Journal of Organizational Behavior Studies

Örgütsel Davranış Çalışmaları Dergisi

THE ROLE OF DIGITAL EMPOWERMENT IN DEVELOPING SELF-EFFICACY AMONG LECTURERS AT THE INTENSIVE LANGUAGE CENTER AT THE ALGERIAN UNIVERSITY: STRUCTURAL EQUATIONS MODELING ANALYSIS

CEZAYİR ÜNİVERSİTESİ YOĞUNLAŞTIRILMIŞ DİL MERKEZİ ÖĞRETİM GÖREVLİLERİ ARASINDA ÖZ-YETERLİLİĞİN GELİŞTİRİLMESİNDE DİJİTAL GÜÇLENDİRMENİN ROLÜ: YAPISAL EŞİTLİK MODELLEME ANALİZİ

Dr. Ahlam THAMRI
Ziane Achour University Djelfa, Algeria
ORCID iD: 0000-0002-0387-6927 , ahlam.tamri@univ-djelfa.dz
Dr. Rima Affaf, HARIZI
Ziane Achour University Djelfa, Algeria
ORCID iD: 0009-0000-6166-6971 , ra.harizi@univ-djelfa.dz
Prof. Dr. Mokhtar, RABHI
Ziane Achour University Djelfa, Algeria
ORCID iD: 0000-0002-0284-8844, Mo.Rabhi@Univ-Djelfa.Dz
Prof. Dr. Mohammed Said, DJOUAL
Ziane Achour University Djelfa, Algeria
ORCID iD: : 0000-0002-4862-3712, Djoual@univ-djelfa.dz

ABSTRACT

This study aims to identify the impact of digital empowerment on self-efficacy among English teachers at the Language Teaching Center. The digital empowerment and self-efficacy scale was applied to a sample of 201 teachers working at the Intensive Language Center, which specializes in improving students' English at the Algerian university. The questionnaire was distributed in paper form to the centers and electronically via official pages and e-mail. SPSS v27 was used to analyze the characteristics of the study sample, and Smart-PLS (4) was used to test the hypotheses using partial least squares structural equation modeling (PLS-SEM). The study found a weak effect of digital empowerment on self-efficacy among English teachers, and the main hypothesis was accepted with reservations. This is due to the small effect size (F2 value=0.062). Based on these results, the study concludes with a set of recommendations to enhance digital empowerment by providing teachers with the necessary technological tools to support the educational process.

Keywords: Digital empowerment, lecturers' self-efficacy, indirect experience, social persuasion, physiological arousal.

ÖZ

Bu çalışma, Dil Öğretim Merkezi'ndeki İngilizce öğretmenleri arasında dijital güçlendirmenin öz yeterlilik üzerindeki etkisini belirlemeyi amaçlamaktadır. Dijital güçlendirme ve öz yeterlilik ölçeği, Cezayir üniversitesinde öğrencilerin İngilizcesini geliştirme konusunda uzmanlaşmış Yoğunlaştırılmış Dil Merkezi'nde çalışan 201 öğretmenden oluşan bir örneklem üzerinde uygulanmıştır. Anket, merkezlere kağıt formatında ve resmi sayfalar ve e-posta yoluyla elektronik olarak dağıtılmıştır. Çalışma örnekleminin özelliklerini analiz etmek için SPSS v27, hipotezleri kısmi en küçük kareler yapısal eşitlik modellemesi (PLS-SEM) kullanarak test etmek için ise SmartPLS (4) kullanılmıştır. Çalışma, İngilizce öğretmenleri arasında dijital güçlendirmenin öz yeterlilik üzerinde zayıf bir etkisi olduğunu ve ana hipotezin çekincelerle kabul edildiğini bulmuştur. Bu, küçük etki büyüklüğünden (F2 değeri= 0,062) kaynaklanmaktadır. Bu sonuçlara dayanarak, çalışma, öğretmenlere eğitim sürecini desteklemek için gerekli teknolojik araçları sağlayarak dijital güçlendirmeyi artırmaya yönelik bir dizi öneriyle sonuçlanmaktadır.

Anahtar kelimeler: dijital güçlendirme, öğretim elemanlarının öz yeterliliği, dolaylı deneyim, sosyal ikna, fizyolojik uyarılma

1. Introduction

Nowadays, the field of education is witnessing rapid technological development, making it necessary to employ technology in classrooms and invest in it to efficiently transfer knowledge to students. Lecturers are called upon to know how to manage various technological tools, such as electronic boards, equipped classrooms, and the internet, and to invest in their use to attract students' attention. In this regard, language education requires the use of electronic means, such as audio and video, face-to-face and remotely, to master various language skills. In contemporary literature, a lecturer's ability to manage technological tools is anointed as digital empowerment, a pillar indicator of self-efficacy. Digital empowerment of lecturers and the enhancement of their skills in dealing with information and technological resources can improve their self-efficacy in teaching. The importance of this research lies in this idea:

Universities today strive to improve methods of knowledge exchange and applied research by employing modern technological tools and integrating them into the educational process, whether in language teaching or other fields.

In Algeria, centers devoted to teaching English, French, and Spanish are a new trend. These centers strive to improve students' language learning, mastery, and use in their academic and personal lives. These centers teach students and employees across different categories, including lecturers and employees working outside the university, as well as PhD students.

The plan is to improve their language skills and engage them in scientific research, publishing, teaching, and overseas training. Hence, this requires the availability of lecturers with high self-efficacy in teaching and digital empowerment to use technological media. Therefore, the research aimed to examine the extent to which digital empowerment among professors in these centers affects their teaching self-efficacy. The study sample consisted of 201 English lecturers from several different centers in the Algerian university.

By reviewing previous studies on both digital empowerment and self-efficacy, we observed a lack of research linking these two variables. Therefore, we sought to highlight the impact of digital empowerment on lecturers' self-efficacy, addressing a research gap, particularly given that digital empowerment is a contemporary topic. This study differs from previous research by focusing on the following gaps:

- Spatial gap: This study differs from previous studies in its geographical location.
- Temporal gap: This study differs from previous studies in its duration.
- Application gap: This study differs from previous studies in its use of statistical analysis, specifically structural equation modeling using the least squares method.

2. Literature review

2.1. Digital Empowerment

The word empowerment has emerged and spread for many political and social reasons. The concept of empowerment has been associated with many fields. Likewise, digital empowerment concerns the digital participation of communities and reflects adaptation to digital technologies and the ability to use them to access and benefit from information (Tamang & Reddy, 2023). Digital empowerment refers to individuals' ability to effectively use digital technologies to enhance their capacities in the information society. Thus, an

individual who possesses digital skills and uses them to develop life skills is considered digitally empowered (Akkoyunlu et al., 2010).

Empowerment has been defined and used in the literature for many reasons. The latter has indicated that there are many strategies for using the digital environment as an excellent resource for accessing important information, a phenomenon known as digital empowerment (Martinez et al., 2021). Empowering communities and individuals' desires to develop life skills. Meanwhile, digital empowerment seeks to provide individuals with new ways and capacities to participate in society and express themselves (Hans, 2018). Digital empowerment means increasing control over the skills needed to adapt to information technology in society (Mäkinen, 2006).

Digital technology is the core of digital empowerment. Digital empowerment is also called the spiral process because it tracks changes and aligns with the progress of society and its surrounding environment. Digital empowerment has been measured across multiple levels in the literature: individuals, groups, students, and lecturers (Safira & Irwansia, 2019). In addition, Batriani et al. (2023) argued that digital empowerment is a comprehensive, multi-stage process that comprises several steps aimed at improving individuals' ability to access the best opportunities and to influence society by staying up to date.

