Predicting English as a foreign language learners' motivation through teachers' credibility and self-efficacy: Using structural equation modeling

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ABSTRACT: To boost students' motivation, educators have a noteworthy impact on this progress, and various aspects associated with teachers such as their traits and beliefs in their abilities. For a long time, it has been broadly acknowledged that self-efficacy is an essential element of motivation that impacts how students engage with their studies. Also, another element is the credibility of the teacher, which pertains to how much the students believe in the teacher. As a result, this study was carried out to inspect the impact of EFL teachers' self-efficacy and credibility on learners' motivation. Accordingly, 316 English as a Foreign Language (EFL) learners participated in the research. Three scales were given to the students and the gathered information was analyzed using structural equation modeling (SEM). The findings indicated that both teachers' credibility and self-efficacy have been proven to impact learners' motivation in the EFL educational field. 68% of changes in the EFL students' motivation can be predicted by their teachers' credibility, and about 71% of changes in the EFL learners' motivation can be predicted by their teachers' self-efficacy. The outcomes of the study and their implications for teaching stakeholders were presented to consider teacher-related factors, namely teachers' credibility and self-efficacy in boosting learners' motivation, and finally, suggestions for future studies were also provided.
Keywords: Credibility, English as a foreign language, Learner, Self-efficacy, Motivation, Teacher; Teacher-student relationship

La predictibilidad de la motivación de los estudiantes de inglés como lengua extranjera a través de la credibilidad y la autoeficacia de los profesores

RESUMEN: Para aumentar la motivación de los estudiantes, los educadores tienen un impacto notable en este proceso, y diversos aspectos asociados a los profesores como sus rasgos y creencias en sus capacidades. Durante mucho tiempo, se ha aceptado ampliamente que la autoeficacia es un elemento esencial de la motivación que influye en cómo los estudiantes se involucran con sus estudios. También, otro elemento es la credibilidad del profesor, que se refiere a cuánto creen los estudiantes en el profesor. Como resultado, este estudio se realizó para examinar el impacto de la autoeficacia y la credibilidad de los profesores de inglés como lengua extranjera (EFL) en la motivación de los alumnos. En consecuencia, 316 estudiantes de inglés como lengua extranjera (EFL) participaron en la investigación. Se les entregaron tres escalas a los estudiantes y la información recopilada se analizó mediante el modelado de ecuaciones estructurales (SEM). Los resultados indicaron que tanto la credibilidad como

la autoeficacia de los profesores han demostrado tener un impacto en la motivación de los alumnos en el campo educativo de EFL. El 68% de los cambios en la motivación de los estudiantes de EFL pueden ser predichos por la credibilidad de sus profesores, y alrededor del 71% de los cambios en la motivación de los alumnos de EFL pueden ser predichos por la autoeficacia de sus profesores. Se presentaron los resultados del estudio y sus implicaciones para las partes interesadas en la enseñanza para considerar los factores relacionados con los docentes, es decir, la credibilidad y la autoeficacia para impulsar la motivación de los alumnos y, finalmente, también se proporcionaron sugerencias para estudios futuros.
Palabras clave: Autoeficacia, Credibilidad, Estudiante, Inglés como lengua extranjera, Motivación, Profesor; Relación profesor-estudiante

1. Introduction

The language education field still has a significant journey ahead so students must have enough determination to achieve their goals which are called motivation (Dörnyei, 2019). In essence, motivation has been considered the cornerstone of human accomplishment, not only in one's personal life but also in the academic domain (Al-Hoorie, 2017). Also, it is of utmost important concept when it comes to acquiring a second or foreign language (Wijaya, 2017). Indeed, a lack of motivation can hinder the learning process and make it challenging for learners to continue, especially when faced with obstacles along the way (Dörnyei, 2019; Pishghadam et al., 2021). In recent times, due to the role of positive psychology (PP) in the fields of language acquisition and teaching, and motivation in language instruction has begun to be taken into consideration as a sub-component of PP (Derakhshan, 2022a, Wang et al., 2021; Dewaele et al., 2019; MacIntyre et al., 2019). In an EFL setting, where students' drive to learn the language comes primarily from external factors, educators hold a significant role in increasing or decreasing students' motivation (Dörnyei, 2019; Zhang et al., 2020). Educators have a substantial impact on learners and their function is more of a facilitator and mentor that can boost student motivation and mental health and guarantee their success (Derakhshan, Wang et al., 2023; Xue, 2022; Zheng, 2021). A learner might enter the classroom with a particular level of motivation; however, the behavior of the educator, pedagogical methodology, and the type of communication all significantly impact the instructor's responsibility in fostering the learner's motivation (Kerssen-Griep, & Witt, 2012; Xie & Derakhshan, 2021). In the context of education, an educator's confidence in their capability to do their academic responsibilities is known as a teacher's self-efficacy that which can enhance their learners' success (Derakhshan et al., 2023; Gershenson, 2016). It is a set of convictions that a teacher holds regarding their capability to instruct and influence their student's behavior and performance, despite external factors or barriers that may exist (Bandura, 2010; Lu & Mustafa, 2021). Self-efficacy also has significant effects on cognitive, motivational, affective, and decision-making processes, which can lead individuals to think positively or negatively about themselves and their capabilities (Derakhshan & Fathi, 2023; Fathi et al., 2020).

Moreover, research has shown that the attendance or absence of students can be impacted by communication practices (Derakhshan, 2021; Wang & Derakhshan, 2023; Wang et al., 2021). As pinpointed by some scholars, the actions and words of teachers in the classroom are highly significant in eliciting positive or negative perceptions from both the

