



Exploring the Roles of Teachers' Creative Self-Efficacy and Growth Mindset in Predicting Teaching for Creativity: focus on EFL teachers

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Abstract

Since teachers' creative behavior or innovation-promoting inclination affects the quality of education, some recent studies have aimed to explore teachers' willingness to practice teaching for creativity (TfC) in various education contexts. As an attempt to identify the correlates of TfC, the aim of this research was to test a model of model of TfC in EFL contexts based on teachers' creative self-efficacy and their growth mindset. A number of 472 Iranian English as a Foreign Language (EFL) teachers partook in this survey as the participants. The electronic versions of the questionnaires for the three latent variables were administered to the participants. Structural equation modelling was utilized to test the suggested model of TfC in the EFL context. The results indicated that both teachers' creative self-efficacy and their growth mindset substantially influenced EFL teachers' TfC although the contribution of creative self-efficacy was greater than. Additionally, teachers' growth mindset had a slight effect on their creative self-efficacy. These findings can offer remarkable implications for EFL teacher educators.

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1. Introduction

Creativity plays a critical role in twenty-first century learning and teaching, (Henriksen et al., 2018), particularly in the English as Foreign Language (EFL) context (Cimermanova, 2015). Creativity can contribute to language learning through promoting learners' autonomy, and their ability to tolerate ambiguity (Coffey & Leung 2015). Given the considerable value of creativity, it is necessary to develop efficient methods by which creativity can be encouraged in learners. As Lindström (2006) indicated, creativity can be taught, therefore, teachers are able to educate learners to be creative in classrooms given the fundamental role of teachers in educational systems (Fathi & Naderi, 2022). Teachers play a significant role in fostering creative and critical thinking among learners, as numerous studies have explored the rudimentary knowledge and skills by which teachers can develop student creativity (e.g., Juraeva, 2020). Accordingly, the term teaching for creativity (TfC) has received much attention from researchers (e.g., Huang, 2021; Huang et al., 2022), as it is a major issue for schools worldwide (Rubenstein et al., 2013). As defined by National Advisory Committee for Creative and Cultural Education (NACCCE) (1999), TfC pertains to forms of teaching by which young learners' own creative thinking or behavior are developed. Given that student creativity is of high importance in educational settings (Gu et al., 2014), teachers, as the role models in classrooms, have substantial responsibility for promoting the creativity of their learners (Soh, 2017). However, despite the need for creativity in workplace (Helzer & Kim, 2019), and considering its importance in education (Collard & Looney, 2014), creativity has remained underappreciated in educational environments (Kaplan, 2019), and has not often been considered as an educational priority in schools (Cayirdag, 2017). Hence, as an attempt to fill that void, the current study aimed to advance the knowledge on teachers' willingness to foster creativity by shedding more light on teachers' TfC behaviors.

Regarding the influential factors of TfC, researchers have identified a number of factors which may contribute to teaching for creativity, namely teachers' creative self-efficacy (Huang et al., 2019). Bandura et al. (1999) noted that strong self-efficacy is an essential requirement for developing creativity. Although creative capability is required for creative performance, it is not enough (Choi et al., 2009). Just like other forms of behavior, creative performance can be shaped by self-judgments of an individual's capacity to create novel and practical outcomes (Beghetto, 2006). Accordingly, creative self-efficacy refers to "the belief one has the ability to produce creative outcomes" (Tierney & Farmer, 2002, p. 1138). In order to be creatively motivated in workplace one must experience a sense of confidence, simply put, one must possess a sense of self-efficacy toward one's competence for creative performance (Kelley & Kelley, 2013). Puente-Díaz (2016) concluded that the concept of creative self-efficacy can contribute to better understanding of creativity and innovation. While the literature on creativity of teachers (e.g., Chan & Yuen, 2014), and their self-efficacy (e.g., Dellinger et al., 2008; Fathi et al., 2021; Greenier et al., 2021; Xiao et al., 2022) have received much attention from researchers, the concept of teachers' creative self-efficacy has rather remained untouched by the scholars. Therefore, the present study sought to fill the existing research gap in the field by throwing light on creative self-efficacy of teachers in the EFL context.