Peter (2018) suggested four strategies to empower the education sector digitally: Training individuals to use ICT, training specialized human resources, and providing technical and financial support. The comprehensiveness of training programs should include aspects related to ICT procedures. Collaboration between universities, the state, civil society, and the private sector to develop digital content and platforms. Promoting digital inclusion projects in communities.

2.2. Digital Empowerment Scale

Tamang and Reddy (2023) proposed the Student Digital Empowerment Scale (STDES). It consists of four dimensions with 51 items. Technological competence (TC) has 22 items, technological access (TA) has 9 items, digital collaboration and communication (DC) has 10 items, and digital security and ethical use of technological resources (DE) has 10 items. Technological competence (TC) is defined as the ability of lecturers to use and apply technological tools in the teaching and learning process, as well as the ability to manage them. Technical access (TA) refers to the use of Internet services to exploit, store, and retrieve data. Meanwhile, digital collaboration and communication (DC) refers to the use of digital platforms for interaction and participation. Security and ethical use of technology resources (DE) is the ability of lecturers to protect digital data and devices.

In addition, Ezz El-Din and Al-Shraida (2021) prepared a questionnaire for lecturers on digital empowerment. It consists of thirty items. The first axis examines digital technology in education (9 items). The second axis is specific to digital communications (5 items). The third axis concerns evaluating the digital environment (5 items). The fourth axis concerns the availability of a supportive digital environment (11 items). Correspondingly, the study by Kong et al. (2019) developed the Digital Empowerment Scale to assess young learners' perceived competence with digital technologies in the context of primary school. It consists of (1) meaning, (2) impact, (3) belief in creativity, and (4) belief in competence.

On the other hand, individual self-efficacy is an internal motivational variable that embodies the basic aspects of human effectiveness, such as effort and perseverance in achieving goals. As for lecturers' self-efficacy, it increases with perseverance at work and affects their teaching practices, teaching behaviours, confidence, and commitment (Klassen & Tze, 2014). Self-efficacy also guides individuals' beliefs about their ability to achieve a successful academic career. In this context, educational research has shown that lecturers' self-efficacy affects their teaching behaviours and even influences students' motivation and achievement. In contrast, lecturers with low self-efficacy experience difficulties in teaching and stress, leading to dissatisfaction. Therefore, self-efficacy affects human achievement in various settings such as education, business, health, and sports (Klassen & Chiu, 2010).

From a similar perspective, lecturers' self-efficacy is defined as confidence in their teaching abilities, which enables them to provide high-quality education. These abilities include pre-teaching activities (lesson planning), intra-teaching activities (effective classroom management and classroom climate activation), cognitive activities, and post-teaching activities (reflection on teaching) (Hayat et al., 2023). Shahzad and Naureen (2017) argued that lecturers exhibit high levels of self-confidence and positive attitudes because they are in control of achieving success. They also accept new technologies and new methods.

In this context, lecturers' self-efficacy refers to their belief in their ability to facilitate students' engagement in the learning process. (Solari, 2014). Lecturers' self-efficacy has a vital role in achieving their goals and how easily they deal with the educational challenges they face (Hussain & Khan, 2022). Self-efficacy also reflects teachers' capacity to handle challenging tasks effectively in their professional activities. It is reflected in the impact on academic outcomes, such as student achievement, and motivating them to do their best. (Barney et al., 2019). From a different viewpoint, lecturer self-efficacy is clarified as the confidence and belief in one's ability to teach, implement, and create positive change, openness to new ideas, and the application of new teaching strategies (Gordon et al., 2023).

A range of positive and negative factors influences teachers' self-efficacy. Gordon et al. (2023) identified three factors that increase teachers' self-efficacy: environmental factors, including the school/university providing high-quality training materials, supportive leaders, collaborative colleagues, and positive student engagement. Personal/cognitive determinants are linked to teaching experience and understanding of legislative documents. Behavioural determinants are linked to planning and implementing curriculum reform. However, factors that reduce lecturers' self-efficacy include environmental determinants such as a lack of school/university support for implementing teacher reform, unsupportive leaders, workload, lack of time, overcrowded classrooms, negative student engagement, gender discrimination, and a lack of leadership support. Personal/cognitive determinants include insufficient experience in teaching new requirements, insecurity, and anxiety about the difficulty of influencing students. Finally, behavioural factors include the refusal to implement changes stipulated in the organization's legislation.

Additionally, Williams et al. (2023) claim that elements such as environments, attitudes, beliefs, intentions, support, policies, and resources all impact lecturer self-efficacy in integrating technology.

2.3. Self-Efficacy

Lecturers' self-efficacy is also of great importance. This importance is evident in classroom organization, emotional support, student achievement, and motivation, indicating that teacher self-efficacy is linked to the quality of the classes provided (Gordon et al., 2023). A study by Guoyan et al. (2023) found that the quality of the e-learning system and lecturers' self-efficacy are crucial factors in making lecturers willing to continue their online practices. Berg et al. (2023) also found that altruism, personal identification with teaching, and job security were the most powerful reasons for entering teaching.

Hence, teacher self-efficacy was associated with motivations for entering initial teacher education. Hershkowitz et al. (2023) assume that the emotion of success and self-confidence regarding the integration of technology into teaching is one of the most influential factors affecting lecturers' well-being and professional evolution and has a significant influence on student learning. Furthermore, Shah and Batari (2023) assumed that lecturers' self-efficacy is a psychological key in skilled development opportunities, and it impacts students' learning and academic attainment.

All in all, the most influential factors affecting the lecturer's self-efficacy are divided between internal and external factors. Internal factors are connected to the lecturer's characteristics. They are embodied in gaining experience and in continuous improvement to develop performance, as well as in developing emotional intelligence to deal with students and keep pace with changes in teaching methods. External factors are connected to the surrounding external environment and include the availability of resources necessary for the teaching process, the availability of technology, and supportive leadership. Figure 01 outlines this.

Figure 1.
Factors affecting teacher self-efficacy.
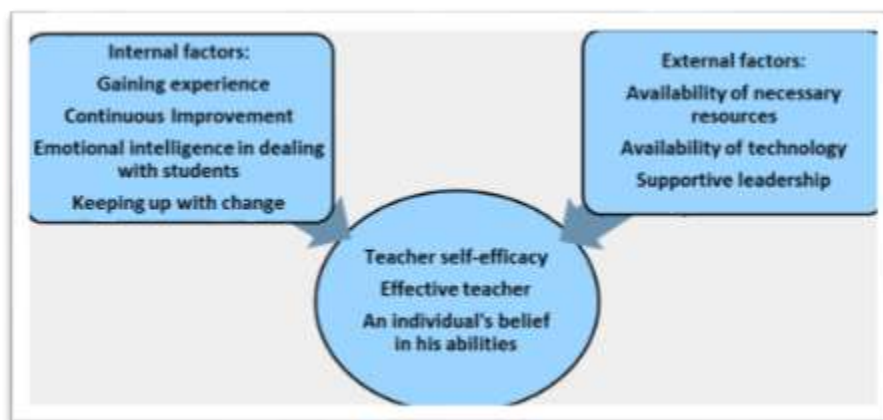
Sources: elaborated by researchers.

