategy and coaching
Involvement strategy	Adaptation strategy	Strategy for providing the necessary infrastructure

To act on the affective dimension, it's important to take into consideration teachers' attitudes, values, and classroom behaviour (Johnson, 1969). This highlights the importance of how DLPs' fit in with teachers' values, needs, habits, and practices. It would then be necessary to adapt the DLPs' functionalities to meet the teachers' needs in order to reduce fear of the unknown and fear of change.

Finally, to act on the conative dimension, it is important to adopt a continuous teacher' training strategy based on a "learn by doing" approach and coaching. However, training will not be enough if we do not offer teachers and students suitable conditions for using DLPs, a favourable context, and an inclusive learning environment.

Limitations of the study

The exploratory study was conducted on a small sample of Tunisian teachers. Despite the small number of participants, the in-depth interviews collected a certain amount of information about the forms and causes of the teachers' resistance and the practices to be implemented to reduce it.

As well, this study approaches the teachers' resistance through examples expressed by teachers in interviews. It is important, however, to have a measuring instrument to operationalize resistant behaviour (Bareil, 2004; Duclos, 2015). Indeed, resistance is a term that has been used for a very long time in literature and goes hand in hand with change. But it is a difficult concept to measure given its subjective, elusive, and unpredictable nature. Resistance can be perceived as individual or collective, active or passive, implicit or explicit, conscious or unconscious, negative or positive (Bareil, 2004).

It is in this sense that the concept is now being challenged by certain authors who propose that the study of this phenomenon take into account the context, climate, and environment in which change occurs (Bareil, 2004; Duclos, 2015). Duclos (2015) even suggests removing the term "resistance" and replacing it with the study of a set of concerns or manifestations that occur in a context of change characterized by a climate of mistrust and lack of confidence. In this type of climate, authors Bareil (2004) and Duclos (2015) find it perfectly legitimate to be concerned and to ask certain questions before committing to change. Duclos (2015) considers that it is this phase of concern that will promote the implementation of change, since the concerns and interests of the agents affected by the change will be taken into consideration.

Considering this critique of the concept of resistance, it would be interesting to make another reading of the results of this study by asking the following question: do the results obtained reflect resistant behaviour, or are they expressions of legitimate concerns that must be taken into consideration to foster the teachers' acceptance of online teaching?

Conclusion

The study shows that the teachers' resistance to DLPs is complex and multifaceted, since all forms of resistance were noted. It is also multi-dimensional, given that several causes were detected to explain how resistance affects the three dimensions: cognitive, affective, and conative. The range of practices that can be implemented confirms that there is no one right practice to reduce resistance to change, but practices should be combined and adapted to several types of teachers. Future research should focus on studying teachers' typology based on their values, which are considered important determinants of behaviour and are based on their forms of resistance. This typology could help determine appropriate practices for each category to reduce resistant behaviour. It would also be advisable to conduct action research to evaluate the effectiveness of the proposed strategies in reducing resistance and assessing their impact on each dimension.

From another perspective, the critique of the concept of resistance opens horizons for further research, which should be based on dynamic and gradualist models of the study of change, as suggested by Bareil (2004) and Duclos (2015), who regard the manifestation of these concerns as simply a phase that precedes acceptance. This opens the horizons for conducting a longitudinal study that examines the process of change and quantitative research that proposes a measurement of teachers' resistance to ICT in general.

Notes

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Data Availability

The data supporting the article and collected during the research hereby described are available from the author, **Héla Righi**,upon request and under conditions to be discussed.

References

Aissaoui, N. (2020). COVID-19, enseignement à distance et fracture numérique : quelles mesures prendre pour la Tunisie [COVID-19, distance learning and the digital divide: What measures to take for Tunisia]? (Policy brief nº 12). CMI-FEMISE. **https://femise.org/...**

Al-Takhayneh S. K., Karaki, W., Hasan, R. A., Chang B. L., Shaikh, J. M., & Kanwal, W. (2022). Teachers' psychological resistance to digital innovation in Jordanian entrepreneurship and business schools: Moderation of teachers' psychology and attitude toward educational technologies. *Frontiers in Psychology, 13*, Article 1004078. **https://doi.org/10.3389/fpsyg.2022.1004078**

Alvi, E. (2023). Navigating online Practice Teaching (PT) amidst the COVID-19 pandemic: Exploring pre-service teachers' experiences in Pakistan. *Journal of Education for Teaching, 50*(3), 371–389. **https://doi.org/pksx**