learners and themselves (Derakhshan, 2022b; Pan et al., 2023). Therefore, teacher traits such as stroke, credibility, and accomplishment have been identified as crucial factors in determining the academic achievement of students (Pishghadam et al., 2019). Among them, teacher credibility got researchers' attention recently (Enskat et al., 2017; Fisher & Frey, 2019). Credibility refers to the level at which students perceive their educators as believable and this impression is crucial for all educators to maintain, as it directly impacts the effectiveness of their teaching and the outcomes achieved by their students (Derakhshan, 2021; Zee & Koomen, 2016). Some scholars have inspected the role of teacher credibility in EFL settings and noted that how students perceived the credibility of their teachers had a direct correlation with an improvement in their knowledge (Enskat et al., 2017; Pishghadam et al., 2021; 2023; Zheng, 2021). Moreover, a significant amount of practical research has been conducted thus far to demonstrate the correlation between teacher credibility and various factors such as students' eagerness to attend lectures and their level of involvement (Derakhshan, 2021; Rezvani & Miri, 2021; Pishghadam et al., 2019, 2021; Zheng, 2021). It is also demonstrated that students displayed more enthusiasm and favorable emotions when taught by credible instructors as opposed to those who were deemed uncredible (Pogue & AhYun, 2006). As credibility in academic domain is closely associated with the confidence students have in their teachers, and it significantly affects the learning process, it draws the researcher's attention to this concept. Aristotle's influential theory focuses on three facets of credibility that gives to effective persuasion: the speaker's intelligence, their ethical character, and their kindness or altruism towards others (Derakhshan, 2021). By acknowledging the aspects of credibility, educators can make efforts to reinforce these dimensions and nurture an effective learning experience for their learners. Therefore, identifying the influence of it on students' motivation is critical for creating an encouraging learning environment for language learners. Regarding the key role of teachers in the path of language learning, it is challenging to reflect the possible effect of teachers' self-efficacy on learners' motivation. Moreover, extensive investigation has demonstrated that the self-efficacy of educators can impact both their performance and that of their learners (Aslam & Ali, 2017; DelGreco et al., 2018; Lu & Mustafa, 2021; McDavid et al., 2018; Mojavezi &Tamiz, 2012; Shahzad & Naureen, 2017). Nevertheless, upon reviewing the literature available on these concepts, one can come across to delve into the gap that these inquiries have neglected to explore the impact of the credibility and self-efficacy of teachers on learners' motivation in the EFL context on one hand and among Chinese learners on the other hand. Accordingly, in light of the aforementioned issues, the current research endeavors to address the following question:

RQ1: Do Chinese EFL teachers' credibility and self-efficacy predict students' motivation?

2. REVIEW OF LITERATURE

2.1 Teacher Credibility

In an educational setting, scholars attempt to make the credibility of the educator essential to foster students' learning and comprehension (McCroskey & Teven, 2013). The

credibility of an educator has been characterized as the perception of a student toward an educator in terms of the educator's perceived trustworthiness, and researchers have substantiated its significance in classrooms over the past three decades (Finn et al., 2009). In the past, this construct was related to the "Theory of Rhetoric" where Aristotle categorized methods of convincing into three key groups: Pathos, Logos, and Ethos. As stated by Aristotle, the first is characterized as the characteristic of a convincing demonstration that evokes the emotions of the audience (Pishghadam & Karami, 2017). He described the second as the reasoning employed to justify the results (Nayernia et al., 2020). Also, the last one is viewed as the most effective means of encouragement, which speakers use as a rhetorical tactic to instill confidence in their audience (Derakhshan, 2021). Aristotle proposed the concept of teacher credibility involves three aspects that are associated with ethos such as "Competence," "Trustworthiness," and "Caring" (Banfield et al., 2006). Competence pertains to the degree to which an educator is well-informed in the perspective of his/her students (Zhang, 2009).

Skilled instructors clarify the subject matter proficiently, employ effective classroom control strategies, possess the capability to respond to learner questions, and interact efficiently (Teven & Hanson, 2004). Regarding the second element, trustworthiness concerns the extent to which pupils have trust in their educators (Pishghadam et al., 2017). A credible instructor provides logical justifications for evaluations, treats pupils equitably, and provides prompt responses (Teven & Hanson, 2004). Ultimately, caring pertains to the extent of focus educators allocate toward the feelings, desires, and interests of their pupils (Santilli et al., 2011). Teachers must possess the ability to effectively converse with their students and display genuine concern toward them to be regarded as caring (Teven & Hanson, 2004). The degree of credibility plays a crucial part in establishing a good relationship in the classroom since learners are unlikely to accept information from an untrustworthy source. Additionally, imparting knowledge to students does not only rely on the content and the way it is delivered but also on the level of credibility of the source of information (Teven, 2008).

2.2 Teacher Efficacy

For an extended period, it has been vastly adopted that self-efficacy is a crucial component of motivation that pertains to an individual's attitudes regarding their capacity to strategize and accomplish objectives, and serves as a pivotal aspect in motivation (Han & Wang, 2021). Tschannen-Moran and Johnson (2011) emphasized that self-efficacy of teachers is not solely a subjective assessment of professional ability but also an attitude regarding their capabilities in various circumstances. In fact, it pertains to how individual educators perceive their own identities, their instructional proficiency, and their expertise in the field (Fathi et al., 2021). Bandura (2011) identifies four key sources that can contribute to an individual's development of self-efficacy: individual experience with proficiency, vicarious experiences, persuasion from others, and emotional and physiological states-firsthand individual experience or self-guided education, such as finishing assignments or seeking advice from authorities. As per Tschannen-Moran and Hoy (2007), accomplishments are affirmative occurrences that stem from previous effective teaching episodes. Another source of self-efficacy, as Bandura (2011) stated, is vicarious experience, which involves observing others carrying out tasks

or activities. This type of experience allows individuals to identify competent and effective models based on which they can shape themselves. These models can then be used to strengthen an individual attitude in their capability to thrive. Furthermore, social persuasion or verbal encouragement is another origin that can influence self-efficacy. Improved verbal encouragement and feedback from others can lead to the growth of competence and greater self-efficacy. Granziera and Perera, (2019) explain that social persuasion, or verbal encouragement, can increase one's confidence that they can achieve their goals by utilizing their abilities and eliminating doubts. This type of encouragement can come from various social and situational agents, such as managers, educators, parents, friends, and peers. The fourth source of self-efficacy is associated with emotional and psychological factors that can influence a person's emotional state. For instance, feelings of enthusiasm, anxiety, and stress can affect a person's emotional conditions and potentially challenge their self-efficacy (Baharloo & Mehrpour, 2016). In a nutshell, teacher efficacy plays an essential role in determining teachers' effectiveness, which ultimately results in producing more successful learners and the inadequate self-efficacy of educators can have an unfavorable influence on their perceived competence, which can pose a difficulty for pupils (DelGreco et al., 2008; Wossenie, 2014).

2.3 Student Motivation

Motivation is an individual's internal stimulus, serving as a propelling force or inspiration to engage in activities or accomplish tasks and it encompasses passion and determination, coupled with a sense of excitement that fosters perseverance in striving for excellence, irrespective of one's life trajectory (Al-Hoorie, 2017; Kirkpatrick et al., 2024). Furthermore, it is closely linked to the motivation for goal-oriented behaviors (Singh, 2011). Ryan and Deci (2020) proposed the Self-Determination Theory (SDT) to elucidate the function and power of motivation in individuals, which classifies human behavior motivation along with the level of internalization. As per this theory, individuals regulate their conduct and personal growth based on various types of motivation. Following the proposition of SDT, persons possessing inherent motivation possess an inborn reserve of power and inherent wisdom, experience contentment upon accomplishing a task, eagerly participate in activities that generate exciting emotions, and demonstrate a readiness to acquire fresh knowledge (Deci & Ryan, 2016).

