Unveiling the personal resources influencing Chinese as a second language teachers' technology acceptance: A focus on teachers' cognitive flexibility, resilience, and self-efficacy

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ABSTRACT: This study examined the role of cognitive flexibility (CF), resilience, and self-efficacy in predicting technology acceptance among 415 Chinese as a second language (CSL) teachers. Using structural equation modeling (SEM), re-sults revealed that self-efficacy had the strongest positive correlation with tech-nology acceptance, followed by cognitive flexibility, while resilience showed the weakest correlation. All three constructs were significant predictors, with self-efficacy emerging as the best predictor, cognitive flexibility as the second, and resilience as the third. These findings highlight the critical influence of internal psychological resources on CSL teachers' adoption of technology.
Keywords: Cognitive flexibility, CSL teachers, Resilience, Self-efficacy, Tech-nology Acceptance

Revelando los recursos personales que influyen en la aceptación tecnológica de los profesores de chino como segunda lengua: Un enfoque en la flexibilidad cognitiva, la resiliencia y la autoeficacia de los docentes

RESUMEN: Este estudio examinó el papel de la flexibilidad cognitiva (FC), la resiliencia y la autoeficacia en la predicción de la aceptación tecnológica entre 415 profesores de chino como segunda lengua (CSL). Utilizando modelos de ecuaciones estructurales (SEM), los resultados revelaron que la autoeficacia tuvo la correlación positiva más fuerte con la aceptación tecnológica, seguida de la flexibilidad cognitiva, mientras que la resiliencia mostró la correlación más débil. Los tres constructos fueron predictores significativos, destacando la autoeficacia como el mejor predictor, la flexibilidad cognitiva como el segundo y la resiliencia como el tercero. Estos hallazgos resaltan la influencia crítica de los recursos psicológicos internos en la adopción de tecnología por parte de los profesores de CSL.
Palabras clave: Flexibilidad cognitiva, profesores de chino como segunda len-gua (CSL, por sus siglas en inglés), Resiliencia (resiliencia también puede mantenerse en inglés según el

contexto de uso, pero aquí se ofrece la traducción literal para opcionalidad), Autoeficacia, Aceptación de la tecnología

1. Introduction

Over the past decades, the integration of innovative technologies in English as a Foreign Language (EFL) education has steadily evolved, reshaping instructional practices and learning environments (Derakhshan & Zhang, 2024; Sun & Mei, 2022). In response to the limitations of traditional teaching methods, many academic institutions have transitioned to online or blended modes of delivery (Derakhshan & Shakki, 2024; Lu et al., 2024). Within this transformation, educators serve as pivotal agents in shaping the success or failure of instructional practices, as their professional decisions, attitudes, and competencies directly impact student outcomes (Derakhshan et al., 2025; Pourgharib & Shakki, 2024; Shakki, 2022; Wang et al., 2021).

Given this central role, research on EFL educators' acceptance and use of educational technologies has gained momentum across diverse academic and cultural contexts, including China (Huang et al., 2019; Mei et al., 2018). Technology acceptance, defined as individuals' willingness to adopt, integrate, and use innovative tools in their professional practice (Granić, 2023), is influenced by internal states and personal beliefs (Huang & Teo, 2021). Among the psychological factors shaping technology acceptance, self-efficacy—a teacher's belief in their capacity to effectively teach, persevere through challenges, and influence student learning—has been widely recognized as a critical determinant (Arabmofrad & Shakki, 2025; Han & Wang, 2021; Zhang et al., 2023; Huang & Ren, 2020). In the EFL context, teachers' self-efficacy regarding technology use is a strong predictor of their readiness to integrate digital tools, aligning with Bandura's (2011) assertion that self-efficacy significantly affects the implementation of educational innovations (Hammouri et al., 2021; Zhao & Zhao, 2021).

Alongside self-efficacy, resilience—teachers' ability to withstand and recover from professional stressors—plays a vital role in sustaining effective teaching practices (Derakhshan et al., 2024; Wang et al., 2024; Zhi & Derakhshan, 2024). Resilient educators demonstrate strong commitment, effective self-regulation, and the motivation to support learner achievement despite challenges. Another key trait receiving increasing attention in second language (L2) research is cognitive flexibility (CF), the ability to shift perspectives and adapt responses in dynamic contexts (Derakhshan & Fathi, 2025; Erarslan, 2023; Li, 2023; Schmitz & Krämer, 2023). CF enables educators to respond adaptively to instructional challenges, transfer prior learning to new situations, and employ diverse strategies to foster learning (Öztürk et al., 2022; Wen et al., 2021; Mustafaoglu & Onen, 2016). Teachers' high in CF tend to maintain openness to multiple solutions, possess strong problem-solving and communication skills, and recover more quickly from stressors.