To answer this research question, According to Bandura (1982) self-efficacy is influenced by various phenomena, including changes in coping behaviors resulting from different influence patterns, the level of physiological stress responses, resignation and despair following failures, the illusion of inadequacy, and the rise of self-interest. Based on the above, we aim to investigate the impact of digital empowerment on self-efficacy. To answer this research question, we formulated the following hypotheses:

- **H1: Digital empowerment significantly influences the self-efficacy of English lecturers in intensive language centres.**
- **H11**: Digital empowerment in teaching significantly influences the indirect experience of English lecturers in intensive language centres.
- **H12**: Digital empowerment significantly influences the social persuasion of English lecturers in intensive language centres.
- **H13**: Digital Empowerment significantly influences the physiological arousal of English lecturers in intensive language centres.

3. Methodology

The questionnaire was distributed to 201 lecturers of intensive language centres at Algerian universities. After the arbitration of the questionnaire with lecturers in the field, the validity of the measurement tool was ensured. The questionnaire was developed from a literature review, as shown in Table 1. The first part of the questionnaire includes demographic variables: age, gender, and experience of the respondent, while the second axis includes questions about the first variable: digital empowerment in its dimensions, digital technologies in teaching, digital communications, digital assessment, and supportive digital environment. The third axis includes the self-efficacy variable and its dimensions: indirect experience, social persuasion, and physiological arousal. The five-point Likert scale was used as follows: (5 strongly agree - 4 agree - 3 moderately agree - 2 disagree - 1 strongly disagree).

Table 1.
Questionnaire variables, dimensions, and sources

Variable	Dimensions	Ferries	Source
Digital Empowerment	Digital Technologies In Teaching	07	(Yousef Ezzeldin & Mubarak Alsharidah, 2021)
	Digital Communications	04	
	Digital Evaluation	03	
	Supportive Digital Environment	03	
	Indirect Experience	03	
	Social Persuasion	03	(Evers et al., 2002)
Self-Efficacy	Physiological Arousal	03	(Solari, 2014)
Total		26	

Sources: elaborated by researchers.

3.1. The Research Population And Sample

The research community for this study consisted of all English language professors at intensive language centers in Algerian universities. The electronic questionnaire was distributed randomly via the targeted professors' websites and online links, in addition to a paper questionnaire. 201 valid questionnaires were retrieved for analysis. A simple random sample was used. The distribution period lasted three months, from early July 2025 to mid-September 2025. Table 2 shows the characteristics of the study sample.

Table 2
Characteristics of the study sample

Demographic variables		Frequency	The Percentage %
Gender	Male	63	31.3
	Female	138	68.7
	Total	201	100.0
Age	From 25 to 30	63	31.3
	From 31 to 36	72	35.8
	From 37 and over	66	32.8
	Total	201	100.0
Experience	Less than 5	63	31.3
	From 6 to 10	138	68.7
	From 11 or more	0	0
Total		201	100.0

Source: elaborated by researchers.

4. RESULTS

In the present research paper, Smart-PLS 4 software was used to examine 201 questionnaires in two stages. The first stage concerns the measurement model to determine its validity and reliability. The second stage analyzes the structural model (Al-Ali et al., 2024). Thus, the study employed variance-based SEM techniques to investigate the interrelationships between latent variables (Ahmad & Hassan Zia, 2023).

Structural equation modeling using partial least squares (PLS-SEM) is the optimal choice for this study. This approach is preferred over CB-SEM based on the specific conditions of each. According to Hair et al. (2011), PLS-SEM is used when the goal is to predict the main target structures or identify the structures that influence them. This serves the objective of the current study: to determine the effect of digital empowerment on the target self-efficacy structure. CB-SEM, on the other hand, is used when the model is non-sequential and contains circular relationships, which is not suitable for the study model.

4.1 Measurement Model Assessment

According to Hair et al. (2021), Convergent validity refers to how closely a construct can explain the variance of its indicators. The measure used to assess the convergent validity of a construct is the average variance extracted (AVE) of the indicators. The minimum acceptable AVE is 0.50, meaning that the construct explains 50 per cent or more of the variance of the indicators that make up the construct; composite reliability and factor loadings enhance the reliability of the model (Khan & Hussain, 2020).

Table 3 shows that the value of the average variance extracted (AVE) exceeded the recommended limit of (0.50). The factor loadings of the indicators were also reviewed, and they should exceed the threshold of 0.708. As Table 3 shows, all indicators exceeded the required threshold except for Sup D3 , which states that audio and video media are available in the digital content of the lessons, may be due to the respondent's lack of understanding of its content, or it does not express the meaning of the latent variable to which it belongs. which was deleted because its value was less than the threshold. The composite reliability (CR) scores for all constructs exceeded the threshold of 0.7, revealing strong internal consistency within the constructs and confirming the convergent validity of the standard model.

Figure 1.
Research Model Measurement model
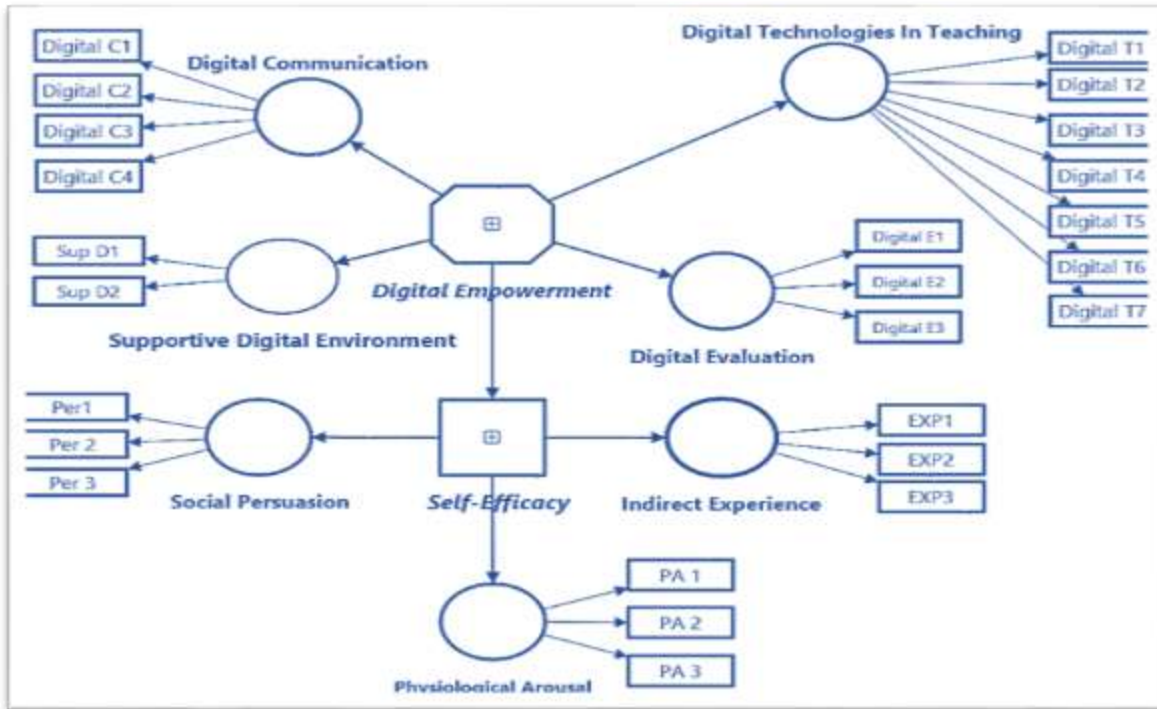
Source: Smart-PLS4 output.

