



Investigating the Shift in EFL Teachers' Attitudes towards ICT Adoption in Response to Global Challenges

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Abstract:

The present paper aims to investigate EFL teachers' attitudes towards ICT use and how the global pandemic of Covid-19 impacts them especially when Various e-learning platforms were used to fit the needs of the new teaching and learning formats and face unprecedented challenges. This study uses an online questionnaire as the primary research tool to reach this end. It was administered to twenty-one (21) teachers in the English department at the Ibn-Khaldoun University of Tiaret, Algeria, who were randomly selected. The results showed that teachers acknowledge the usefulness of ICTs in general and during COVID-19. It was also found that there is diversity in teachers' qualifications and capacities regarding ICT competence and; therefore, ICT training seminars and workshops are urgently needed to meet the present educational requirements.

Keywords: *E- learning; ICT training; global pandemic; teachers' attitudes*

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I. INTRODUCTION

During this global coronavirus pandemic, usually referred to as COVID-19, education witnessed the most significant disruption in its history. Inter-agency Network for Education in Emergencies (INEE) (2020, cited in Mehar & Arora, 2020) reported that university and school closures impacted roughly ninety-four percent (94%) of the world's student population, up to 1.6 billion learners in more than 190 countries and all continents. Practitioners and educators are constantly researching how to keep students on track and maintain education progress. E-learning has become a pertinent alternative to formal education. Students are obliged to log in to online platforms to attend courses and accomplish the school year programs so that they will be able to pass the exams. Teachers must adopt and adapt flexible learning and teaching methodologies and materials. In this respect, the current paper investigates teachers' attitudes towards ICTs and how COVID-19 conditions impact their attitudes in Algeria.

1. Tertiary Education during COVID-19

Throughout the COVID-19 outbreak, the closure of educational institutions has imposed severe changes. Online learning has replaced in-person instruction, and distance education is now commonplace. This lockdown forces schools and universities to use technology-based courses and tools using various online applications and platforms. Google Classroom, Google Meet, Zoom, Moodle, and Facebook are named as helpful. Internet connection is the primary way to deliver knowledge, courses, and communication instead of physical presence to minimise health-threatening viruses. Courses can be asynchronous or synchronous.

Face-to-face and e-learning are two teaching modalities; they have different qualities. Some features of online learning and teaching were found to be helpful during the pandemic. It facilitates the design and delivery of online courses and enables engagement and communication among students, teachers, staff administrators, and even parents. Also, it increases information provision and retention, saving time and improving learning autonomy. Student-student and teacher-student discussion and feedback are also among the online learning implications (eLearning Africa & EdTech Hub, 2020; Vijayan, 2021). In this digital era, COVID-19 is considered a wake-up call to promote teaching and learning via technology.

Collectively, these advantages and points of view towards online learning outline the critical role of teachers in taking part in this transformation process. In addition to traditional classroom engaging skills and competences, Shriner (2015) states seven characteristics of effective online teachers:

1. To be passionate about the subject
2. To be passionate about teaching (teachers as potential mentors)
3. To see the value of online education
4. To be good time manager
5. To be flexible and open to feedback
6. To facilitate classroom community with engaging tone and creativity
7. Trained in online teaching

Educational shifts during this pandemic have placed many challenges on teachers, especially. It seems possible to say that the power of a given situation impacts individuals' behaviour, beliefs, and attitudes. Hence, examining teachers' attitudes towards ICT in view of COVID-19 brings a clear understanding of teachers' likes, dislikes, and fears.

2. Purpose of the Study

The literature on the impact of COVID-19 on teachers' attitudes is relatively nascent. There is earlier work on attitudes towards ICT, but the coronavirus crisis caused serious educational challenges. In this regard, the present paper investigates the external forces and internal influences on teachers' attitudes towards adopting the new teaching modalities and e-learning during COVID-19. In doing so, the following questions are raised:

1. What are teachers' attitudes towards ICT use in the COVID-19 pandemic?
2. In what ways is the global pandemic period likely to have influenced teachers' attitudes towards e-learning?
3. To what extent are teaching and learning successful during COVID-19?

Hypothesising that:

1. Teachers have positive attitudes towards ICT due to the facilities they bring during the global educational closure.
2. Coping with COVID-19 impacts on education will develop teachers' ICT competencies.
3. The success of online learning is related to teachers' performances, the quality of the internet, and technical issues.