Despite the acknowledged importance of these psychological resources, limited research has examined their combined role in influencing technology acceptance among language teachers, particularly in the Chinese as a Second Language (CSL) context. With the global expansion of Chinese language education and the increasing reliance on digital platforms—especially in online and hybrid formats—understanding how self-efficacy, resilience, and cognitive flexibility interact to shape teachers' technology acceptance is both timely and nec-

essary (Sun & Mei, 2022). This study addresses this gap by employing a structural equation modeling (SEM) approach to investigate the predictive power of these three psychological constructs on CSL teachers' willingness and readiness to integrate educational technology. In doing so, it offers a novel perspective on the interplay between internal psychological traits and technology adoption in language teaching.

2. Literature Review

2.1. Technology acceptance

The integration of technology in second language (L2) teaching and its acceptance have been extensively researched over the past decades, predominantly within the English as a Foreign Language (EFL) context (Joo et al., 2018; Qi & Derakhshan, 2025). While this study focuses on Chinese as a Second Language (CSL) teachers, it is important to recognize that the volume of CSL-specific research on technology acceptance remains limited. Therefore, insights from EFL studies provide a valuable theoretical and empirical foundation for understanding technology acceptance in CSL education. The shared characteristics of language teaching—such as the necessity to facilitate communication, engage learners, and adapt to diverse classroom environments—make findings from EFL research relevant and transferable, albeit with careful consideration of contextual differences.

Technology acceptance is commonly examined through the Technology Acceptance Model (TAM) (Davis, 1989), which posits that individuals' intentions to use technology are primarily influenced by two factors: perceived usefulness (PU) and perceived ease of use (PEU) (Mei et al., 2018). In the context of language educators, technology acceptance pertains to the extent to which teachers are willing and able to incorporate digital tools into their pedagogical practices (Granić, 2023). While TAM offers a foundational framework for examining technology acceptance, more recent research highlights the role of psychological constructs such as cognitive flexibility (CF), resilience, and self-efficacy in shaping educators' technology adoption behaviors.

Educators with higher self-efficacy and resilience tend to integrate technology more seamlessly, demonstrating confidence in their ability to manage technological challenges and persist through difficulties (Huang & Teo, 2021). Moreover, technology acceptance is described as the willingness of users to utilize technology in tasks designed to advocate for effective teaching (Teo, 2011). Three core elements—PU, PEU, and intention to use (INT)—jointly influence actual technology usage behavior (Huang & Teo, 2021). Teacher technology use behaviors can be conceptualized along two dimensions: teacher-centered technology use (TTU), which emphasizes content delivery and instructor-led activities, and student-centered technology use (STU), which positions teachers as facilitators who promote learner engagement, collaboration, and higher-order thinking (Jeffrey & Clark, 2019).

2.2. Cognitive flexibility

Cognitive flexibility (CF) refers to an individual's ability to adapt their knowledge and behavior in response to dynamic environmental demands (Scott, 1962). This capacity

involves the flexible representation and manipulation of knowledge, allowing for effective problem-solving and adaptation (Wen et al., 2021). CF is particularly critical for language educators, enabling them to accommodate diverse teaching contexts and integrate digital technologies effectively (Teimourtash, 2013).

In EFL instruction, CF supports teachers in modifying their teaching strategies to overcome technological challenges and to promote digital learning environments (Braem & Egner, 2018). Although direct empirical evidence regarding CF in CSL contexts is limited, the pedagogical similarities suggest that CF is equally relevant for CSL educators who must navigate shifting technologies and learner needs. As language education evolves, CF facilitates ongoing adaptation to new academic tools and the tailoring of instruction to diverse learning styles, ensuring inclusive and effective engagement (Huang & Teo, 2021).

Studies in EFL contexts demonstrate that higher CF correlates with greater adoption of innovative educational technologies and flexible lesson planning that incorporates interactive digital resources (Braem & Egner, 2018). Developing CF in language teachers enhances both competence and resilience when facing pedagogical changes (Diamond, 2013). This reciprocal relationship suggests CF as a key determinant within technology acceptance models, directly influencing educators' willingness to adopt new digital tools. Ozen and Ucuncu (2022) emphasize that CF fosters an innovative mindset among educators, promoting experimentation with emerging technologies and facilitating meaningful technology integration. Conversely, learning techno-pedagogical skills can further enhance CF by encouraging lifelong learning and adaptability in the face of evolving educational technologies.