Table 3

Assessing convergent validity

Construct	Items	Factor loading	Composite reliability	AVE
Digital Communication	Digital C1	0.782	0.893	0.676
	Digital C2	0.828		
	Digital C3	0.844		
	Digital C4	0.834		
Digital Evaluation	Digital E1	0.874	0.737	0.535
	Digital E2	0.892		
	Digital E3	0.211		
Digital Technologies In Teaching	Digital T1	0.857	0.956	0.757
	Digital T2	0.919		
	Digital T3	0.869		
	Digital T4	0.929		
	Digital T5	0.677		
	Digital T6	0.919		
	Digital T7	0.895		
Indirect Experience	EXP1	0.757	0.731	0.507
	EXP2	0.915		
	EXP3	0.332		
Physiological Arousal	PA 1	0.820	0.856	0.665
	PA 2	0.826		
	PA 3	0.800		
Social Persuasion	Per 2	0.923	0.795	0.571
	Per 3	0.673		
	Per 1	0.638		
Supportive Digital Environment	Sup D1	0.813	0.740	0.588
	Sup D2	0.718		

Notes: Criteria: composite reliability >0.708 , AVE > 0.5.(Hair Jr et al., 2021). Items deleted: Sup D3,due low loading.

Source: Smart-PLS4 output

4.2 Discriminant Validity

Discriminant validity is a crucial indicator of construct validity. It explores how well a test measures the concept it was designed to measure. This indicator involves analysing the different constructs in the model, each one separately. It is the contrary of convergent validity, which focuses on the agreement between the measures of the same construct (Lim, 2024). As stated by Hair et al. (2021), the discriminant validity is assessed using three criteria, namely the cross-loading index, the Fornell and Larcker criterion, and the ratio of heterogeneous traits to univariate traits (HTMT) matrix.

The cross-loading index indicates that questions measuring a particular latent variable do not measure another latent variable by ensuring that each item has a higher correlation value with its own latent variable than with other latent variables.

The results of Table 4 indicate that the questions measure the latent variable to which they belong because their correlation value is higher with their latent variable and lower with other latent variables. It confirms that each indicator belongs to the latent variable to which it belongs and measures.

Table 4

Cross Loading

Item	DC	DE	DT	IE	PA	SP	SD
Digital C1	0.782	0.625	0.557	0.165	0.470	0.036	0.088
Digital C2	0.828	0.608	0.694	0.126	0.215	0.006	0.002
Digital C3	0.844	0.635	0.733	0.199	0.339	0.087	0.011
Digital C4	0.834	0.892	0.701	0.227	0.145	0.079	0.040
Digital E1	0.782	0.874	0.557	0.165	0.470	0.036	0.088
Digital E2	0.834	0.892	0.701	0.227	0.145	0.079	0.040
Digital E3	0.093	0.211	0.050	0.137	0.032	0.024	0.235
Digital T1	0.700	0.608	0.857	0.154	0.238	0.129	0.158
Digital T2	0.635	0.513	0.919	0.272	0.077	0.089	0.112
Digital T3	0.631	0.508	0.869	0.338	0.230	0.016	0.014
Digital T4	0.890	0.803	0.929	0.249	0.280	0.022	0.013
Digital T5	0.380	0.261	0.677	0.320	0.445	0.008	0.008
Digital T6	0.859	0.796	0.919	0.261	0.228	0.081	0.021
Digital T7	0.374	0.466	0.209	0.001	0.516	0.058	0.048
Digital T8	0.765	0.683	0.895	0.135	0.238	0.100	0.126
EXP1	0.178	0.190	0.247	0.757	0.082	0.027	0.003
EXP2	0.192	0.199	0.226	0.915	0.126	0.025	0.011
EXP3	0.020	0.010	0.043	0.332	0.019	0.022	0.023
PA 1	0.244	0.258	0.071	0.100	0.820	0.110	0.025
PA 2	0.273	0.240	0.021	0.073	0.826	0.146	0.042
PA 3	0.344	0.328	0.117	0.140	0.800	0.028	0.033
Per 2	0.003	0.010	0.031	0.054	0.133	0.923	0.099
Per 3	0.086	0.050	0.133	0.134	0.001	0.673	0.079
Per1	0.074	0.031	0.095	0.028	0.065	0.638	0.019
Sup D1	0.020	0.071	0.066	0.007	0.012	0.142	0.813
Sup D2	0.046	0.055	0.050	0.023	0.005	-0.029	0.718

Note: DC = Digital Communication; DE = Digital Evaluation; DT = Digital Technologies; IE= Indirect Experience ; PA = Physiological Arousal; SP = Social Persuasion; SD = Supportive Digital Environment
Source: Smart-PLS4 output**.**

The Fornell-Larcker criterion measures the independence of dimensions from each other in the same model. by ensuring that the value of the relationship between the dimension and itself is higher than its value with other dimensions, as shown in table 5.

Table 5
Discriminant validity Fornell and Larcker criterion

Constructs	DC	DE	DT	IE	PA	SP	SD
DC	0.910						
DE	0.822	0.731					
DT	0.820	0.711	0.870				
IE	0.219	0.228	0.274	0.712			
PA	0.351	0.337	0.084	-0.127	0.815		
SP	0.040	0.026	0.076	-0.006	0.117	0.755	
SD	0.041	0.083	0.076	0.009	0.006	0.083	0.767

Note: DC = Digital Communication; DE = Digital Evaluation; DT = Digital Technologies; IE= Indirect Experience ; PA = Physiological Arousal; SP = Social Persuasion; SD = Supportive Digital Environment
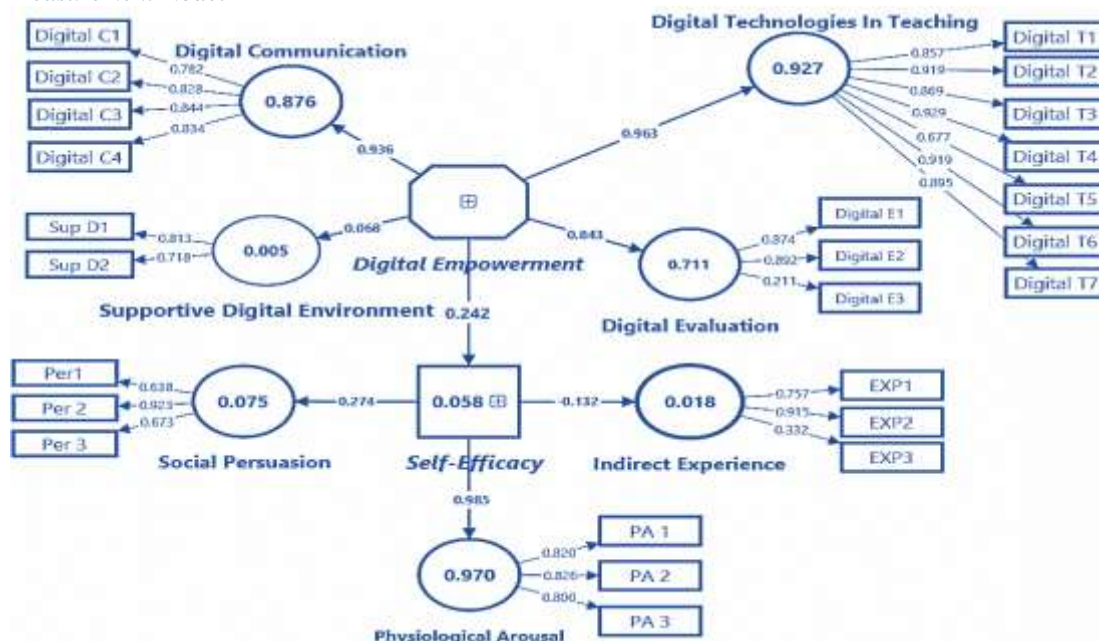Source: Smart-PLS4 output

Hensler et al. (2015) claimed that the Fornell-Larcker criterion and the cross-loading test are the two dominant methods. However, they need to reveal the need for discriminant validity reliably; an alternative approach is based on the multi-trait matrix and multi-methods. It has been proposed to assess discriminant validity: the ratio of the associations between heterogeneous traits and a single trait. The exact cut-off for the HTMT criterion is still under debate. Hensler set the cut-off at 0.90 if the path model includes conceptually similar concepts (Hair Jr et al., 2021). Table 6 revealed that the HTMT values are below the 0.9 cut-off level, indicating that the study dimensions have discriminant validity.