2.4 Related Studies

Santilli et al. (2011) conducted separate research that delved into the teachers' credibility and nonverbal immediacy concurrently. Upon finishing the questionnaires, findings revealed that there exists a favorable correlation between the components of a teacher's credibility and their nonverbal immediacy. Additionally, it was indicated that when pupils perceive their teachers as credible, they display heightened drive and enhanced accomplishment. Mojavezi and Tamiz (2012) examined the effect of teacher effectiveness on the motivation and academic function of learners. For this purpose, a total of 80 educators from 4 diverse cities in Iran and 150 students have been chosen randomly. The related measurements were finished and the information was examined. The outcomes of the research

by utilizing ANOVA demonstrated that the instructors' self-efficacy in themselves has a favorable impact on the motivation and performance of students. McDavid et al. (2018) explored how instructors view the role of their self-efficacy in promoting their learners' involvement. A total of 148 educators were requested to fill out questionnaires. The study revealed a positive correlation between the engagement of learners and the efficacy of teachers. Specifically, the respondents regarded the efficacy of educators as a significant predictor of their students' involvement.

Later, Lee (2019) investigated the viewpoints of students regarding the credibility and immediacy of their instructors, as well as their inclination to interact during the course. To accomplish this, two hundred and fifty-two undergraduate students from Korea were assigned to either native or non-native English-speaking teachers. Both groups, exposed to dissimilar instructors, were required to respond to relevant scales. Findings revealed that the elements of teacher immediacy and credibility exhibited a significant correlation in both groups. That is, credible teachers, are greater able to inspire college students to interact. Pishghadam et al. (2019) investigated the influence of teacher touch and credibility on learners' willingness to participate in classes (WTAC). By doing this, the Teacher Credibility Scale, Teacher Stroke Scale, and WTAC Scale were distributed among 276 undergraduate students studying in different English domains. The outcomes of path analysis demonstrated that learners' eagerness to participate in classes was positively and significantly predicted by instructor credibility and stroke. Derakhshan (2021) tried to investigate the impact of nonverbal immediacy and credibility of Persian language instructors on the academic involvement of their Turkman pupils. To accomplish this, a total of 503 learners were involved and the three measuring instruments were administered among the respondents. The outcomes demonstrated that favorable connections exist among the nonverbal immediacy and credibility of instructors, as well as the students' engagement. The results obtained from the SEM indicated that the academic engagement of students was anticipated by the nonverbal immediacy and credibility of their language instructors.

Recently, Zheng (2021) investigated the influence of instructors' clarity and credibility on promoting learners' involvement and eagerness to participate in classes. To achieve this goal, eight hundred and thirty-two students in China were given relevant surveys. By conducting correlational examinations, significant connections were indicated between the clarity and credibility of instructors and the involvement and eagerness of students to attend classes. The outcomes of SEM revealed that both factors are potent predictors of learners' involvement and eagerness to participate in classes. Likewise, Pishghadam et al. (2023) investigated the correlation between the credibility of English as a foreign language instructor and the eagerness of their pupils to participate in lessons. To achieve this objective, four hundred and forty-six students learning English as a foreign language were provided with two tools to express their opinions. The findings revealed that credibility was regarded as a crucial precursor to learners' inclination to attend classes both in Iran and Iraq. Although the above-mentioned studies each focused on the variables of the study, there are no studies to consider both issues, namely teachers' credibility and self-efficacy in boosting learners' motivation all in the same study. As a result of this study, the present research might be significant as it considers them.

3. METHOD

3.1 Participants

The primary subjects of the present investigation were 316 male and female learners in China, aged 20 to 34, chosen through the method of convenience sampling. The participants were from 16 distinct universities across 7 provinces in China. They were requested to fill out three scales after being briefed on the aims of the study and guaranteed the safety and confidentiality of their responses.

3.2 Instruments

Self-efficacy Questionnaire

The measurement of educator efficacy resources was carried out with the help of a twenty-six-point questionnaire that utilized a seven-point Likert ranging from 1 to 7. This scale was developed by Tschannen-Moran and Hoy (2001) including three secondary scales, namely educational strategies, class management, and learner engagement, which helped to identify the unique aspects of educator efficacy. It is worth mentioning that the researchers adapted the scales to be answered from learners' perspectives. The reliability coefficient of the questionnaire was. 0.857.

Credibility Scale (SCS)

To evaluate how the students viewed their educators' credibility, we utilized the Source Credibility Scale created by McCroskey and Teven (2013) and it comprises 18 questions assessed by a 7-point bipolar scale and they are divided into three categories: competence, goodwill, and trustworthiness. In this study, the SCS had a reliability of 0.789.

Motivation Questionnaire

Another scale employed in this investigation was the motivation questionnaire, which consisted of twenty-eight items and was developed by Vallerand et al. (1989). The study utilized the 5-factor version of the questionnaire, as recommended by Deci and Ryan (1985) in their initial proposal. The internal coherence of the questionnaire was evaluated. The scholar personally distributed the questionnaires and written informed consent forms to medical students. The research goal was explicitly stated, and each participant was allotted 30 minutes to fill out the questionnaire. The reliability of the questionnaire was 0.851.

3.4 Procedure

A sum of 316 pupils studying TEFL and English Language and Literature at diverse educational institutions situated in China took part in this research. The contenders evaluated the credibility and self-efficacy of their English language mentors. Following this, the participants assessed their level of motivation. The sample, acquired through the use of the convenience sampling technique, comprised of male 148 male and 168 female

learners whose ages varied from 18 to 42 years. All respondents consented to complete the questionnaires and sign the corresponding consent documents. Additionally, they were guaranteed the privacy of their information and the utilization of it solely for research objectives. The validity of instruments has been rigorously addressed in studies related to intercultural communication:

1. Self-Efficacy in Intercultural Communication Scale (SEIC): A study on the SEIC, a self-efficacy questionnaire, underwent a validation process. The study assessed concurrent validity, supporting the scale's validity by correlating SEIC with intercultural effectiveness competencies and language skills.

2. Credibility Questionnaire: Researchers ensured validity through established credibility measurement principles, such as content validity and reliability testing.