2.3. Teacher self-efficacy

Self-efficacy, defined as an individual's belief in their capability to organize and execute actions to achieve specific goals, is a positive emotional trait central to effective teaching (Bandura, 1986; Wang et al., 2025). Teacher self-efficacy refers specifically to educators' beliefs about their capacity to positively influence student learning outcomes (Mok & Moore, 2019). According to social cognitive theory, this multidimensional construct encompasses teachers' perceptions of their ability to design and implement tasks that facilitate academic success (Granziera & Perera, 2019).

Teachers with high self-efficacy are more actively engaged in planning, organization, and classroom management, demonstrating greater persistence and openness to innovative teaching methods (Skaalvik & Skaalvik, 2017; Mok & Moore, 2019; Zhi et al., 2024). They are more capable of employing alternative strategies when faced with challenges and effectively managing both cognitive and emotional aspects of difficult situations (Klassen & Tze, 2014). Additionally, high self-efficacy is linked to enhanced professional growth, reflective practice, and increased involvement in school activities (Han & Wang, 2021). While much of this evidence derives from EFL settings, these findings offer meaningful implications for CSL educators, whose self-efficacy similarly influences their adaptability and technology integration in teaching diverse learner populations.

2.4. Resilience

Resilience refers to a dynamic process involving protective and risk-related factors that shape an individual's ability to manage and recover from challenges and adversity (Brewer et al., 2019; Masten, 2001). Incorporating resilience into technology acceptance frameworks such as TAM and UTAUT improves their explanatory power by accounting for psychological preparedness alongside technical skills. Resilient educators demonstrate stronger intentions to adopt and sustain technology use because they better cope with frustrations arising from technological setbacks, supporting perceived ease of use (PEU) and adaptability (Van der Meulen et al., 2020).

Resilience is fundamentally an interaction between the individual and their environment, influencing emotional well-being and professional success (Derakhshan et al., 2024). It encompasses not only recovery from difficulties but also the strength to adapt proactively to ongoing change (Li, 2023; Zhi & Derakhshan, 2024). Within educational settings, resilience enables teachers to effectively utilize their resources and subject knowledge, employ efficient problem-solving strategies, and maintain well-being under stress (Greenier et al., 2021). Recognizing resilience as a core psychological factor in technology acceptance models provides a more holistic understanding of educators' digital adoption behaviors. It highlights the importance of professional development programs that foster psychological resilience alongside technical competence, thus promoting sustainable technology integration in language education (Lu et al., 2024).

2.5. The current study

Educators encounter challenges in the acceptance and acceptance of incorporating technology in teaching. Various factors impede teachers' utilization of technology, including insufficient educational design skills, inadequate training, lack of guidance and individual support, limited access to relevant information and teaching applications, insufficient preparation time, challenges in managing and supporting devices (such as restricted access to computers due to scheduling conflicts), low motivation, adverse perceptions regarding the value of technology, and learners' insufficient information literacy (Baroudi & Shaya, 2022). Additionally, it is essential to identify psychological factors such as CF, resilience, and self-efficacy influencing L2 educators' technology acceptance.

Indeed, Educators with limited experience in online instruction exhibited a lack of self-efficacy in employing advanced technologies and they faced challenges during the unexpected shift to online teaching (Toto & Limone, 2020). Previous studies have shown a correlation between self-efficacy and technology acceptance (Corry & Stella, 2018; Sun & Chen, 2016), with teacher self-efficacy being positively associated with technology and internet-based instruction, thereby significantly influencing the acceptance of modern technologies (Hatlevik, 2017). Similarly, as a cognitive feature among educators, CF has attracted attention for allowing teachers to navigate several alternatives and adapt to evolving circumstances. Teachers exhibiting CF had higher effectiveness at modifying their instructional practices and effectively managing the challenges and uncertainties in language learning (Ozen & Ucuncu, 2022). Thus, developing educators' resilience when facing stress caused by the unexpected

change in the education model and using technology in education needs attention. However, researching these issues simultaneously, especially in CSL education, is in its origin and should be highlighted for research. This research, thus, aims to elucidate the elements such as CSL teachers' CF, self-efficacy, and resilience on technology acceptance.