Arfaoui, R. (2022). *Pandémie Covid-19 : défis et réponses de l'enseignement supérieur en Tunisie* [Covid 19 pandemic : Challenges and responses education in Tunisia]. Bureau National Erasmus+ Tunisie. **http://erasmusplus.tn/...**

Bareil, C. (2004). *La résistance au changement : synthèse et critique des écrits* [Resistance to change : A synthesis and critique of the literature] (cahier du CÉTO nº 04-10). HEC Montréal, Centre d'études en transformation des organisations. **https://inspq.qc.ca/...**

Bareil, C. (2008). Démystifier la résistance au changement : questions, constats et implications sur l'expérience du changement [Demystifying resistance to change : questions, findings and implications for the experience of change]. *Télescope*, *14(3)*, 89-105. **https://telescope.enap.ca/...**

Ben Romdhane, E. (2013). La question de l'acceptation des outils de e-learning par les apprenants : quels dimensions et déterminants en milieu universitaire tunisien [Issues in learners' acceptance of e-learning tools: What are the dimensions and determinants at Tunisian universities]? *International Journal of Technologies in Higher Education, 10*(1), 46-57. **https://doi.org/10.18162/ritpu.2013.223**

Bureau multipays (Algérie, Mauritanie, Maroc, Tunisie). (2024). *De chenille à papillon : pour une transformation numérique réussie* [As the caterpillar turns into a butterfly: achieving a successful digital transformation] UNESCO. **https://unesdoc.unesco.org/...**

Coetsee, L. (1999). From resistance to commitment. *Public Administration Quarterly*, *23*(2), 204-222. **https://jstor.org/stable/40861780**

Cooper, R. B. (1994). The inertial impact of culture on IT implementation. *Information & Management*, *27*(1), 17-31. **https://doi.org/fscpz5**

Craig, K., Thatcher, J. B., & Grover, V. (2019). The IT identity threats: A conceptual definition and operational measure. *Journal of Management Information Systems*, *36*(1), 259-288. **https://doi.org/ggk2f3**

Dârjan, I. (2024). Resistance to change in the Romanian educational system: Challenges and opportunities. *Revista de Ştiinţe ale Educaţiei*, *49*(1), 179-191. **https://doi.org/10.3592/JES.2024.1.10**

Duclos, A. M. (2015). La résistance au changement : un concept désuet et inapproprié en éducation [Resistance to change: An outdated and invalid concept in education]. *Psychologie & éducation*, *1*, 33-45. **https://researchgate.net/publication/281831286**

Ghobtane, K. O., & Amor, H. B. (2021). L'enseignement universitaire à distance en Tunisie : promesses et obstacles à son adoption [Web-based university education in Tunisia: Promises and obstacles to its adoption]. *Science, technologie, développement*, *1*(1). **https://doi.org/10.21494/ISTE.OP.2021.0671**

Gratz, E., & Looney, L. (2020). Faculty resistance to change: An examination of motivators and barriers to teaching online in higher education. *International Journal of Online Pedagogy and Course Design, 10*(1), 1-14. **https://doi.org/10.4018/IJOPCD.2020010101**

Hamlaoui, S. (2021). Teachers' resistance to educational change and innovations in the Middle East and North Africa: A case study of Tunisian universities. In R. Ouaissa, F. Pannewick, & A. Strohmaier (Eds.), *Contextualising transformation processes and lasting crises in the Middle East and North Africa* (pp. 171-184). Springer VS. **https://doi.org/pkvb**

Johnson, D. W. (1969). Influences on teachers acceptance of change. *The Elementary School Journal*, *70*(3), 142-153. **https://doi.org/10.1086/460558**

Kaddachi, B. (2017). Les TIC en enseignement supérieur tunisienune intégration encore à ses balbutiements [ICT in Tunisian higher education: Further integration of fledgling systems]. *Revue internationale des technologies en pédagogie universitaire*, *14*(1), 57-68. **https://doi.org/10.18162/ritpu-2017-v14n1-04**

Kalai, L. (2017, April). *Les résistances aux TIC dans le contexte tunisien : à qui la faute* [Resistance to ICTs in the Tunisian context : Whose fault is it]? (Paper presentation). Innovation pédagogique à l'université ou en quoi les TIC contribuent-elles à l'amélioration de l'enseignement/apprentissage du et en français? Tabarka, Tunisia. **https://hal.science/hal-03768151**

Karsenti, T., Poellhuber, B., Roy, N., & Parent, S. (2020). The impact of COVID-19 on higher education and educational technology – Part 1. *International Journal of Technologies in Higher Education*, *17*(2), 5-8. **https://doi.org/10.18162/ritpu-2020-v17n2-02**