3. Motivation Questionnaire: motivation measurement in intercultural studies typically involves assessing participants' willingness, engagement, or interest, with validity ensured through sound survey design principles.

The study took measures to ensure the instruments' appropriateness for the context of the study. This included obtaining expert opinions and aligning questions with the cultural and linguistic backgrounds of the participants.

3.5 Data Analysis

The selected thresholds were based on statistical principles or criteria relevant to the goodness-of-fit assessment. They are used in the literature (Benito et al., 2023; Royle et al., 2014). The thresholds ensures that the estimator fits the model accurately, preventing biases and inaccuracies in parameter estimates. The thresholds have a direct impact on model fit indices such as RMSEA, CFI, and TLI. Properly chosen thresholds contribute to a more accurate representation of the relationships between latent constructs, enhancing the overall fit of the SEM. In addition, the chosen thresholds are fundamental in the model selection process, guiding the confrontation of candidate SEM models with data. The fit testing of models relies on the appropriateness of chosen thresholds to ensure a meaningful comparison between different models. Finally, assessing SEM fit using equivalence testing is considered a best practice as it quantifies a minimal tolerable amount of difference, ensuring the practical significance of the chosen thresholds in maintaining model fit.

4. RESULTS

At the beginning of the study, the internal consistency of the three scales was checked by using Composite Reliability.
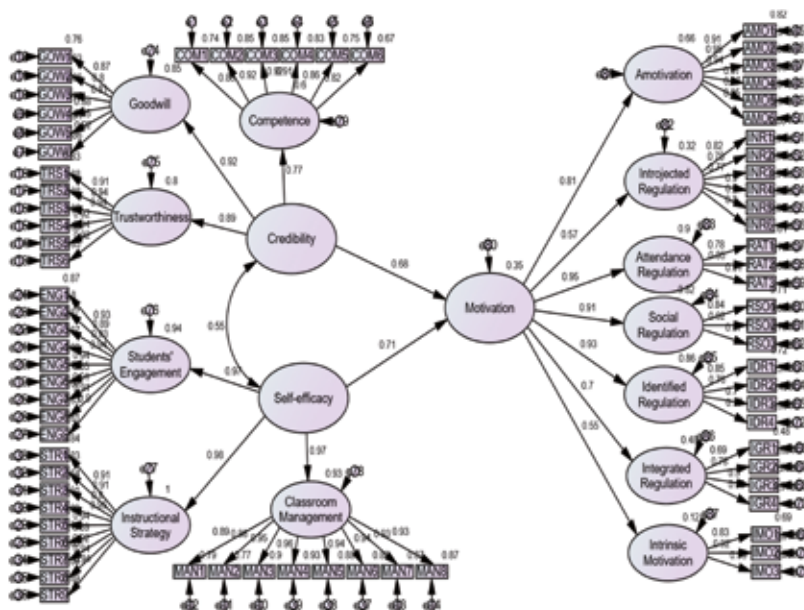
Figure 1. *The Final Measurement Model with Standardized Estimates*

Table 1. *Evaluation of the CFA Goodness of Fit*

Criteria		Threshold			Evaluation
		Terrible	Acceptable	Excellent	
CMIN	7136.331				
DF	2540				
CMIN/DF	2.810	> 5	> 3	> 1	Acceptable
RMSEA	.076	> 0.08	< 0.08	< 0.06	Acceptable
GFI	.953	< 0.9	> 0.9	> 0.95	Acceptable
CFI	.952	< 0.9	> 0.9	> 0.95	Acceptable
PNFI	.762	< 0.5	> 0.5		Acceptable
TLI	.947	> 0.9	> 0.9	> 0.95	Acceptable

In Table 1, the result designated that five determiners are the ratio of CMIN-DF, goodness-of-fit index (GFI), comparative fit index (CFI), Parsimonious Normed Fit Index (PNFI), Tucker–Lewis Index (TLI), and root mean square error of approximation (RMSEA). The model fit indices are all within specifications. Therefore, CMIN/DF is 2.810 (spec. ≤ 3.0), GFI = 0.953 (spec. > 0.9), CFI = .952 (spec. > 0.9), PNFI = 0.762 (spec. > 0.5), TLI = 0.947 (spec. > 0.9), and RMSEA = 0.076 (spec. < 0.080).

Table 2. *Composite Reliability and Discriminant Validity of the Factors*

	CR	AVE	MSV	MaxR(H)	Credibility	Motivation	Self-efficacy
Credibility	0.834	0.681	0.743	0.843	**0.789**		
Motivation	0.912	0.736	0.523	0.896	0.692	**0.851**	
Self-efficacy	0.889	0.759	0.714	0.873	0.895	0.703	**0.857**

The results of Table 2 show that composite reliabilities of the factors are acceptable ($CR > 0.70$). In other words, the model has achieved composite reliability. The values also demonstrate that the convergent validity of the factors reaches an acceptable value ($AVE > 0.50$) or the model has achieved convergent validity.

Table 3. *Results of Linear Regression Analysis with SEM*

			Estimate	S.E.	C.R.	P
Motivation	←	Credibility	.683	.092	-7.064	.000
Motivation	←	Self-efficacy	.706	.050	9.301	.000
Competence	←	Credibility	.772	.060	13.594	.000
Goodwill	←	Credibility	.922	.064	17.223	.000
Trustworthiness	←	Credibility	.892	.055	15.367	.000
Students Engagement	←	Self-efficacy	.968	.047	21.892	.000
Instructional Strategy	←	Self-efficacy	.999	.042	26.034	.000
Classroom Management	←	Self-efficacy	.966	.060	13.594	.000
Amotivation	←	Motivation	.812	.055	15.781	.000
Introjected Regulation	←	Motivation	.568	.035	9.430	.000
Attendance Regulation	←	Motivation	.951	.048	14.656	.000
Social Regulation	←	Motivation	.907	.055	15.367	.000
Identified Regulation	←	Motivation	.928	.055	15.781	.000
Integrated Regulation	←	Motivation	.696	.050	9.301	.000
Intrinsic Motivation	←	Motivation	.547	.031	5.734	.000

The results of Table 3 represent that uniquely about 47 percent of changes in the EFL learners' motivation can be predicted by their teachers' credibility. The value suggests a good fit with a large effect size for the prediction power between motivation and expected teachers' credibility. The results also indicate that uniquely about 50 percent of changes in their motivation can be predicted by their teachers' self-efficacy. The value suggests a good fit with a large effect size for the prediction power between motivation and expected self-efficacy. However, the final measurement model reveals that about 35 percent of changes in the EFL learners' motivation can be predicted by the interaction impact of teachers' credibility and self-efficacy. The interaction value suggests a good fit with a large effect size for the prediction power of teachers' credibility and self-efficacy in their motivation.