While the aforementioned constructs—CF, teacher self-efficacy, and resilience—have been predominantly investigated within EFL or broader L2 contexts, their relevance and implications are increasingly salient in the CSL teaching context. While CSL education shares many challenges with EFL, such as navigating digital pedagogical shifts and fostering student engagement through technology, it also presents unique instructional demands shaped by language policy, learner needs, and cultural factors. Existing EFL research provides a strong conceptual and empirical foundation for examining psychological constructs like CF and self-efficacy in technology integration.

Therefore, findings from EFL research provide a valuable conceptual and empirical foundation for exploring similar psychological constructs among CSL teachers. This study attempts to bridge that gap by extending existing insights into the CSL context, which remains underexplored but equally affected by the digital transformation of education. Existing EFL research provides a strong conceptual and empirical foundation for examining psychological constructs like CF and self-efficacy in technology integration. However, the role of resilience in technology acceptance remains underexplored, particularly in CSL education. Educators with higher resilience may perceive technological setbacks as manageable obstacles rather than insurmountable barriers, thus facilitating continuous engagement with digital tools.

Therefore, this research aims to answer the following research questions:

1. Is there any significant association between CSL teachers' CF, resilience, self-efficacy, and technology acceptance?
2. To what extent does CF, resilience, and self-efficacy predict CSL teachers' technology acceptance?

3. Method

3.1. Research design

This study employed a quantitative, cross-sectional survey design to examine the predictive relationships between cognitive flexibility (CF), resilience, self-efficacy, and technology acceptance among Chinese as a Second Language (CSL) teachers. The design was chosen to allow for the collection of standardized data from a large sample, enabling statistical modeling of the hypothesized relationships among variables.

3.2. Participants

In this study, participants were recruited based on the following criteria: (a) being currently employed as a teacher of Chinese as a second language (CSL), (b) having at least one year of teaching experience, and (c) being willing to voluntarily participate in the research. Using a convenient sampling method, a total of 444 CSL teachers were initially recruited.

After data screening to remove incomplete or invalid responses, 415 valid questionnaires were retained for analysis. The final sample included 205 males (49.4%) and 210 females (50.6%). Of these, 38.26% were engaged in teaching CSL outside mainland China. Participants' educational backgrounds varied: 221 held bachelor's degrees (53.3%), 48 held master's degrees (11.06%), 35 possessed Ph.D. degrees (8.4%), and 111 reported other educational qualifications (26.7%).

3.3. Instruments

3.3.1. Technology acceptance scale

The study used the scale developed by Liu et al. (2019) to assess teachers' acceptance of technology, consisting of 18 items using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) with two sections. The first section of the questionnaire drew educators' understanding regarding the factors associated with TAM, primarily taken from Teo's research (2011) as follows: PU (three items), PEU (three items), and INT (three items). The other section inquired about TTU (four items) and STU (five items). These items were largely adjusted from Becker's (2000) research on the goals of computer utilization, and the innovative ICT use questionnaire items developed by Drent and Meelissen (2008). Teachers scored these items on a 5-point scale, selecting from never to always. The reliability of the scale was 0.995.

3.3.2. Cognitive flexibility scale

To assess CF, Martin and Rubin's (1995) scale was employed, consisting of 12 items rated on a 6-point scale, ranging from 1 (strongly disagree) to 6 (strongly agree). A number of the items indicated CF and some others reflect its absence among subjects. The instrument reliability was determined 0.917, which is considered acceptable.

3.3.3. Teacher self-efficacy scale

Educators' views of self-efficacy were evaluated through Tschannen-Moran and Hoy's (2001) short-form scale. This concise scale consists of 12 items that assess three core subscales, namely, efficacy for student engagement, efficacy for educational strategies, and efficacy for class management. Responses were recorded based on a 5-point Likert scale, ranging from (1) "never" to (5) "always." In the present study, the internal consistency of the scale was 0.986, indicating satisfactory reliability.

3.3.4. Resilience scale

The study employed a 10-item scale that was adjusted and validated by Campbell-Sills and Stein (2007). This scale utilizes a Likert-type rating system, with response options ranging from 0 to 4, where "0" represents *not true at all* and "4" represents *true nearly all the time*. The scale reliability was determined at 0.88.

3.4. Procedure

The current investigation incorporated 415 teachers who worked at an institution of higher education in China. First, they were assured of their anonymity, and they were informed that their data would be used exclusively for research objectives, with strict adherence to the principle of anonymity. They answered the four questionnaires to evaluate their self-efficacy, resilience, CF, and technology acceptance levels. The study was conducted after ethical standards, ensuring that the subjects presented informed consent along with maintaining confidentiality to protect their rights. The next stage in analyzing the data was to make sure that it was free from unengaged responses. To do so, first, the patterns of answers were inspected. As a result, from 444 collected answers, 22 cases with odd patterns were identified and discarded. The final sample was left with 415 cases. The data collection was conducted over a period of ten days.