Table 6.
Heterotrait-monotrait ratio (HTMT) – Matrix

Constructs	DC	DE	DT	IE	PA	SP	SD
DC							
DE	1.203						
DT	0.894	0.814					
IE	0.271	0.386	0.332				
PA	0.450	0.495	0.341	0.162			
SP	0.129	0.137	0.159	0.226	0.149		
SD	0.128	0.413	0.139	0.132	0.105	0.247	

Note: DC = Digital Communication; DE = Digital Evaluation; DT = Digital Technologies; IE= Indirect Experience ; PA = Physiological Arousal; SP = Social Persuasion; SD = Supportive Digital Environment
Source: Smart-PLS4 output.

Figure 3
Measurement model

Source: Smart-PLS4 output.

After the measurement model has been reviewed and validated, the second step in evaluating the PLS-SEM results is to evaluate the structural model based on a set of criteria. The structural model determines a pattern of relationships between research variables by looking at the coefficients between the variables and the value of the coefficient of determination (R2).

The coefficient of determination (R^2) measures the extent to which the model can explain differences in the dependent variable. The closer its value is to 1, the more likely it is that the independent variables predict the dependent variable and the extent to which the independent variable can explain the dependent variable (Theng et al., 2021). The R^2 criteria consist of three classifications, namely: R2 values of 0.67, 0.33, and 0.19 as large, medium (moderate), and weak (weak) (Purwanto & Sudargini, 2021).

In this research paper, the R^2 value for the independent variable, digital empowerment, compared to the dependent variable, self-efficacy, is 0.058.This value is considered weak, so it can be concluded that the independent variable has a limited positive impact on the dependent variable. The percentage of the impact of digital empowerment on the dependent variable self-efficacy at work is 5.8%. In contrast, the remaining percentage, 94.2%, is affected by other variables that were not addressed in this study.

Tabel 7*
r-square and F²

Indicator	R-square	F²	Decision
Digital Empowerment -> Self-Efficacy	0.058	0.062	weak

Source: Smart-PLS4 output.

5. Hypotheses Testing

The results in Table (9) point out that the digital empowerment of the lecturer affects self-efficacy in teaching through a probability value of (0.007). Table 5 depicts that the probability value of the effect of digital empowerment on self-efficacy is equal to (0.007), which is less than the significance level value (0.05).

Accordingly, the main hypothesis (H1) is accepted, which states that there is a statistically significant effect of the independent variable, digital empowerment, on the dependent variable, self-efficacy.

And this implies that empowering the lecturer to use digital media in the educational process increases his self-efficacy in teaching. Hence, the digital empowerment improves lecturer self-efficacy.

Table 8.
Direct relationship

Hypotheses	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result
DE -> Self-Efficacy	0.242	0.250	0.089	2.701	0.007	Supported

Note: DE = Digital Empowerment
Source: Smart-PLS4 output.

The results in Table 8 demonstrate that the digital empowerment of the lecturer affects self-efficacy in teaching through a probability value of (0.007). Also, the probability value of the effect of digital empowerment on self-efficacy is equal to (0.007), which is less than

the significance level value (0.05). Accordingly, the main hypothesis (H1) is accepted, which states that there is a statistically significant effect of the independent variable, digital empowerment, on the dependent variable, self-efficacy.

The empowerment of the lecturer to employ digital media in the educational process increases his self-efficacy in teaching; this means that digital empowerment enriches the lecturer's self-efficacy. Furthermore, Table 9 indicates that the probability value of the first alternative hypothesis, which states that digital empowerment affects the indirect experience dimension, is greater than the significance level of (0.05). Therefore, the alternative hypothesis H11 is rejected; the digital empowerment variable does not affect the indirect experience dimension of teachers.

Also, the probability value of the effect of the digital empowerment variable on physiological arousal was (0.007), which is less than the significance level (0.05). .Therefore, the second sub-alternative hypothesis is accepted.This explains why teachers feel comfortable using digital applications, tools, and media in the teaching environment, reducing their stress during instruction. Conversely, when teachers are unable to use digital programs and media effectively in the teaching process, they experience stress, which affects their psychological state and increases their tension and anxiety while conveying information.

In contrast, Table 9 demonstrates that the probability value of the effect of digital empowerment on social persuasion is greater than the significance level (0.05), which means rejecting the third sub-alternative hypothesis. It means that the lecturer's digital empowerment does not affect the social persuasion of English lecturers. This is an indication that social persuasion and indirect experience are affected by other variables from the point of view of English professors, such as social interaction with students or human relations, more than their reliance on digital skills. Therefore, they are not directly affected by digital empowerment.

Table 9

Sub-hypothesis testing

Hypotheses	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result
DE -> IE	-0.032	-0.036	0.028	1.148	0.251	Not Supported
DE -> PA	0.238	0.246	0.088	2.689	0.007	Supported
DE -> SP	0.066	0.070	0.038	1.736	0.083	Not Supported

Note: DE = Digital Empowerment; IE= Indirect Experience ; PA = Physiological Arousal; SP = Social Persuasion.

Source: Smart-PLS4 output**.**

Conclusion and Recommendations

Lecturers continuously strive to improve their teaching methods, educate students, deliver information effectively, and enhance their self-efficacy in teaching using modern methods and techniques, especially in universities that are considered centers for research, development, and scientific innovation. Accordingly, digital empowerment is a crucial factor for university lecturers to keep pace with developments and the digital environment in education. This research paper found that digital empowerment partially affects lecturers' self-efficacy, explaining 5.8% of it. In contrast, the remaining 94.2% is explained by variables not included in this study. The F2 value in the field study was 0.062, indicating a

weak effect. Therefore, the main hypothesis was accepted, with the caveat that digital empowerment affected the physiological arousal dimension but did not affect either the indirect experience dimension or social persuasion.

The most important practical effects of digital empowerment on the self-efficacy of language center teachers can be summarized and classified as follows:

First: Institutional Impacts (at the level of intensive language learning centers)

- Improved Teaching Quality: The use of electronic media enhances teacher performance and facilitates the delivery of information, as the digital environment is one of the most important elements of the educational environment for both teachers and students.
- Enhanced Digital Creativity: Digital empowerment enhances creativity in lesson delivery and student interactions.
- Improved Image of Language Learning Centers: This attracts new learners and increases their confidence in the level and quality of education.

Second**:** Impacts at the Individual (lecturer) Level

- Enhanced Confidence in Digital Teaching Ability and Time and Effort Savings.
- Reduced Anxiety and Stress Associated with Technology
- Increased Teaching Motivation Through the Availability of the Digital Environment

Based on the preceding findings, the following recommendations were made: Encourage lecturers to use technological media in the educational process.