Figure 2. *The Final Measurement Model*

5. DISCUSSION

The results presented in this research confirm the importance of teachers' efficacy and credibility in determining student motivation. Indeed, the study highlights that the impact on student motivation is considerably greater when a teacher possesses both high credibility and efficacy. If educators concentrate on attaining a high level of credibility and efficacy, they can influence student motivation which leads to students' success.

Regarding the role of educators' self-efficacy on learners' motivation, the outcomes correspond to Bandura's observation that educators possessing a robust sense of competence can effectively inspire their pupils and enhance their intellectual growth (Bandura, 2010). Indeed, the teachers' self-efficacy can influence a learner's achievement through diverse channels; for instance, teachers who exhibit robust self-efficacy are more prone to introducing creative pedagogical approaches and employing influential classroom administration tactics and instructional methodologies. Also, they are more inclined to encourage student independence, manage learners with distinctive learning requisites, and handle classroom difficulties, as against those with a low degree of self-efficacy (Choi & Lee, 2016). The research carried out by Gibbs and Powell (2012) supports the findings of this research concerning the favorable impacts of instructors' self-efficacy on the academic outcomes of students. Their study revealed that educators with strong self-efficacy in their teaching abilities are inclined to invest substantial energy in conveying course material, leading to improved language proficiency among their pupils. Indeed, if educators possess positive and strong beliefs regarding their capacity to instruct proficiently, they are inclined to dedicate more time and effort towards their pedagogical approaches. Consequently, this results in superior academic achievements for language learners. Likewise, the results are supported by the studies done by (Aslam & Ali, 2017; DelGreco et al., 2018) as these studies proved that a clear connection exists

between science teachers' self-efficacy and learners' motivation to learn. Indeed, the high self-efficacy of teachers positively impacts students' motivation to succeed.

The findings of this study demonstrated that teacher credibility is in connection with learner motivation, demonstrating that teachers with high credibility have students who report elevated levels of motivation. Regarding the role of credibility in students' motivation, this connection can also be explained by the rhetorical-interpersonal objective theory suggested by Mottet et al. (2006), which connects educators' rhetorical actions, like credibility, with learners' educational behavior. Aligned with the rhetorical viewpoint and universal patterns of educational communication (Schrodt et al., 2009), this framework placed importance on the dual role of credibility concerning instructors' communication conduct and its effect on learners' academic achievements. The other reasonable explanation for this relationship is the idea that before entering the teaching and learning environment, students have some expectations. When their expectations are met and they find their teachers competent, caring, and honest as they assumed, they develop higher levels of affective learning and get more motivated to study (Pogue & Ahyun, 2006). The outcome is in the same line with Finn et al.'s (2009) meta-analysis on the credibility of instructors, which indicated that credibility depended on instructors' affirming, lucid, and promptly responsive actions, while simultaneously having a positive correlation with students' academic achievements. Moreover, this correlation can be readily explained by the reality that learners who are given structured and explicit guidance are more likely to engage in the educational procedure (Brewer & Burgess, 2005). It can be contended that the credibility of an instructor is a product of the instructor's communication conduct, which results in the educational accomplishments of the pupils, encompassing cognitive, emotional, and behavioral attainments (Xie & Derakhshan, 2021). Also, the connection between the credibility of teachers and the motivation of students can be described by the fact that competent and reliable educators are more influential (Wheeless et al., 2011). It can be argued that credible educators, as agents of education, arguably have a crucial function in fostering and sustaining enthusiasm and involvement in teaching practices and academic coursework. They adhere to the values of ethical conduct and proficiency; and demonstrate exemplary conduct towards learners. A proficient teacher brings about noteworthy social and educational modifications in the classroom and, as a result, amplifies the assessment, communication, and acquisition of knowledge of the pupils (Fisher & Frey, 2019). The association between teachers' credibility and students' motivation can be described in this way when pupils perceive their language instructors as capable, reliable, and attentive, they exhibit enhanced motivation. Due to the act of educators, learners are prone to interpreting greater degrees of proficiency, dependability, and compassion in their mentors. These interpretations of the credibility of instructors might, in turn, improve the determination of learners to continue with the course and curriculum, and these outlooks are probable elements of their motivation. This is in agreement with the overall concept of educational communication proposed by McCroskey et al. (2004), which recognizes that the traits and actions of teachers are crucial elements in the path of education. The association between teachers' credibility and students' motivation can be elucidated by the fact that when students consider their teachers as competent, trustworthy, and attentive persons, they demonstrate increased achievement and higher degrees of engagement (Santilli et al., 2011). In this regard, Amiryousefi and Mirkhani (2019) noted that when EFL learners consider their teachers as credible, their motivation to engage with language learning tasks increases.

6. Conclusion And Implications

The results of this investigation provided factual confirmation to the assertion made by Pogue and Ahyun (2006), demonstrating a meaningful relationship between teacher credibility and learners' motivation. The study proved that teachers with a high degree of credibility had students who reported elevated degrees of motivation. A practical justification for this correlation is the concept that students hold certain anticipations prior to engaging in the educational setting. Once these anticipations are fulfilled and they encounter instructors who are proficient, empathetic, and trustful, they experience an increase in emotional learning and become more inspired to pursue their studies (Pogue & Ahyun, 2006).

The results can be achieved by creating a setting where the learners' questions are answered, their ideas are welcomed (Schrodt et al., 2009). As a result, this causes a favorable caring, social bond, and communication between learners and educators that ultimately result in enhanced motivation (Karimi & Ziaabadi, 2019).

Educators who are self-efficacious have a constructive effect on their learners' performance. These teachers often can motivate learners, and they can contribute to their student's achievements (Kilday et al., 2016). In congruent with the findings of the research, teacher self-efficacy is established as a significant aspect that is associated with academic outcomes, particularly regarding the achievement of the learners. The self-efficacious teacher is an individual who believes in himself and his professional abilities, and an educator with a strong degree of efficacy is accountable for the student's learning and may view students' obstacles as a thrust to make more effort to improve learners' motivation.

Regarding the implications, instructors who train educators should promote the use of self-efficacy approaches to overcome the various challenges associated with their profession. To achieve this, it is recommended that workshops be organized where educators can collaborate positively, as this is an actual means of improving their self-efficacy and ultimately leading to the motivation of their students. Educational professionals, teacher trainers, and language policymakers ought to recognize the value of teachers' constructive role, including their self-efficacy in delivering impactful instruction that ultimately leads to students' motivation and success. Moreover, this research can assist educators in EFL teacher training who are interested in expanding the discipline and cultivating a deeper comprehension of the strategies teachers can employ to foster student motivation.