3.5. Data analysis

To answer the research questions, two primary software tools were used for data analysis: SPSS (version 27) and AMOS (version 24), each fulfilling distinct but complementary analytical functions. The information gathered from the scales was analyzed using structural equation modeling (SEM). Furthermore, the reliability of each scale was thoroughly reported. The interrelationships among the variables were also examined in line with the inherent covariance within the model. Furthermore, Multiple Regression analysis was run to evaluate the predictive roles of these variables.

4. Results

The first stage in analyzing the data was to make sure that it was free from unengaged responses. To do so, first, the patterns of answers were inspected. As a result, from 444 collected answers, 22 cases with odd patterns were identified and discarded. The final sample was left with 415 cases. A confirmatory factor analysis (CFA) model was created to make sure that the instruments are valid in the given context. Using SEM the standardized and unstandardized loadings of the items were inspected to make sure of the convergent validity.

As reported, the convergent validity of the instruments was assured. The CFA model with standardized estimates is depicted in Figure 1. In the figure, rectangles represent the items, large circles are the constructs/components, and the smaller circles starting with the letter “e” in their labels (e.g., e1) are the errors associated with each item or component.

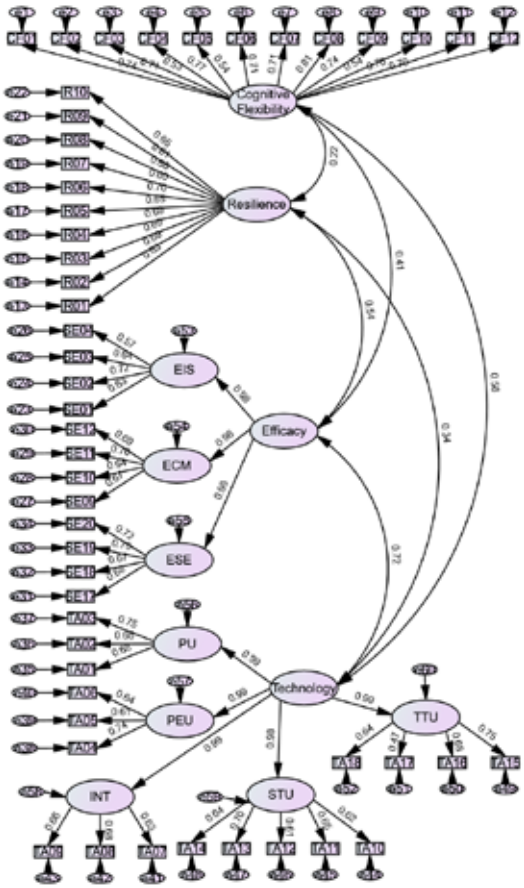

Figure 1. *The CFA model with standardized estimates*

To check the reliability and discriminant validity of instruments in the given context, a few measures were tested. Table 1 summarizes the results.

Table 1. *Reliability and validity of the factors*

					Fornell – Larcker Criterion			
	CR	AVE	MSV	MaxR(H)	CF	Resilience	Efficacy	Technology
CF	0.917	.484	0.342	0.926	**0.696**			
Resilience	0.885	0.437	0.288	0.887	0.225**	**0.661**		
Efficacy	0.986	0.959	0.514	0.986	0.405**	0.537**	**0.979**	
Technology	0.995	0.975	0.514	0.995	0.585**	0.339**	0.717**	**0.987**

** Correlation is significant at $p < .01$

As reported above, all instruments showed strong composite reliability (CR). Moreover, the inspection of MaxR(H), confirmed the strong (average) correlations among the items of the instruments. As for the discriminant validity, for all constructs, the maximum shared variance (MSV) was safely below the average variance explained (AVE) by that construct. Therefore, the discriminant validity was also acknowledged. Looking at the values below the Fornell–Larker criterion, the significant correlations among the variables are evident. The strongest correlation existed between self-efficacy and technology acceptance (r = .717), followed by CF and technology acceptance (r = .585), while resilience showed the weakest correlation with technology acceptance (r = .339). Using the values obtained from the imputation, the regression model (Figure 2) was created to answer the second research question. In this model, resilience and cognitive flexibility and teacher efficacy are the predicting variables and technology adoption is the predicted variable. The results of the SEM analyses are presented in Table 2, below.