- Providing training courses for lecturers to improve their level of use of technology in the educational process, especially since it contributes to reducing effort and time.
- Using electronic records and creating a platform for communication between students and lecturers virtually and remotely, and providing lessons, guidance, and announcing grades remotely.
- Providing the necessary information sources from equipped halls, virtual halls, Internet networks, electronic boards, applications, and computers for teachers and students.
- Enhancing the digital culture of lecturers by holding training courses to improve their self-efficacy in education and investing in technology in the educational process.
- Moreover, it provides material and moral incentives for lecturers to do their best, especially in teaching languages.

Limitations and Future Research Directions

In light of the current study, it is clear that digital empowerment selectively affects self-efficacy. It enhances positive physiological arousal, while its impact on social persuasion and indirect experience remains limited due to its connection with broader interactive and organizational factors in the surrounding environment. Therefore, this study is not without limitations, as it relied on a specific institutional context—namely, language centers within universities—which may affect the generalizability of the results. We recommend that future research be conducted across different environments and institutions, and with different samples, to identify the most important factors affecting professors' self-efficacy.

Furthermore, it is recommended to investigate the mediating and moderating variables that may explain the variability in the impact of digital empowerment on self-efficacy.

References

Ahmad, I., & Hassan Zia, M. (2023). Impact of Sustainable Leadership on Sustainable Performance with Mediating Role of Structural Empowerment: A Study in SMEs [manufacturing (textile) sector] of Pakistan. International Journal of Business and Economic Affairs, 8(4), 44–57. https://doi.org/10.24088/ijbea-2023-84004

Akkoyunlu, B., Soylu, M. Y., & Caglar, M. (2010). A Study on Developing "Digital Empowerment Scale" or University Students. Hacettepe Universitesi Egitim Fakultesi Dergisi-Hacettepe University Journal of Education, 10–19.

Al-Ali, A., Alsmairat, M. A. K., Qawasmeh, R., Mahrakani, N. J., & Alhazzani, N. S. (2024). Exploring the role of digital citizenship and digital empowerment to enhance academic performance of business students. International Journal of Data and Network Science, 8(2), 1275–1284. https://doi.org/10.5267/j.ijdns.2023.11.007

Barni, D., Danioni, F., & Benevene, P. (2019). Teachers' self-efficacy: The role of personal values and motivations for teaching. Frontiers in Psychology, 10(JULY), 1–7. https://doi.org/10.3389/fpsyg.2019.01645

Bandura, A. (1982). Self-Efficacy Mechanism in Human Agency. 37(2), 122–147.

Berg, D. A. G., Skaalvik, E. M., Asil, M., Hill, M. F., Uthus, M., Tangen, T. N., & Smith, J. K. (2023). Teacher self-efficacy and reasons for choosing initial teacher education programmes in Norway and New Zealand. Teaching and Teacher Education, 125, 104041. https://doi.org/10.1016/j.tate.2023.104041

De, D. (2018). A scale to measure digital empowerment of students. 2596–2599.

Evers, W. J. G., Brouwers, A., & Tomic, W. (2002). Burnout and self-efficacy: A study on teachers' beliefs when implementing an innovative educational system in the Netherlands. British Journal of Educational Psychology, 72(2), 227–243. https://doi.org/10.1348/000709902158865

Gordon, D., Blundell, C., Mills, R., & Bourke, T. (2023). Teacher self-efficacy and reform: a systematic literature review. Australian Educational Researcher, 50(3), 801–821. https://doi.org/10.1007/s13384-022-00526-3

Guoyan, S., Khaskheli, A., Raza, S. A., Khan, K. A., & Hakim, F. (2023). Teachers' self-efficacy, mental well-being and continuance commitment of using learning management system during COVID-19 pandemic: a comparative study of Pakistan and Malaysia. Interactive Learning Environments, 31(7), 4652–4674. https://doi.org/10.1080/10494820.2021.1978503

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Partial least squares structural equation modeling (PLS-SEM) using R: A workbookfilels.pdf. In Springer. https://link.springer.com/content/pdf/10.1007/978-3-030-80519-7

Hans, V. B. (2018). Digital Empowerment and Inclusive Growth. SSRN Electronic Journal, 1–14. https://doi.org/10.2139/ssrn.3139344

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM : Indeed a Silver Bullet. 19(2), 139–151. https://doi.org/10.2753/MTP1069-6679190202

Hayat, A. A., Shateri, K., Kamalian Fard, S., Sabzi Shahr Babak, E., & Faraji Dehsorkhi, H. (2023). Psychometric properties of the persian version of the physician teaching self-efficacy questionnaire. BMC Medical Education, 23(1), 1–9. https://doi.org/10.1186/s12909-023-04130-6

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hershkovitz, A., Daniel, E., Klein, Y., & Shacham, M. (2023). Technology integration in emergency remote teaching : teachers ' self-efficacy and sense of success. 12433–12464.

Hussain, M. S., & Khan, D. S. A. (2022). Self-Efficacy of Teachers: A Review. Jamshedpur Research Review, 1(50 (January-February)), 110–116.

Khan, M. H., & Hussain, A. (2020). Effect of Human Resources Practices on Employees' Empowerment in Hotels Mohammad Hanif Khan * , Altaf Hussain †.

Klassen, R. M., & Chiu, M. M. (2010). Effects on Teachers' Self-Efficacy and Job Satisfaction: Teacher Gender, Years of Experience, and Job Stress. Journal of Educational Psychology, 102(3), 741–756. https://doi.org/10.1037/a0019237

Klassen, R. M., & Tze, V. M. C. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. Educational Research Review, 12, 59–76. https://doi.org/10.1016/j.edurev.2014.06.001

Kong, S. C., Wang, Y. Q., & Lai, M. (2019). Development and Validation of an Instrument for Measuring Digital Empowerment of Primary School Students. CompEd 2019 - Proceedings of the ACM Conference on Global Computing Education, 172–177. https://doi.org/10.1145/3300115.3309523

Li, Z., Li, H., & Wang, S. (2022). How Multidimensional Digital Empowerment Affects Technology Innovation Performance: The Moderating Effect of Adaptability to Technology Embedding. Sustainability (Switzerland), 14(23). https://doi.org/10.3390/su142315916

Lim, W. M. (2024). A typology of validity: content, face, convergent, discriminant, nomological and predictive validity. Journal of Trade Science, 12(3), 155–179. https://doi.org/10.1108/jts-03-2024-0016

Mäkinen, M. (2006). Digital Empowerment as a Process for Enhancing Citizens' Participation. E-Learning and Digital Media, 3(3), 381–395. https://doi.org/10.2304/elea.2006.3.3.381

Martínez, O. N., García, J. I., & Salcedo, V. T. (2021). Estimating patient empowerment and nurses' use of digital strategies: Esurvey study. International Journal of Environmental Research and Public Health, 18(18). https://doi.org/10.3390/ijerph18189844

Patriani, I., Trustisari, H., Parmawati, S., Nugrahanti, T. P., & Kespandiar, T. (2023). Network Society: Digital Empowerment or Disempowerment. Al Qalam: Jurnal Ilmiah Keagamaan Dan Kemasyarakatan, 17(1), 161. https://doi.org/10.35931/aq.v17i1.1795

Pitre, I. J. (2018). Digital Empowerment Strategies in the Education Sector for the Linking of Citizens with the Key Sectors of Colombian Society. Indian Journal of Science and Technology, 11(1), 1–11. https://doi.org/10.17485/ijst/2018/v11i16/121804

Purwanto, A., & Sudargini, Y. (2021). Partial Least Squares Structural Squation Modeling (PLS-SEM) Analysis for Social and Management Research : A Literature Review. Journal of Industrial Engineering & Management Research, 2(4), 114–123.