This research can have implications for educators and teacher trainers by assisting them in understanding the significance of certain elements such as teacher credibility and self-efficacy in promoting favorable results concerning the learners. Therefore, instructors and teacher trainers who are interested in enhancing the favorable results of EFL courses can take into account the results of this research and implement them. Besides, the results of this study are advantageous for material developers, as they can create materials and textbooks in which interpersonal interaction behaviors in addition to educational considerations are fostered. They can develop materials in a manner that allows teachers to enhance their credibility as instructors, as without credibility, their efforts are ineffective. How teachers communicate with others has mainly been examined from the viewpoint of the learners, while the viewpoints of other parties involved have been ignored. In the future, research can focus on the viewpoints of supervisors, teacher educators, and the instructors themselves.

Since the study did not consider the gender, age, and proficiency levels of the participants in English, one path of research could involve investigating the impact of these factors on the proposed model to provide a more exact explanation of the interconnectedness. Another constraint of this investigation that could be enhanced in subsequent research is the data gathering instruments that included just questionnaires. Future inquiries might achieve a more detailed depiction of the results by utilizing alternative techniques for data collection like interviews and observations. The other prominent limitation pertains to the reliance on self-report scales for data collection. This approach may introduce response bias and social popularity effects. Future research would take advantage of integrating objective measures or multiple databases to improve the validity and reliability of the results. Moreover, scrutinizing the efficacy of interventions designed to enhance teachers' credibility and self-efficacy could offer practical insights for teachers and institutions striving to improve student motivation.

7. REFERENCES

Al-Hoorie, A. H. (2017). Sixty years of language motivation research: Looking back and looking forward. *SAGE Open, 7*(1), 1–11. https://doi.org/10.1177/2158244017 701976.

Amiryousefi, M., & Mirkhani, M (2019). Interrelationships between willingness to communicate, self-concept, ideal L2 self, and teacher credibility among Persian language learners in Iran. *Journal of Teaching Persian to Speakers of Other Languages (JTPSOL)*, *8*(18), 51-68.

Aslam, S., & Ali, M. S. (2017). Effect of self-efficacy on students' achievement in science: A case of secondary school students in Pakistan. *European Journal of Education Studies, 3*(2), 85–95. https://doi.org/10.5281/zenodo.1050292.

Baharloo, A., & Mehrpour, S. (2016). The interplay among self-efficacy, perceptions of instructional supervision, and teaching performance: a case of Iranian EFL teachers. *Journal of Modern Research in English Language Studies*, *3*(1), 130–111.

Bandura, A. (2010). Self-efficacy. In. B. Weiner, & W. E. Craighead (Eds.), *The crostini encyclopedia of psychology* (pp.1534–1536). New York,NY: Wiley. https://doi.org/10, 9780470479216.

Bandura, A. (2011). A social cognitive perspective on positive psychology. *Journal of Social Psychology*, *26*(1), 7–20. https://doi.org/10.1174/0213474 11794078444

Banfield, S. R., Richmond, V. P., & McCroskey, J. C. (2006). The effect of teacher misbehaviors on teacher credibility and affect for the teacher. *Communication Education 55*(3), 63–72. https://doi.org/10.1080/03634520500343400.

Benito, S., López-Martín, C., & Navarro, M. Á. (2023). Assessing the importance of the choice threshold in quantifying market risk under the POT approach (EVT). *Risk Management*, *25*(1), 6. https://doi.org/10.1057/s41283-022-00106-w

Brewer, E. W., & Burgess, D. N. (2005). Professor's role in motivating students to attend class. *Journal of STEM Teacher Education, 42*(3),23–47.

Choi, E., & Lee, J. (2016). Investigating the relationship of target language proficiency and self-efficacy among non-native EFL teachers. *System, 58*(2), 49–63. https://doi.org/10.1016/j.system.2016.02.010.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York.

Deci, E.L., & Ryan, R.M. (2016). Optimizing students' motivation in the era of testing and pressure: Liu, W., Wang, J., Ryan, R. (Eds.), *A self-determination theory perspective Building autonomous learners* (pp. 9–29): Springer. https://doi.org/10.1007/978-981-287-630-0_2.

DelGreco, R., Bernadowski, C., & Parker, S. (2018). Using illustrations to depict preservice science teachers' self-efficacy: A case study. *International Journal of Instruction, 11*(2), 75–88. https://doi.org/10.12973/iji.2018.1126a.

Derakhshan, A. (2021). The predictability of Turkman students' academic engagement through Persian language teachers' nonverbal immediacy and credibility. *Journal of Teaching Persian to Speakers of Other Languages*, *10*(21), 3–26. https://doi.org/10.30479/JTP-SOL.2021.14654. 15 06

Derakhshan, A. (2022a). Revisiting research on positive psychology in second and foreign language education: Trends and directions. *Language Related Research*, *13*(5), 1–43. https://doi.org/10.52547/LRR.13.5.1

Derakhshan, A. (2022b). *The "5Cs" positive teacher interpersonal behaviors: Implications for learner empowerment and learning in an L2 context*. Switzerland, Cham: Springer. https://link.springer.com/book/97 830311652 76

Derakhshan, A., & Fathi, J. (2023). Grit and foreign language enjoyment as predictors of EFL learners' online engagement: The mediating role of online learning self-efficacy. *The Asia-Pacific Education Researcher*. https://doi.org/10.1007/s40299-023-00745-x.

Derakhshan, A., Wang, Y.L, Wang, Y.X, & Ortega-Martín, J. L. (2023). Towards innovative research approaches to investigating the role of emotional variables in promoting language teachers' and learners' mental health. *International Journal of Mental Health Promotion*, *25*(7), 823–832. https://doi.org/10.32604/ijmhp.2023.029877.

Derakhshan, A., Zhang, L. J., & Zhaleh, K. (2023). The effects of instructor clarity and non-verbal immediacy on Chinese and Iranian EFL students' affective learning: The mediating role of instructor understanding. *Studies in Second Language Learning and Teaching*, *13*(1), 71–100. https://doi.org/10.14746 /sllt.31733.

Dewaele, J. M., Chen, X., Padilla, A. M., & Lake, J. (2019). The flowering of positive psychology in foreign language teaching and acquisition research. *Frontiers in Psychology, 10*(3), 21–28. https://doi.org/10.3389/fpsyg. 2019. 02128.