Table 2. *Results of SEM for the measurement model*

			Unstandardized				Standardized Estimate	Multiple R^2
			Estimate	S.E.	C.R.	*p*		
Technology	←	Resilience	.121	.039	3.077	.002	.104	.687
Technology	←	CF	.286	.025	11.620	<.001	.356	
Technology	←	Efficacy	.796	.044	18.132	<.001	.664	
Efficacy	↔	Resilience	.252	.025	10.225	<.001	.582	
Efficacy	↔	CF	.274	.034	8.144	<.001	.437	
Resilience	↔	CF	.159	.033	4.870	<.001	.246	

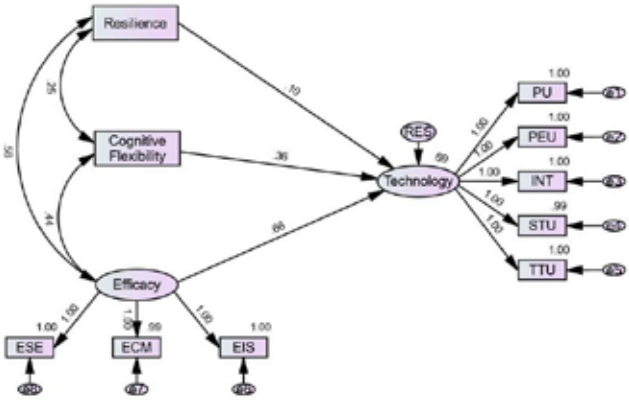

Figure 2. *The regression model*

As presented in Table 2 and depicted in Figure 2, resilience, CF and self-efficacy were all significant predictors of technology acceptance, jointly explaining 68.7% of its variance.

Among these variables, self-efficacy was the best predictor, uniquely explaining 44.1% (≈ $.664^2 = 0.441$) of the variation in technology acceptance. The second-best predictor of technology acceptance was CF, which could explain 12.7% (≈ $.356^2 = 0.127$) of its variance while resilience could only explain 1.1% (≈ $.104^2 = 0.011$) of it. The summary of the results is presented in Table 3.

Table 3. *Evaluation of the goodness of fit*

Criteria		Threshold			Evaluation
		Terrible	Acceptable	Excellent	
CMIN	50.38				
df	31				
CMIN/df	1.625	> 5	> 3	> 1	Excellent
RMSEA	.039	> 0.08	< 0.08	< 0.06	Excellent
CFI	.999	< 0.9	> 0.9	> 0.95	Excellent
TLI	.998	< 0.9	> 0.9	> 0.95	Excellent
SRMR	.003	> 0.1	> 0.08	< 0.08	Excellent

The results reported in Table 3 indicate that the model showed excellent goodness of fit.

5. Discussion

Based on the findings, the acceptance of technology within CSL environments is said to rely on multiple factors, such as CF, resilience, and self-efficacy. Regarding CF, the results indicated that there is a significant association between CF and technology acceptance, with teachers representing greater degrees of CF also demonstrating stronger technological competencies. The findings indicate that educators with greater CF are more skilled at incorporating technology into their education. That is, educators with higher proficiency at adapting their thinking and problem-solving tactics when faced with new difficulties tend to successfully adopt and use technological instruments in their classes (Mustafaoglu & Onen, 2016). This study has demonstrated that the promotion of CF among CSL teachers has a substantial effect on their capacity to effectively incorporate technology into their education which is in line with Braem and Egner (2018) who proved that people with greater degrees of CF are more adept at adopting innovative education technologies and adjusting their syllabus to it. This finding is consistent with Erarslan (2023), who asserts that EFL educators with high CF degrees adapt easily to abrupt conditions, allowing them to effectively navigate unexpected pedagogical shifts, including technological advancements.

Similarly, our results align with Ozen and Ucuncu (2022), who argue that individuals with adequate CF manage demanding and new situations effectively, generate alternative solutions, and make sound decisions in dynamic learning environments. In the context of technology-enhanced education, abrupt conditions may include the challenge of stepping out of one's comfort zone to engage with digital tools, transitioning to online or hybrid models, or adapting to emerging educational platforms. Educators with strong CF are more likely to embrace such shifts, as they perceive technological changes not as obstacles but

as opportunities for innovative teaching. The ability to flexibly restructure teaching methods when incorporating technology ensures that educators can refine instructional strategies, troubleshoot digital tools, and enhance student engagement.