II. Methods and Materials:

To conduct this research, a quantitative approach was employed to examine teachers attitudes and explore the factors that influence these attitudes. "Quantitative research approaches are applied to describe current conditions, investigate relations, and study cause-and-effect phenomena" (Gay et al., 2012, p. 9). The survey questionnaire was the main data collection instrument in the present study. It has been selected within the current circumstances of the world pandemic because surveys are often designed to describe current conditions (Gay et al., 2012).

1. Participants and Research Tools

Participants of the present research comprised randomly selected twenty-one (21) teachers in the Department of English at Ibn-Khaldoun University of Tiaret, Algeria, during the summer of the 2020-2021 academic year with 2 to 40 years of teaching experience. They have different areas of expertise, including Didactics, Applied Linguistics and Didactics, ESP, ESP and Didactics, and African American Civilisation. The choice of a single department from a particular university may result in selection bias and minimise sample size; however, due to quarantine conditions, the choice of the population was realistic based on accessibility and availability.

The respondents received an online questionnaire consisting of seven (7) sections; the questions were directed to specific purposes. The first one aims to collect data about teachers' demographic features (educational background, years of experience, and areas of expertise). The second casts light on teachers' perceived importance of ICT. The third section tries to gather information about ICT use in education during the COVID-19 outbreak and what respondents could do during this pandemic, which was the aim of the two following sections. The following section tends to accumulate data about teachers' online experiences during the pandemic and the problems they faced. The last part of the questionnaire focuses on the informants' future expectations and needs.

2. Data Collection and Analysis

An online questionnaire was administered to 21 teachers using Google Forms. Results were organised, arranged, tabulated, and analysed using Google Forms and Excel spreadsheets.

III. Results and discussion :

The purpose of this section is to display a detailed analysis of the gleaned results.

1. CommonlyUsed Online Platforms

In response to the pandemic, teachers were forced to put online learning into practice. To keep online learning running, they applied various activities and used multiple platforms, either the ones offered by their universities or others of their own choice. These digital learning tools are free. More illustrations are found in the table below.

Table 1. The Used Online Platforms

Types of Platforms	Number of users
Coursera	1
Moodle	6
Google Meet	1
Google Classroom	1
Facebook	2
Zoom	4
Others	9
None	2

Note: The respondents used many platforms simultaneously during the lockdown.

When analysing the characteristics of the available online learning platforms at these times, it was noticed that the majority of university teachers make use of Moodle or other platforms of their own choice, which confirms that within the use of ICT, teachers have great control over course content and choice of materials than in traditional settings. Respectively, the results postulated in Table 1 concur with the findings found in a study conducted by Sánchez Mendiola et al. (2020), which demonstrated that teachers opt for the use of email and social networks, Facebook, for instance, in their academic activities to contact students. As well as they make frequent use of Google Classroom, Moodle, and Google Meet for academic work. Zoom is preferred for synchronous sessions to create an adequate virtual learning environment.

2. ICT Underpinnings during the Pandemic and their Perceived Importance

Table 2. ICT Implications

<i>ICT use in education during COVID-19....</i>	Percentages (%)				
	SD	D	N	A	SA
Facilitates teaching and learning processes	9,52	14,29	23,81	23,81	28,57
Improves the quality of education	23,81	14,29	33,33	9,52	19,05

Increases students' engagement in classes	9,52	23,81	28,57	38,10	00
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Scale: SD= Strongly Disagree, D= Disagree, N= Neutral, A= Agree, SA= Strongly Agree

It is pivotal to mention that the results obtained in this study revealed that digital technologies and resources were among the salient solutions for learning under lockdown to minimise educational disruption. During physical distancing and quarantine, ICT was found to have prominent leverage in ensuring these educational transformations. As illustrated in Table 2, results indicate that (52,38 %) of the respondents agree that ICTs facilitate teaching/ learning during this time, and (38,10 %) agree that they increase students' engagement in classes. These findings concur with Brush et al. (2008) advocate that ICT allows students to access digital information and resources effectively and make knowledge acquisition more accessible through accessing, selecting, organising, and interpreting information and data, i.e., they develop self-direction or regulation.