Dörnyei, Z. (2019). Towards a better understanding of the L2 learning experience, the Cinderella of the L2 motivational self-system. *Studies in Second Language Learning and Teaching, 9*(1), 19-30. doi:10.14746/sllt.2019.9.1.2.

Enskat, A., Hunt, S. K., & Hooker, J. F. (2017). A Generational examination of instructional Facebook use and the effects on perceived instructor immediacy, credibility and student affective learning. *Technology, Pedagogy, and Education, 26*(5), 545–557. https://doi.org/10.1080/1475939X. 2017.1354065.

Fathi, J., Derakhshan, A., & Saharkhiz Arabani, A. (2020). Investigating a structural model of self-efficacy, collective efficacy, and psychological well-being among Iranian EFL teachers. *Iranian Journal of Applied Language Studies*, *12*(1), 123–150. https://doi.org/10.22111/IJALS.2020.5725.

Fathi, J., Greenier, V., & Derakhshan, A. (2021). Teacher self-efficacy, reflection, and burnout among Iranian EFL teachers: The mediating role of emotion regulation. *Iranian Journal of Language Teaching Research*, *9*(2), 13–37. https://doi.org/10.30466/IJLTR. 2021. 121043.

Finn, A. N., Schrodt, P., Witt, P. L., Elledge, N., Jernberg, K. A., & Larson, L. M. (2009). A meta-analytical review of teacher credibility and its associations with teacher be-haviors and student outcomes. Communication Education, 58(3), 516–537. https://doi.org/10.1080/03634520903131154.

Fisher, D., & Frey, N. (2019). Teacher credibility in literacy learning. *Journal of Adolescent & Adult Literacy. 63*(3), 356–359. https://doi.org/10.1002/j aal.1003.

Gershenson, S. (2016). Linking teacher quality, student attendance, and student achievement. *Education Finance and Policy, 11*(2), 125–149. https://doi.org/10.1162/EDFP_a_00180.

Gibbs, S., & Powell, B. (2012). Teacher efficacy and pupil behavior: The structure of teachers' individual and collective beliefs and their relationship with numbers of pupils excluded from school. *British Journal of Educational Psychology, 82*(4), 564–584. https://doi.org/10.1111/j.2044-8279.2011.02 046.x.

Granziera, H., & Perera, H. (2019). Relations among teachers' self-efficacy beliefs, engagement, and work satisfaction: A social cognitive view. *Contemporary Educational Psychology, 58*(1), 75–84. https://doi.org/10.1016/j.cedpsych. 2019.02.003.

Han, Y., & Wang, Y. (2021). Investigating the correlation among Chinese EFL teachers' self-ef-ficacy, reflection, and work engagement. *Frontiers in Psychology 12*(3). 1–10. https://doi.org/10.3389/fpsyg.2021.763234.

Karimi, M. N., & Ziaabadi, F. (2019). Teachers' motivation to teach, teacher credibility, metacog-nitive awareness, and students' motivation and affective learning: A structural equation modeling analysis. *Teaching English Language*, *13*(1), 147–176.

Kerssen-Griep, J., & Witt, P. L. (2012). Instructional feedback II: How do instructor immediacy cues and face work tactics interact to predict student motivation and fairness perceptions? *Communication Studies, 63*(3), 498–517. https://doi.org/10.1080/10510974.2011.632660.

Kilday, J. E., Lenser, M. L., & Miller, A. D. (2016). Considering students in teachers' self-efficacy: Examination of a scale for student-oriented teaching. *Teaching and Teacher Education, 56*(3), 61–71. https://doi.org/10.1016/j.tate.2016.01.025.

Kirkpatrick, R., Kirkpatrick, J., & Derakhshan, A. (2024). An investigation into the motivation and attitudes of Japanese students toward learning English: A case of elementary and junior high school students. *Asian Journal of Second and Foreign Language Education, 9*. https://doi.org/10.1186/s40862-023-00243-z

Lee, J. H. (2020). Relationships among students' perceptions of native and non-native EFL teachers' immediacy behaviours and credibility and students' willingness to communicate in class. *Oxford Review of Education, 46*(2), 153–168.https://doi.org/10.1080/03054985.2019.164218.

Lu, Q., & Mustafa, Z. (2021). Toward the impact of EFL teachers' self-efficacy and collective efficacy on students' engagement. *Frontiers in Psychology, 12*(3), 1–10. https://doi.org/10.3389/fpsyg.2021.744586.

McCroskey, J. C., & Teven, J. J. (2013). *Source credibility measures*. *Measurement Instrument Database for the Social Science.*

McCroskey, J. C., Valencic, K. M., & Richmond, V. P. (2004). Toward a general model of instructional communication. *Communication quarterly, 52*(3), 197–210. https://doi.org/10.1080/01463370409370192.

McDavid, L., Parker, L. C., Burgess, W., Robertshaw, B., & Doan, T. (2018). The combined effect of learning space and faculty self-efficacy to use student-centered practices on teaching experiences and student engagement. *Journal of Learning Spaces, 7*(1) ,29–44.

Mojavezi, A., & Tamiz, M. P. (2012). The impact of teacher self-efficacy on the student's motivation and achievement. *Theory & Practice in Language Studies, 2*(3),483–491. https://doi.org/10.4304/tpls.2.3.483-491.

Mottet, T. P., Frymier, A. B., & Beebe, S. A. (2006). Theorizing about instructional communication, in T. P. Mottet, V. P. Richmondand J. C. McCroskey *Handbook of instructional communication: Rhetorical and relational perspectives* (pp. 255–282). Boston.

Nayernia, A., Taghizadeh, M., & Farsani, M. A. (2020). EFL teachers' credibility, nonverbal immediacy, and perceived success: Astructural equation modelling approach. *Cogent Education*, *7*(1), 1–10. https://doi.org/10.1080/23311 86X.2020.1774099

Pan, Z., Wang Y., & Derakhshan A. (2023). Unpacking Chinese EFL students' academic engagement and psychological well-being: The roles of language teachers' affective scaffolding. *Journal of Psycholinguistic Research.* https://doi.org/10.1007/s10936-023-09974-z.

Pishghadam, R., & Karami, M. (2017). Probing language teachers' stroking and credibility in relation to their success in class. *Alberta Journal of Educational Research*, *63*(4), 378–395. https://doi.org/10.11575/ajer.v63i4.56431.