Regarding resilience, it can be stated that educators who have great resilience are more adept at managing stress and implementing modern technologies, resulting in enhanced teaching practices and improved learner results. This underscores the necessity for academic institutions to develop resilience among CSL educators through specialized training and support programs. The learning and integrating process for modern technologies can be a source of stress for many educators. Resilience encompasses efficient emotional regulation, which enables educators to manage the anxiety and frustration usually associated with technological advancements. Resilient educators are more capable of maintaining a positive outlook and are less likely to experience burnout, thereby increasing their ability to embrace and use modern technologies.

In terms of self-efficacy, CSL teachers who possess a high level of self-efficacy in online environments tend to demonstrate greater enthusiasm and engagement in adopting and utilizing technologies. When the demands of technology-driven education are met in CSL classrooms, and educators feel confident in their capacity to manage online teaching, they are more inclined to embrace technology for language learning and adapt to the situations. Research, such as the present study, can improve CSL teachers' understanding of the psycho-affective dimension associated with technology incorporation in language learning. The present study is consistent with the findings of Corry and Stella (2018) and Sun and Chen (2016), who identified that technological self-efficacy among EFL learners is a significant predictor of their acceptance of technology. This is consistent with the self-efficacy theory of Bandura (2011), who believes that an individual's confidence in their ability to perform a task is fundamental to performing that task. Consequently, the results obtained can be attributed to the awareness of psycho-emotional factors influencing technology-driven L2 learning situations among Chinese CSL students. They acknowledged that their confidence in their technological skills promotes their technology acceptance in L2 teaching. People with a great level of self-efficacy have a higher potential to demonstrate a greater behavioral intention to accept the difficulties of uncertainties in unexpected situations (Bao et al., 2021).

Furthermore, studies on the effect of peoples' intention to employ technology showed that self-efficacy enables people to understand the adequate knowledge required for solving work issues (Pan, 2020). This finding is consistent with the research conducted by Hammouri et al. (2021), who emphasized that self-efficacy beliefs help promote technological acceptance in education. When educators exhibit high levels of self-efficacy, they adopt technologies in their teaching practices with greater willingness and assurance (Joo et al., 2018). Similarly, a study conducted in China by Zhao and Zhao (2021) revealed that university professors' digital nativity and their self-efficacy concerning computers can develop their level of propensity to adopt technology. Moreover, the findings are consistent with Granić (2022), arguing that educators' technological self-efficacy is one of the prevailing factors affecting technology acceptance in academic environments. The subjects potentially had substantial experience and understanding of the significant relationship between emotions and technology acceptance. This may be attributed to the emotional dimensions of education in CSL settings. Consistent with the aforementioned literature, our findings suggest that self-efficacy

is a significant psychological factor influencing educators' willingness to adopt technology. Higher self-efficacy correlates with greater confidence and adaptability, reinforcing the view that educators who perceive themselves as competent and capable are more inclined to engage with technology-enhanced teaching practices.

As Al-Hoorie (2018) has highlighted, there is growing recognition within educational psychology that reliance solely on questionnaire-based data limits the ability to fully explore causal relationships among variables. While the present study offers valuable insights into the associations between psychological constructs and technology acceptance in CSL teaching, it does not enable causal inferences due to its cross-sectional and self-report design. We acknowledge this important limitation and emphasize that the findings should be interpreted as indicative of correlations rather than definitive causal pathways. Future research employing longitudinal designs or experimental methods will be necessary to clarify the directionality and causality of these relationships, thereby advancing a more comprehensive understanding of the mechanisms underlying technology adoption in language education.

6. Conclusion And Implications

Education is a difficult profession, and the stress experienced by educators potentially impacts their psychological health. The forthcoming generation of educators is confronted with a difficult work setting that requires adaptation to new pedagogical methods through technology. Consequently, all stakeholders within the educational system must offer support to educators, enabling them to navigate these challenges and enhance their self-efficacy and CF. The incorporation of technology is a complicated process that necessitates the presence of various elements, such as educators' self-efficacy and resilience to utilize technology in the class. It is reasonable that CSL educators who demonstrate elevated degrees of self-efficacy and resilience in technology integration will exhibit increased passion and enthusiasm for embracing technologies. It can be inferred that educators may struggle to incorporate technology into their instruction if they do not perceive themselves as confident and qualified in technology. CSL educators can understand and develop their self-efficacy opinions and emotions to accept technology in their educational advancement. That is, educators with higher adaptability in contemplation and problem-solving tactics when confronted with new challenges have the potential to effectively adopt and utilize technological instruments within their classes.