Safira, M. R., & Irwansyah, I. (2019). The Social Humanism Factor in Digital Empowerment in Indonesia. 2019 International Conference on Advanced Computer Science and Information Systems (ICACSIS), 409–416. https://ieeexplore.ieee.org/document/8979911/

Shah, D. B. (2023). education sciences Factors Contributing to Teachers ' Self-Efficacy : A Case of Nepal.

Shahzad, K., & Naureen, S. (2017). Impact of Teacher Self-Efficacy on Secondary School Students' Academic Achievement. Journal of Education and Educational Development, 4(1), 48. https://doi.org/10.22555/joeed.v4i1.1050

Solari, E. (2014). Longitudinal prediction of 1st and 2nd grade English oral reading fluency in ELL. Journal of Adolescence, 74(4), 274–283. https://doi.org/10.1002/pits

Tamang, R., & Reddy, N. A. (2023). Development and Standardization of Student Teachers ' Digital Empowerment Scale (STDES) Assistant Professor , Dept . of Education , North - Eastern Hill University ,. 10, 1884–1899.

Theng, B. P., Wijaya, E., Juliana, J., Eddy, E., & Putra, A. S. (2021). The role of transformational leadership, servant leadership, digital transformation on organizational performance and work innovation capabilities in digital era. JPPI (Jurnal Penelitian Pendidikan Indonesia), 7(2), 225–238. https://doi.org/10.29210/020211164

Williams, M. K., Christensen, R., McElroy, D., & ... (2023). Teacher self-efficacy in technology integration as a critical component in designing technology-infused teacher preparation programs. … Issues in Technology …, 23, 228–259. https://www.learntechlib.org/p/221546/

Yousef Ezzeldin, S. M., & Mubarak Alsharidah, M. A. (2021). Teacher Digital Empowerment Level in Light of the Kingdom of Saudi Arabia's Vision "2030": Reality and Aspirations. Ilkogretim Online, 20(2), 96–107. https://doi.org/10.17051/ilkonline.2021.

Genişletilmiş Özet

1. Giriş ve Çalışmanın Teorik Çerçevesi

Günümüz eğitim dünyası, bilginin öğrencilere verimli bir şekilde aktarılabilmesi için teknolojinin sınıflarda istihdam edilmesini ve bu alana yatırım yapılmasını zorunlu kılan hızlı bir teknolojik gelişime tanıklık etmektedir. Öğretim elemanlarının elektronik tahtalar, donanımlı sınıflar ve internet gibi çeşitli teknolojik araçları nasıl yönetecek lerini bilmeleri ve öğrencilerin dikkatini çekmek için bu araçların kullanımına yatırım yapmaları beklenmektedir. Özellikle dil eğitimi, çeşitli dil becerilerinde ustalaşmak için hem yüz yüze hem de uzaktan eğitimde sesli ve görüntülü dijital mecraların kullanımını gerektirmektedir.

Çağdaş literatürde, bir öğretim elemanının teknolojik araçları yönetme yeteneği "dijital güçlendirme" olarak adlandırılmakta ve bu durum öz-yeterliliğin temel bir göstergesi olarak kabul edilmektedir. Dijital güçlendirme, bireylerin bilgi toplumunda kapasitelerini artırmak için dijital teknolojileri etkili bir şekilde kullanma yeteneğini ifade eder. Öte yandan, öz-yeterlilik, bir bireyin hedeflerine ulaşma yolundaki çaba ve azim gibi temel insani etkinliklerini somutlaştıran içsel bir motivasyon değişkenidir. Öğretim elemanlarının öz-yeterliliği ise, işteki azimle artan; öğretim uygulamalarını, davranışlarını, güvenlerini ve bağlılıklarını etkileyen bir unsurdur.

2. Çalışmanın Amacı ve Önemi

Bu çalışma, Cezayir üniversitelerindeki Yoğunlaştırılmış Dil Merkezlerinde görev yapan İngilizce okutmanları arasında dijital güçlendirmenin öz-yeterlilik üzerindeki etkisini belirlemeyi amaçlamaktadır. Araştırmanın önemi, üniversitelerin modern teknolojik araçları eğitim sürecine entegre ederek bilgi değişim yöntemlerini ve uygulamalı araştırmaları iyileştirme çabasından kaynaklanmaktadır. Cezayir'de İngilizce, Fransızca ve İspanyolca öğretimine adanmış bu merkezler yeni bir trenddir ve öğrencilerin akademik/kişisel yaşamlarında dil becerilerini geliştirmeyi hedeflemektedir. Bu durum, hem dijital medyayı kullanabilen hem de öğretim öz-yeterliliği yüksek okutmanların varlığını gerekli kılmaktadır. Çalışma, literatürdeki dijital güçlendirme ve öz-yeterlilik arasındaki ilişkiye dair eksikliği (araştırma boşluğunu) doldurmayı hedeflemesi bakımından özgündür.

3. Araştırma Hipotezleri

Araştırma kapsamında bir ana hipotez ve üç alt hipotez test edilmiştir:

• H1: Dijital güçlendirme, yoğun dil merkezlerindeki İngilizce okutmanlarının öz-yeterliliğini önemli ölçüde etkiler.

• H11: Dijital güçlendirme, okutmanların dolaylı deneyimleri (indirect experience) üzerinde önemli bir etkiye sahiptir.

• H12: Dijital güçlendirme, okutmanların sosyal ikna (social persuasion) süreçlerini önemli ölçüde etkiler.

• H13: Dijital güçlendirme, okutmanların fizyolojik uyarılma (physiological arousal) düzeylerini önemli ölçüde etkiler.

4. Araştırma Yöntemi (Metodoloji)

4.1. Örneklem ve Veri Toplama

Araştırmanın evrenini Cezayir üniversitelerindeki yoğun dil merkezlerinde görev yapan tüm İngilizce profesörleri oluşturmaktadır. Veriler, rastgele örnekleme yöntemiyle seçilen 201 öğretmenden anket yoluyla toplanmıştır. Anketler hem basılı formatta hem de resmi sayfalar ve e-posta yoluyla elektronik olarak dağıtılmıştır. Veri toplama süreci Temmuz 2025 başından Eylül 2025 ortasına kadar sürmüştür. Katılımcıların %68,7'si kadın, %31,3'ü erkektir. Yaş dağılımı 25 ile 37 ve üzeri arasında dengeli bir dağılım göstermektedir.

4.2. Ölçüm Araçları

Anket üç bölümden oluşmaktadır:

1. Demografik Değişkenler: Yaş, cinsiyet ve deneyim.

2. Dijital Güçlendirme Ölçeği: Öğretimde dijital teknolojiler, dijital iletişim, dijital değerlendirme ve destekleyici dijital çevre boyutlarını içermektedir.

3. Öz-Yeterlilik Ölçeği: Dolaylı deneyim, sosyal ikna ve fizyolojik uyarılma boyutlarını kapsamaktadır. Tüm maddeler 5'li Likert ölçeği kullanılarak puanlanmıştır.