Only (28,57 %) of the informants agree to improve the quality of education. On the other hand, (38,10 %) of them disagree and (33,33 %) were neutral. This explains that when it comes to accessing research and materials, the use of ICTs cannot be limited only to the benefits they provide; however, several difficulties are found to hamper the process of ICT integration. Despite acknowledging the usefulness of ICT in changing teaching and learning for the better in various ways, such as promoting autonomy, capability, and creativity (Lowther et al., 2008), the overall results imply that constraints or barriers implicated in its usage still exist.

Table 3. ICT Perceived Importance

<i>Statements</i>	Percentages (%)				
	SD	D	N	A	SA
ICT integration in teaching/ learning is interesting	9,52	4,76	9,52	38,10	47,62
You enjoy teaching via online platforms	9,52	23,81	14,29	38,10	14,29
Online teaching format is motivational	14,29	19,05	33,33	19,05	14,29

Scale: SD= Strongly Disagree, D= Disagree, N= Neutral, A= Agree, SA= Strongly Agree

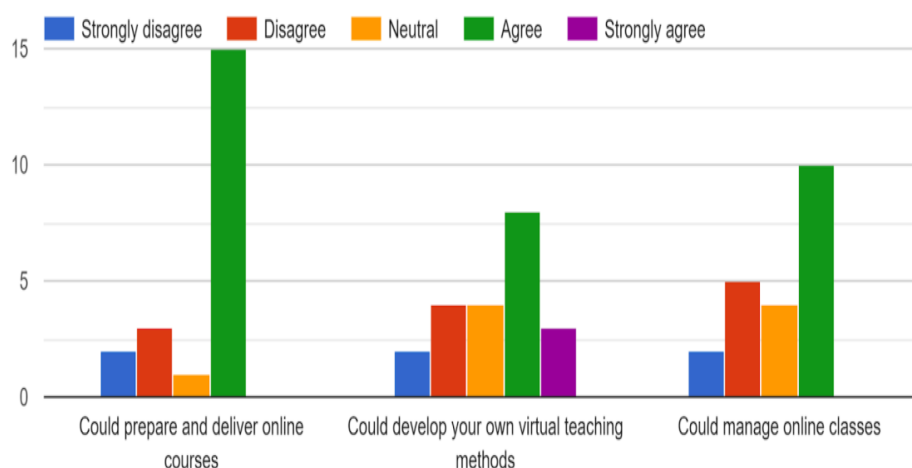
Seeking answers on whether teachers perceive the use of ICT as essential and if they are satisfied with online learning/teaching formats. Table 3 demonstrates that (85,72 %) Most teachers agreed and strongly agreed that the embodiment of such technologies is interesting. More than half of them enjoy teaching through online platforms. These results concur with studies that measured teachers' satisfaction with the virtual teaching/learning environment conducted by Ruiz-Aquino (2022), which revealed that university teachers show little resistance to change and a willingness to manage the unprecedented alternatives that menaced the continuity of education.

Yet, only (19,05 %) of teachers agreed and (14,29 %) strongly agreed that online teaching is motivational compared to (33,33 %) of teachers participating in this survey did not decide

(who were neutral) and (33,34 %) who had a kind of disagreement. ICT-related initiatives have a variety of complexities which influence users' technology adoption decisions. However, on a mandatory basis, teachers were forced to adapt to this new standard of the virtual educational system, which requires a vast deal of innovation to overcome the challenges encountered in this backdrop of historical change by providing solutions to problem-based activities, course content, material selection, and technical pitfalls. Therefore, teachers were found to complement the role of administrative staff and government practitioners. The section below provides a detailed demonstration of teachers' experience and actions.