Along with creative self-efficacy, growth mindset is another construct investigated in the current study. Mindsets are characterized as beliefs about the malleability of an individual's attributes (Dweck & Yeager, 2019). As demonstrated by Dweck (1999), mindsets are divided into two categories: a growth mindset and a fixed mindset. Growth mindsets, also referred to as implicit theories, are recognized as core assumptions about the malleability of one's intelligence or qualities (Derakhshan et al., 2022; Dweck, 1999, 2016; Dweck et al., 1995; Yeager & Dweck, 2020; Zhang et al., 2022). One with a growth mindset believes that one's qualities such as intellect, ability, and personality are malleable and can be developed or grown. On the other hand, one with a fixed mindset believes that one's basic intelligence and abilities are static and unalterable (Dweck, 2016). Teachers also hold their own mindsets towards their teaching qualities. Teachers with a growth mindset hold the beliefs that they possess further control over developing their teaching competencies, whereas teachers with a fixed mindset shy away from challenge, believing that their intelligence is a basic trait that can't be changed (Frondozo et al., 2020).

Notwithstanding the importance of teachers' creative behavior in education, there has been limited research on this critical construct (e.g., Huang, 2021). A review of the existing literature indicates that no research has ever explored the potential role of growth mindset of teachers in predicting their TfC. Furthermore, given that creative self-efficacy is an influential factor for TfC (Cayirdag, 2017), there is a scarcity of studies investigating the association between creative self-efficacy and teaching or creativity (e.g., Huang et al., 2019), also, owing to the paucity of sufficient research, this personal resource requires more supporting evidence. Therefore, as an attempt to bridge the existing gaps, we expanded on this line of research by exploring the role of creative self-efficacy and growth mindset as influential variables of TfC in an EFL context.

2. Literature review

2.1 Teaching for creativity (TfC)

Considering the important and beneficial role of creativity in education (Cho, Pemberton, & Ray, 2017), it is necessary to understand how creativity is encouraged and promoted. Creativity can be improved, learned, and taught (Haynes, 2020), and one can become more creative over time if encouraged (Beghetto & Karwowski, 2018). As Soh (2017) demonstrated, student's creativity is a paramount educational objective, and enhancing their creativity is an added responsibility of teachers. Therefore, teachers play a vital role in flourishing creativity in schools because of what they can contribute to the development of students' creativity (Davies et al., 2014; Soh, 2017). Accordingly, this led to the introduction of the term TfC as it blossomed in the 1980s (Sternberg, 2015). First, it is important to draw a distinction between teaching creatively and TfC. As concluded by Jeffry and Craft (2004), teaching creatively is inherent in teaching for creatively and the former frequently leads to the latter. Teaching creatively is recognized as utilizing imaginative approaches to make the learning process more interesting and fruitful, whereas TfC pertains to teaching approaches by which teachers develop learners' creative thinking or behavior (NACCCE, 1999). Furthermore, Fryer (1996) explains that TfC often emerges from contexts in which teachers are teaching creatively though some evidence of creative responses to constraining situations. NACCCE (1999) noted that TfC