4.3. Veri Analizi

Örneklem özelliklerini analiz etmek için SPSS v27; hipotezleri test etmek ve değişkenler arası ilişkileri incelemek için ise Smart-PLS 4 yazılımı kullanılmıştır. Analiz sürecinde varyans tabanlı yapısal eşitlik modellemesi (PLS-SEM) tercih edilmiştir. Bu yöntem, temel hedef yapıları tahmin etmek ve onları etkileyen yapıları belirlemek için en uygun seçenektir.

5. Bulgular ve Analizler

5.1. Ölçüm Modelinin Değerlendirilmesi (Geçerlilik ve Güvenilirlik)

Analizin ilk aşamasında ölçüm modelinin geçerliliği ve güvenilirliği test edilmiştir:

• Yakınsak Geçerlilik: Ortalama Açıklanan Varyans (AVE) değerlerinin önerilen 0,50 sınırını aştığı görülmüştür. Faktör yükleri incelenmiş, 0,708 eşiğinin altında kalan bir madde (Sup D3) modelden çıkarılmıştır.

• Güvenilirlik: Tüm yapılar için Birleşik Güvenilirlik (CR) skorları 0,7 eşiğini aşarak güçlü bir içsel tutarlılık sergilemiştir.

• Ayırt Edici Geçerlilik: Fornell-Larcker kriteri ve Heterotrait-Monotrait (HTMT) matrisi kullanılarak boyutların birbirinden bağımsız olduğu doğrulanmıştır. HTMT değerlerinin 0,9 eşik değerinin altında olduğu saptanmıştır.

5.2. Yapısal Modelin Değerlendirilmesi ve Hipotez Testleri

• Belirleme Katsayısı (R^2): Dijital güçlendirmenin öz-yeterlilik üzerindeki R^2 değeri 0,058 olarak bulunmuştur. Bu değer "zayıf" olarak kabul edilmekte ve dijital güçlendirmenin öz-yeterlilik üzerindeki etkisinin %5,8 ile sınırlı olduğunu göstermektedir. Kalan %94,2'lik pay, bu çalışmada ele alınmayan diğer değişkenlerden kaynaklanmaktadır.

• Hipotez Sonuçları:

o H1 (Kabul): Dijital güçlendirmenin öz-yeterlilik üzerindeki etkisi istatistiksel olarak anlamlı bulunmuştur (p=0,007 < 0,05).

o H11 (Red): Dijital güçlendirmenin dolaylı deneyim boyutu üzerinde anlamlı bir etkisi saptanmamıştır (p=0,251).

o H12 (Red): Dijital güçlendirmenin sosyal ikna boyutu üzerinde anlamlı bir etkisi bulunmamıştır.

o H13 (Kabul): Dijital güçlendirmenin fizyolojik uyarılma üzerinde anlamlı ve olumlu bir etkisi olduğu görülmüştür (p=0,007).

6. Sonuç ve Değerlendirme

Araştırma sonuçları, İngilizce okutmanları arasında dijital güçlendirmenin öz-yeterlilik üzerinde pozitif ancak zayıf bir etkiye sahip olduğunu ortaya koymuştur. Dijital araçları ve medyayı eğitim sürecinde etkin kullanabilen öğretmenlerin, öğretim konusundaki öz-yeterliliklerinin arttığı sonucuna varılmıştır.

Özellikle fizyolojik uyarılma boyutundaki anlamlı sonuç, öğretmenlerin dijital uygulama ve araçları kullanma konusunda kendilerini rahat hissetmelerinin, öğretim sırasındaki streslerini azalttığını göstermektedir. Tersine, dijital programları etkin kullanamayan öğretmenler stres yaşamakta, bu da psikolojik durumlarını etkileyerek bilgi aktarımı sırasında gerginlik ve kaygılarını artırmaktadır.

Sosyal ikna ve dolaylı deneyim boyutlarının etkilenmemesi ise, Cezayir'deki İngilizce okutmanları için bu boyutların dijital becerilerden ziyade öğrencilerle sosyal etkileşim veya insani ilişkiler gibi diğer değişkenlerden daha fazla etkilendiğinin bir göstergesidir.

7. Öneriler

Çalışma bulgularına dayanarak şu öneriler sunulmuştur:

• Teknolojik Donanım: Öğretmenlere eğitim sürecini destekleyecek gerekli teknolojik araçlar sağlanarak dijital güçlendirme artırılmalıdır.

• Eğitim Programları: BT kullanımına yönelik eğitimlerin yanı sıra, bu teknolojilerin pedagojik süreçlere entegrasyonu konusunda uzmanlaşmış insan kaynağı yetiştirilmelidir.

• İş Birliği: Üniversiteler, devlet ve özel sektör arasında dijital içerik ve platformların geliştirilmesi için iş birlikleri teşvik edilmelidir.

• Psikolojik Destek: Öğretmenlerin teknoloji kullanımı sırasındaki kaygılarını azaltacak destekleyici bir dijital çevre oluşturulmalıdır."

Appendix: Questionnaire Items

Personal information

1. Gender

a. Female　　　　　　　　b. Male

2. Age

a. From 25 to 30　　　　　b. From 31 to 36　　　　　c. From 37 and over

3. Experience

a. Less than 5　　　　　　b. From 6 to 10　　　　　c. From 11 or more

Table 1

Independent variable digital empowerment

Item	Phrases	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.Digital Communication						
Digital C1	In the e-learning environment, I can foster communication and collaboration between myself and my pupils.					
Digital C2	I provide instruction to each student using a variety of communication methods, such as chat, email, and online lessons.					
Digital C3	I provide feedback to support students' participation and interaction in e-learning.					
Digital C4	In the e-learning environment, I use suitable conduct norms for communication with my students.					
2. Digital Evaluation						
Digital E1	I use electronic assessment tools (such as electronic tests, assignments, and discussion rooms).					
Digital E2	I use electronic records to keep student assessments on assignments and tests.					
Digital E3	I conduct formative and summative assessments using digital tests.					
3. Digital Technologies In Teaching						
Digital T1	I employ my computer skills in teaching.					
Digital T2	I use electronic media in teaching.					
Digital T3	I use teaching strategies compatible with e-learning.					
Digital T4	I build useful interactive digital educational activities to deliver information to students.					
Digital T5	I'm always looking into the potential uses of new e-learning technologies and applications.					
Digital T6	I have knowledge of using forums, blogs and virtual classrooms and using them to serve learning objectives.					
Digital T7	I am able to use a variety of online tools, including Google Classroom, Zoom, and Microsoft Teams, to construct and oversee virtual classes.					
4.Supportive Digital Environment						
Sup D1	The computer labs were established in the college to facilitate e-learning.					
Sup D2	The college has an internet network that helps implement e-learning during study hours.					
Sup D3	Audio and visual media are available in the digital content of the lessons.					

Source: Compiled by the authors.

Table 2

Dependent variable self-efficacy

Item	Phrases	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	1. Indirect Experience					
EXP1	I can simplify information and deliver it to the student without complexity.					
EXP2	I have good educational strategies when I teach.					
EXP3	I can deal well with the problems that accompany the implementation of educational technology.					
	2. Physiological Arousal					
PA 1	Teaching makes me feel accomplished and enhances my experience.					
PA 2	Students' interaction with technology in teaching motivates me to work harder.					
PA 3	The availability of technological tools in teaching motivates me to give my best					
	3. Social Persuasion					
Per 1	My students have expressed their admiration for my good teaching skills.					
Per 2	My colleagues have told me that I am a good teacher.					
Per 3	My colleagues have praised me for my good teaching skills and having the right skills.					

Source: Compiled by the authors

Additional information

Consent form information: Informed consent form (voluntary participation) was obtained from all individuals participating in the study.