3. ICT Experiences, Pedagogical Knowledge and Materials' Adequacy

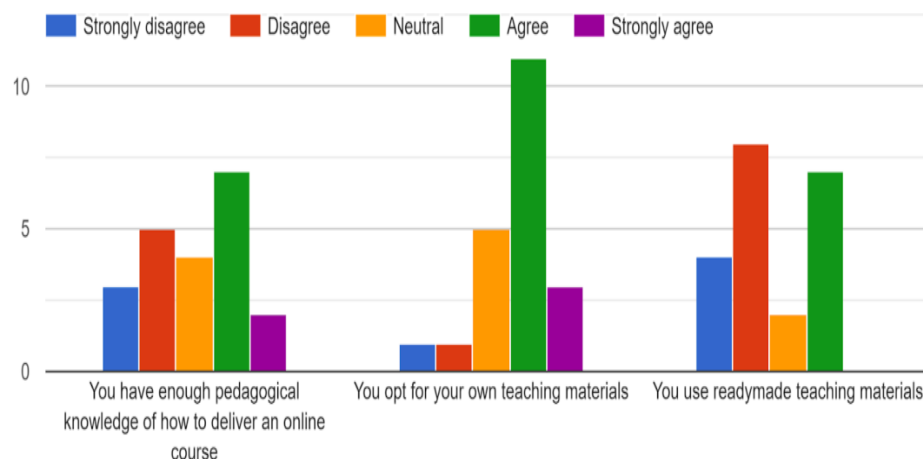
Figure 1. Teachers' ICT experiences during COVID-19



The figure portrays detailed results from asking teachers about their online teaching experiences during the pandemic. As it is described, the vast majority of the participants could prepare and deliver online courses. The majority also could develop their virtual teaching methods. In a similar vein, a significant proportion of them were able to manage online classes, too. These findings show that teachers-built competencies in the capacity to use digital multimedia during the period of health crisis. They developed a sense of adaptation to the new mode of education. These results coincide with data obtained by an earlier survey work with Ortiz Cruz and Ruiz-Aquino (2019), which displayed that adaptation is a crucial determinant for innovation and converting formal changes into structural alternations.

Furthermore, the present study had questions regarding teachers' pedagogical knowledge and adopting adequate online teaching materials and resources. Figure 2 displays more details.

Figure 2. Pedagogical knowledge and materials' adequacy



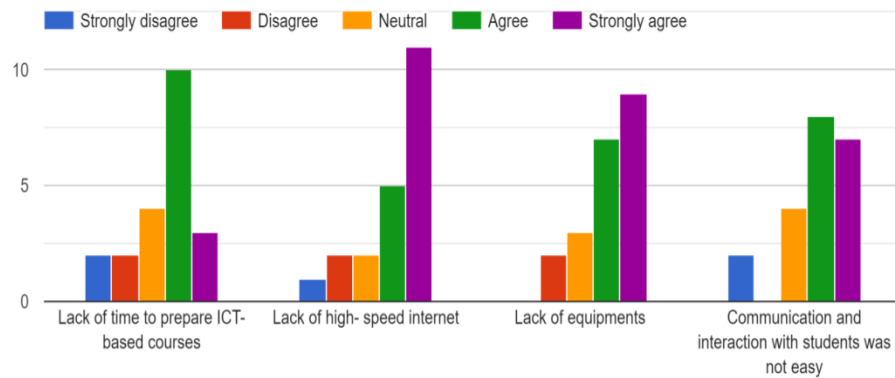
The figure shows that (9,52%) of the respondents strongly agreed and (33,33%) agreed that they had enough knowledge of pedagogy to deliver an online course. Most of the questioned teachers agree that during the pandemic, they opted for teaching materials of their own choice. Therefore, the vast majority show a disagreement towards utilising ready-made course materials. In conjunction with these results, Martínez-Garcés and Garcés-Fuenmayor (2020) highlighted that even though teachers could adopt and adapt several digital materials and digital pedagogies, a variety of gaps in digital skills were found. They indicated that most university teachers could develop digital competencies such as collaboration and problem-solving, communication, computerisation, and information literacy. In contrast, the weakest are digital content knowledge, digital pedagogy knowledge, and innovative competence. These advocates are justified by the high rate of respondents who strongly disagreed and disagreed about having the pedagogical knowledge to participate appropriately in online learning mode and by the challenges they faced.

4. Threats of ICT Use during the Pandemic

The internet brought this concept of electronic learning; it offers an avalanche of Open Educational Resources (OER) and Massive Open Online Courses (MOOCs), which provide extensive access to education; however, there are still many problems related to time, internet connectivity, equipment and students' readiness that the respondents of the questionnaire highlighted. It is crucial to point out that despite the advantages of using ICT in education during COVID-19, as demonstrated in the previous section, teachers faced several constraints while using such digital resources and platforms.