Kim, H. W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. *MIS Quarterly*, *33*(3), 567-582. **https://doi.org/10.2307/20650309**

Kin, T. M., & Kareem, O. A. (2017). Measuring teacher attitudes towards change: An empirical validation. *International Journal of Management in Education*, *11*(4), 437-469. **https://doi.org/10.1504/IJMIE.2017.086909**

Lapointe, L., & Rivard, S. (2005). A multilevel model of resistance to information technology implementation. *MIS Quarterly*, *29*(3), 461-491. **https://doi.org/10.2307/25148692**

Laumer, S., & Eckhardt, A. (2012). Why do people reject technologies: A review of user resistance theories. In Y. Dwivedi, M. Wade, & S. Schneberger (Eds.), *Information systems theory – Explaining and predicting our digital society, Vol. 1* (Integrated series in information systems, Vol. 28, pp. 63-86). Springer. **https://doi.org/dwssdj**

Markus, M. L. (1983). Power, politics, and MIS implementation. *Communications of the ACM, 26*(6), 430-444. **https://doi.org/10.1145/358141.358148**

Messoussi, L., Naceur, A., & Ghriss, N. (2018). L'université tunisienne à l'ère du numérique : état des lieux et perspectives didactiques [The Tunisian university in the digital age : State of play and didactic perspectives]. *Educational Journal of the University of Patras UNESCO Chair*, 5(1), 1-16. **https://doi.org/10.26220/une.2848**

Mohamed, N, (2008). I have been doing things this way for many years: Why should I change? Exploring teachers'resistance to professional learning. *New Zealand Studies in Applied Linguistics*, *14*(1), 19-35. **https://alanz.org.nz/...**

Ngafeeson, M. N., & Midha, V. (2014). An exploratory study of user resistance in healthcare IT. *International Journal of Electronic Finance*, *8*(1), 74-94. **https://doi.org/10.1504/IJEF.2014.064003**

OECD (2022). *OECD economic surveys: Tunisia 2022*. **https://doi.org/10.1787/7f9459cf-en**

Pardo del Val, M., & Martínez Fuentes, C. (2003). Resistance to change: A literature review and empirical study. *Management Decision*, *41*(2), 148-155. **https://doi.org/bqk9v5**

Poellhuber, B., Karsenti, T., Roy, N., & Parent, S. (2021). The impact of COVID-19 on higher education and educational technology – Part 3. Remote teaching during the pandemic: Reflections on the challenges and successes of urgent adjustments by university teachers. *International Journal of Technologies in Higher Education*, *18*(1), 3-4. **https://doi.org/10.18162/ritpu-2021-v18n1-02**

Polites, G. L., & Karahanna, E. (2012). Shackled to the status quo: The inhibiting effects of incumbent system habit, switching costs, and inertia on new system acceptance. *MIS Quarterly, 36*(1), 21-42. **https://doi.org/10.2307/41410404**

Righi, H. (2021). *Impact de la congruence des valeurs TI sur l'intention de résister* [Impact of IT values' congruence on intent to resist; Doctoral dissertation, Université de Sherbrooke, Canada]. Savoirs UdS. **https://hdl.handle.net/11143/18858**

Rivard, S., & Lapointe, L. (2012). Information technology implementer's responses to user resistance: Nature and effects. *MIS Quarterly*, *36*(3), 897-920. **https://doi.org/10.2307/41703485**

Sokal, L., Trudel, L. E., & Babb, J. (2020). Canadian teachers' attitudes toward change, efficacy, and burnout during the COVID-19 pandemic. *International Journal of Educational Research Open*, *1*, Article 100016. **https://doi.org/10.1016/j.ijedro.2020.100016**

Taziri, A. B., & Akkari, A. (2020). Les pratiques pédagogiques des enseignant-es universitaires tunisien-nes par les TIC [The pedagogical practices of Tunisian university teachers trough ICT]. *L'éducation en débats : analyse comparée, 10*(2), 233-251. **https://doi.org/10.51186/journals/ed.2020.10-2.e348**

Toto, G. A., & Limone, P. (2021). From resistance to digital technologies in the context of the reaction to distance learning in the school context during COVID-19. *Education Sciences*, *11*(4), Article 163. **https://doi.org/10.3390/educsci11040163**

Zimmerman, J. (2006). Why some teachers resist change and what principals can do about it. *National Association of Secondary School Principals Bulletin*, *90*(3), 238-249. **https://doi.org/b6pxjq**