Pishghadam, R., Derakhshan, A., & Zhaleh, K. (2019). The interplay of teacher success, credibility, and stroke with respect to EFL students' willingness to attend classes. *Polish Psychological Bulletin, 50*(4), 284-292. https://doi.org/10.24425/ppb.2019.131001.

Pishghadam, R., Derakhshan, A., Jajarmi, H., Tabatabaee Farani, S., & Shayesteh, S. (2021). Examining the role of teachers' stroking behaviors in EFL learners' active/passive motivation and teacher success. *Frontiers in Psychology*, *12*, 1–17. https://doi.org/doi:10.3389/fpsyg.2021.707314

Pishghadam, R., Derakhshan, A., Zhaleh, K., & Al-Obaydi, L. H. (2023). Students' willingness to attend EFL classes with respect to teachers' credibility, stroke, and success: a cross-cultural study of Iranian and Iraqi students' perceptions. *Current Psychology*, *42*(5), 4065–4079.

Pishghadam, R., Seyednozadi, Z., & Zabetipour, M. (2017). Examining teacher credibility and language achievement in light of emotionalization and life syllabus. *International Journal of Pedagogies & Learning, 12*(2), 117–131.

Pogue, L. L., & AhYun, K. (2006). The effect of teacher nonverbal immediacy and credibility on student motivation and affective learning. *Communication Education, 55*(2), 331–344.

Rezvani, R., & Miri, P. (2021). The impact of gender, naiveness, and subject matter on the English as a second language university students' perception of instructor credibility and engagement: a qualitative study. *Frontiers in Psychology, 12*(3), 1–10. https://doi.org/10.3389/fpsyg.2021.702250.

Royle, J. A., Chandler, R. B., Sollmann, R., & Gardner, B. (2014). Chapter 3 - GLMs and Bayesian Analysis. In J. A. Royle, R. B. Chandler, R. Sollmann, & B. Gardner (Eds.), *Spatial Capture-recapture* (pp. 47-85). Academic Press. https://doi.org/10.1016/B978-0-12-405939-9.00003-7

Santilli, V., Miller, A. N., & Katt, J. (2011). A comparison of the relationship between instructor nonverbal immediacy and teacher credibility in Brazilian and U.S. classrooms. *Communication Research Reports, 28*(3), 266–274.https://doi.org/10.1080/08824096. 2011. 588583.

Schrodt, P., Witt, P. L., Turman, P. D., Myers, S., Barton, M. H., and Jernberg, K. A. (2009). Instructor credibility as a mediator of instructor's prosocial communication behaviors and students' learning outcomes. *Communication Education, 58*(2), 350–371. https://doi.org/10.1080/03634520902926851

Shahzad, K., & Naureen, S. (2017). Impact of teacher self-efficacy on secondary school students' academic achievement. *Journal of Education and Educational Development*, *4*(1), 48–72.

Singh, K. (2011). Study of achievement motivation in relation to academic achievement of students. *International Journal of Educational Planning & Administration, 1*(2), 161–171.

Teven, J. (2008). An examination of perceived credibility of the 2008 presidential candidates: Relationships with believability, likeability, and deceptiveness. *Human Communications, 11*(2), 383–400.

Teven, J. J., & Hanson, T. L. (2004). The impact of teacher immediacy and perceived caring on teacher competence and trustworthiness. *Communication Quarterly, 52*(2), 39–53.

Tschannen-Moran, M., & Johnson, D. (2011). Exploring literacy teachers' self-efficacy beliefs: Potential sources at play. *Teaching and Teacher Education, 27*(4), 751–761. https://doi.org/10.1016/j.tate.2010.12.005

Tschannen-Moran, M., & Woolfolk-Hoy, A.(2001). Teacher efficacy: Capturing an elusive construct. *Teacher and Teacher Education, 17(3)*, 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1.

Vallerand, R. J., Blais, M. R., Briere, N. M., & Pelletier, L. G. (1989). Construction and validation of the academic motivation scale. *Canadian Journal of Behavioral Science/, 21*(3), 323–349.

Wang, Y., & Derakhshan, A. (2023). Enhancing Chinese and Iranian EFL students' willingness to attend classes: The role of teacher confirmation and caring. *Porta Linguarum, 39*(1), 165–192. http://doi.org/10.30827/portalin.vi39.23625

Wang, Y., L., Derakhshan, A., & Zhang, L. J. (2021). Researching and practicing positive psychology in second/foreign language learning and teaching: The past, current status and future directions. *Frontiers in Psychology, 12,* 1-10. https://doi.org/10.3389/fpsyg. 2021. 731 721

Wheeless, V. E., Witt, P. L., Maresh, M., Bryand, M. C., & Schrodt, P. (2011). Instructor credibility as a mediator of instructor communication and students 'intent to persist in college. *Communication Education, 60*(3), 314–339 .https://doi.org/10.1080/03634523. 2011.555917.

Wijaya, R. K. (2017). Students' perception of teacher's nonverbal immediacy behavior toward students' attitude and motivation in learning English. ELT Worldwide: *Journal English Language Teaching 4*(2), 75–91. https://doi.org/10.26858/eltww.v4i1.3198.

Wossenie, G. (2014). EFL teachers' self-efficacy beliefs, pedagogical success and students' English achievement: A study on public preparatory schools in Bahir Dar Town, Ethiopia. *Science, Technology and Arts Research Journal, 3*(2), 221–228. https://doi.org/10. 4314/star.v3i2.29.

Xie, F., & Derakhshan, A. (2021). A conceptual review of positive teacher interpersonal communication behaviors in the instructional context. *Frontiers in Psychology,12*(2), 1–10. https://doi.org/10.3389/fpsyg. 2021.708490.

Xue, Y. (2022). The role of EFL teachers' self-efficacy and emotional resilience in appraisal of learners' success. *Frontiers in Psychology*, *12(2)*, 1–10. https://doi.org/10.3389/fpsyg.2021.817388

Zee, M., & Koomen, H.M. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational research, 86(*4), 981–1015.

Zhang, H., Dai, Y., & Wang, Y. (2020). Motivation and second foreign language proficiency: The mediating role of Foreign language enjoyment. *Sustainability*, *12*(4), 1302–1316. https://doi.org/10.3390/su12041302.

Zhang, Q. (2009). Perceived teacher credibility and student learning: Development of a multicultural model. Western Journal of Communication, 73(3), 326–347. https://doi.org/10.1080/10570310903082073.

Zheng, J. (2021). A functional review of research on clarity, immediacy, and credibility of teachers and their impacts on motivation and engagement of students. *Frontiers in Psychology*, *12*(2), 1–10. https://doi.org/10.3389/fpsyg.2021.712419.