The connection between the two skills highlights the necessity for educator education programs to prioritize not only the technical dimensions of technology but also the development of CF, which enables teachers to effectively use these instruments across varied class environments. This study explores the potential associations between CF and technology integration in instructional settings. While CF is conceptually linked to problem-solving abilities—particularly in instances where technology may malfunction or fail to meet expectations—the precise nature of this relationship remains an area for further investigation. Educators who report higher levels of CF tend to demonstrate stronger problem-solving strategies, enabling them to navigate technological challenges more effectively (Mustafaoglu & Onen, 2016). Additionally, the findings suggest that professional development, peer collaboration, and reflective practice could support educators in refining their instructional approaches and adapting to changing technological demands (Darling-Hammond et al., 2017).

However, the causal relationship between these interventions and CF development was not assessed in this study and requires future research. By investigating different pedagogical instruments and demanding feedback from students, educators can adapt their methods to address the changing class needs. Finally, developing CF is crucial for CSL teachers to succeed in an increasingly technology-oriented educational environment.

Based on the findings, several implications can be identified in different fields. In theory, the outcomes contribute to the literature concerning teacher psychology and the incorporation of technology within the CSL setting. By offering a general perception of the factors affecting CSL educators' acceptance of online education, the present research aims to offer practical suggestions for CSL educators, professional development initiatives, academic management, policy-makers, and technology companies. This research holds particular significance for CSL educators, who comprehend the effect of personality traits on their instructional behaviors and careers. For CSL educators, findings indicate that self-efficacy, resilience, and CF may be associated with their instructional behaviors and career trajectories. Educators who perceive themselves as confident and adaptable are likely to demonstrate more enthusiasm for technology adoption; however, further research is needed to establish the precise mechanisms underlying this relationship. Similarly, teacher educators could leverage these insights to design training programs that promote positive psychology frameworks, emphasizing adaptability and confidence in digital pedagogy. For example, CSL educators can benefit from focusing on tactics that enhance their self-efficacy and resilience. Teacher educators comprise another group that can use the findings of this research. They can utilize these results to design and present professional development programs that education incorporates technology through positive psychology.

Academic administrators play a critical role in supporting educators through technical training and institutional resources, which may contribute to enhanced technology integration practices. Likewise, education scholars could further explore the psychological dimensions of technology adoption, focusing on how educator beliefs and emotions interact with technological acceptance. However, the present research has several limitations that could be addressed in the future. First, the sample is drawn from a specific group of CSL educators, limiting the generalizability of the findings to broader educational contexts. Future studies should consider diverse participant pools across various cultural and institutional settings to enhance applicability. Second, the study predominantly relies on self-reported data, which may be subject to response biases, including social desirability effects. Incorporating objective assessments, behavioral observations, or multi-source validation could strengthen the reliability of the results. Additionally, the study does not explicitly examine institutional and policy-related influences that shape educators' experiences with technology integration. Future research could explore how institutional support structures, funding allocations, and national policies mediate the relationship between educator psychology and technology acceptance. Finally, the study does not account for longitudinal changes in educators' self-efficacy and CF over time. Since technology adoption is an evolving process, future investigations should employ longitudinal research designs to track shifts in educators' confidence, skill development, and adaptability.

Building upon these limitations, future research should explore multiple avenues to deepen understanding of educator psychology and technology adoption. In essence, future

scholars may employ a variety of research tools, including interviews, reflections, and observations to explore the correlations among the personal variables and technology acceptance. Similarly, future studies could investigate the incorporation of teachers' perspectives with those of learners. Eventually, further studies could examine the influence of cultural and other psycho-emotional elements on EFL learners' acceptance of technology. This study did not investigate the effect of cultural variations and settings in mediating the effects of self-efficacy, CF, and resilience on technology acceptance, which requires further investigation by researchers. Additionally, focus group studies could be conducted to explore the factors affecting each of the variables examined in this study. Another limitation of this study is the absence of gender comparisons, which could be addressed in larger-scale studies to determine whether CSL educators of different genders exhibit varying degrees of self-efficacy, CF, resilience, and technology acceptance. Incorporating qualitative methods such as interviews, focus groups, and classroom observations can provide richer insights into the psychological dimensions of technology integration. Investigating educator experiences across different educational systems and cultural backgrounds can reveal variations in psychological adaptation and institutional support mechanisms. Examining long-term changes in educators' self-efficacy and CF can provide insights into the sustained impact of professional development programs.

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