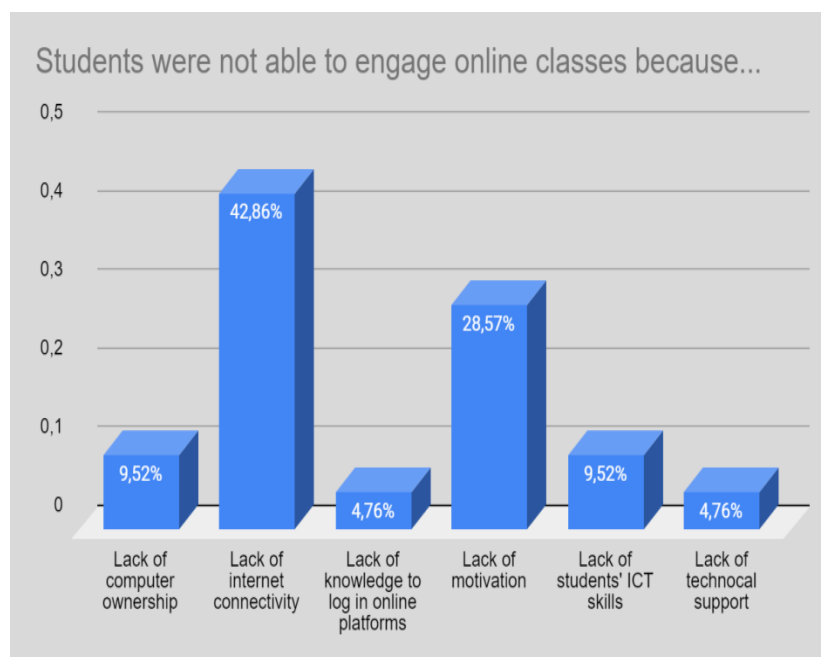
Figure 3.The problems teachers faced during COVID-19

The problems you faced during Covid-19



This figure shows that most of the surveyed teachers agreed that time was a barrier to preparing ICT-based courses and a lack of good internet connectivity, equipment, and communication and interaction with students. The reported difficulties that university teachers encountered when dealing with the pandemic are consistent with findings reported by Silas and Vázquez (2020), asserting the increase in the number of work hours and workloads, such as preparation and group management in addition to a low rate in the frequency and quality of interaction with their students. In light of this, other student-related problems have been reported here.

Figure 4.Students' ICT-related problems



(42,86%) the participating teachers stated that students could not engage in online classes due to bad internet connectivity, and (28,57%) declared that they needed to be more highly motivated. (9,52%) of them claimed that among the problems related to students is the lack of

computer ownership and ICT skills. These results demonstrated that there is a potentially wide range of internal and external factors that overlap, which can, in turn, influence technology adoption and teachers' participation in virtual learning environments.

To sum up, the results found to menace teachers' use of digital technologies are consistent with Fu's (2013) review of factors influencing the use of ICT. He summarises the external factors as including lack of technology availability, shortage in accessibility of ICT equipment such as computers and software, insufficient time to plan for instruction or courses together with "inadequate technical and administrative support, school curriculum, school climate and culture, faculty teaching load and management routine" (Fu, 2013, p. 117). Regarding internal factors related to teachers, Fu (2013) has also identified an understanding of ICT use; beliefs which may conflict with the application of ICT; attitudes toward technology integration; perceptions, including intention or motivation to use ICT; self-confidence and knowledge; technology skills; readiness to use ICT; and technology self-efficacy.

5. Teachers' Attitudes, Preferences, and Future Expectations

Tracking the change and shift in attitudes towards e-learning, teachers were asked about their preferences regarding the learning mode. The primary outcome variable in this research is teachers' online learning retention. Despite all these threats and challenges, (76, 2 %) of the participants indicated that keeping online learning mode during the post-lockdown period of COVID-19 could be helpful. This would provide new opportunities for renovating the educational system and for effective technology integration. Therefore, all the teachers see that it is high time for the government to take serious actions and put words into practice. These findings are complemented by the findings of Ortiz Cruz and Ruiz Aquino's (2019) study, which exhibits that teachers display positive attitudes towards virtual learning environments dominated by the extensive use of digital technologies. Another similar study by Abbott and Faris (2000) confirmed that positive attitudes towards ICT use increased after participation in technology preparation courses or programs. To wrap it up, Attitudes result from an individual's feelings towards the object or thing in question and are reflected in behaviour, thoughts, and beliefs. Similarly, cognitive and affective components of attitudes affect the behavioural component (Svenningsson et al., 2021).

Although the distance learning policies were undertaken as an immediate response to the pandemic, in post-COVID-19, online learning is seen to continue to be used to deliver education even after reopening schools. This crucial fact in this study is inconsistent with the view that teachers under pressure may be unwilling and hesitant to undergo challenging circumstances (Fu, 2013). However, within the current educational situation, teachers' conflicting attitudes and beliefs did not resonate in their practices; they adopted solutions to adapt and overcome unprecedented problems. As such, it is paramount to identify the characteristics of e-learning and explore the influencing factors, for instance, teachers' attitudes, to improve measures and decisions. Eventually, "the process of reconfiguration of education has started and must continue during the post-pandemic period" (Ruiz-Aquino et al., 2022, p.131).

IV. Conclusion and Recommendation:

The COVID-19 period was a key motif and situation that allowed teachers to use digital materials and resources and acquire ICT knowledge. By providing insights into what teachers could do and how to implement digital technology for remote learning during school closures, this paper seeks to help make decisions and choices that will ensure the effective use and

integration of digital resources and approaches to teaching/learning during the COVID-19 pandemic and beyond. It is important to note that determining the problems is the stepping stone to finding adequate solutions for better implementation and improvement.

After conducting a deep analysis of the data that was quantitatively gathered through the distribution of an online questionnaire, from a simple random sample of 21 EFL teachers at the English department of Ibn-Khaldoun University of Tiaret, Algeria, it can be observed that factors influencing ICT use are divided into internal and external factors. Respectively, results reveal significant gaps in internet accessibility, electronic equipment, and other online learning modalities. In addition to the fact that within the framework of the suspension of traditional face-to-face classes, university teachers believe that a virtual learning environment under emergency implies a valuable transformational point in supporting the development of e-learning. On the other hand, the results above indicate that many teachers thought of their online teaching activities and practices as problematic and their satisfaction still needs to be improved. Therefore, drawing upon such paradoxical consequences is necessary to judge what action should be taken.

Equally important, the government, experts, and policy-makers had better put ICT training seminars and workshops for teachers and students at the core of their decisions for effective technology integration to transform education and operate effectively in the new world. The infrastructure and delivery methods used by university institutions should be modernised to enrich the learning opportunities with accessible learning resources. Teachers' education programmes should focus on training teachers to incorporate technology in their teaching strategies, pedagogies, practices, and activities rather than merely teaching them how to utilise hardware and software (Abbott & Faris, 2000). Strictly speaking, these new education formats require "trained and empowered teachers who can make teaching decisions based on the curricular guidelines in each country and the conditions and circumstances of their pupils" (UNESCO, 2020, p. 10). Finally, based on the obtained findings and the contributions of other researchers' studies, it is possible to say that these educational shifts in an immediate period have palpably influenced teachers' attitudes. Although the teachers confronted many difficulties and fears dealing with online learning and its technologies, such issues and doubts transformed into positive attitudes and improved their competencies using various technological resources.

While this research provides valuable insights into the impact of COVID-19 on teachers' attitudes towards using ICTs, different limitations and considerations should be considered. The current study is cross-sectional, capturing teachers' attitudes during COVID-19. There was no focus on teachers' pre-pandemic attitudes. The study may be limited to temporal factors rather than making a comparative analysis to understand the shift in those attitudes. Delving into understanding teachers' attitudes in a particular situation is crucial in defining the patterns found within this type of circumstance in enough detail so that individuals can learn how to manage and apply technology to similar situations. Along similar lines, the study does not specify any ICT used or preferred, so it is essential to consider that multiple tools may impact teachers' attitudes differently. Nevertheless, the theme of ICT discussed in this paper was large enough to encompass any device, system, or platform that bring together and allow individuals or organisations to interact in a digital environment, simply because today, technology is of fast and rapid change that teachers require high-level of digital capacities, skills, and competencies to be able to face the new educational requirements.

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