urges teachers to provide a creative learning environment where students' creativity and critical thinking are fostered. TFC can make significant contributions to the development of students, including enhancing students' achievement (Al-Qahtani, 2016), empowerment, motivation and confidence (Baer, 2013), and autonomy (Papaleontiou-Louca et al., 2014). NACCCE (1999) identified three approaches to TFC: To encourage learners to build self-confidence in their own creativity, to identify learners' creative capacities, and to promote creativity by providing opportunities in which students' abilities and curiosity can be developed. Craft et al. (2007) demonstrated in their study that opportunities must be created by teachers so learners would be able to connect their new information and prior knowledge and integrate their imagination with real situations to perform creative activities. Teachers should not only have knowledge and skills about teaching their own subject area, but also skills in using creative tools to successfully teach for creativity (Tran et al., 2017). In his study, Soh (2017) introduced three principles of TFC in order to foster the creativity of students: Social modelling, reinforcement, and classroom ecology. The social modelling approach highlights the fact that creativity from the teacher himself is the key to fostering students' creativity. Teachers act as behavioral models in the classroom and when they behave creatively, learners are likely to learn to think and act creatively by imitating and/or emulating the behavior of their teachers. As Sternberg and Grigorenko (2007) indicated in their study, TFC requires teachers not merely to provide support and encouragement to creativity, but also to act as role models when interacting with students. To add to it, creative teachers can foster the creativity of their students through role-modelling (Papaleontiou-Louca et al., 2014), as students can actualize their creative potential and develop creativity not when they are told to, but when they are shown how. Reinforcement is the second approach that teachers can enhance TFC by fostering and encouraging student creativity. When creative behaviors are reinforced (rewarded) once, students are more likely to act creatively again (Soh, 2017). Brinkman (2010) noted in his study that if teachers make TFC a habitual activity, and encourage and reward it, students are more likely to be creative. Classroom ecology, as the third approach of fostering the creativity of student, requires teachers to construct a social environment in which creativity is flourished and encouraged (Soh, 2017). In a study carried out by Beghetto and Kaufman (2014), it was concluded that as long as nurturing creativity is concerned the learning environment is of paramount importance. The authors also maintained that teachers are the key to developing student creativity as they are required to provide the right environment for creativity, encourage it, and role-model it. It was also found that there are various challenges to integrating TFC into the classroom (Katz Buonincontro et al., 2021). In his study, Sternberg (2015) found three origins of problem to successfully incorporate teaching for creativity in classrooms: Standardized testing, teacher training, and entrenchment. Standardized tests measure creativity to a limited extent or not at all as these tests value scores only and creative thinking does not result in a good performance (Hong & Milgram, 2010). As Hennessey and Amabile (2010) indicated, it is extremely difficult to truly foster creativity in today's test-heavy climate. Teaching for creativity has not received attention from teacher training programs, therefore, fostering creative thinking has not been welcomed in the schools (Smith, 2020), particularly in the field of EFL (Akyıldız & Çelik, 2020). Entrenchment which refers to the situation in which people are used to doing things in a certain way, and they are not likely to change it, is recognized as the most powerful factor

impeding teaching for creativity (Sternberg, 2015). In a mixed method study, Al-Qahtani (2016) explored the attitudes of teachers and the extent to which they foster creativity in language classrooms. Administering a two-part questionnaire, the required data was gathered from 45 Saudi EFL teachers from public schools as well as six EFL supervisors. The results demonstrated that EFL teachers do not promote creativity due to a number of factors, namely the confusing nature of the concept of creativity, lack of support for creativity in textbook and school, and lack of teacher training programs regarding teaching for creativity. In another study conducted by Newtown and Beverton (2012), data were collected from a sample of pre-service teachers. It was revealed that teachers had a limited understanding of the term creativity and didn't have the ability to teach for creativity in classroom.

Given teachers' lack of clear and common conceptualization of creativity (Kampylis et al., 2009), as well as lack of support and attention in teacher education programs (Davies et al., 2004), there is a need for further research on the concept of creativity, particularly TFC in order to clarify these concepts for better incorporation in classrooms (Kaplan, 2019; Katz Buonincontro et al., 2021). Hence, the findings of the present study aimed to help teachers have better understanding of TFC by contributing to some ambiguity about the nature of this concept, also it is our purpose to encourage officials and policy makers to recognize the significance of TFC by providing evidence of the benefits that it can deliver in education. Furthermore, to expand on this line of research we examined of EFL teachers and its association with other factors, namely creative self-efficacy and growth mindset in the Iranian context.

2.2 Creative self-efficacy

Creative self-efficacy is characterized as one's believing in his/her ability to produce creative work (Tierney & Farmer, 2002, 2011). Empirical studies have indicated that creative self-efficacy can favorably influence creative performance (Huang, Chang, & Chou, 2020), particularly in learning and teaching (Du et al., 2020). Tierney and Farmer (2002) administered surveys to a sample of employees as the participants. The results revealed that creative self-efficacy can play a key role in enhancing creativity in the workplace, moreover, it was also found that self-efficacy perceptions may influence individuals' creativity. In a similar attempt, Lapènie and Bruneckienè (2010) concluded that creative self-efficacy has a significant predictive effect on perceived creativity at work. Taken together, the aforementioned findings note that creative self-efficacy can contribute to creative effort and performance at work (Tierney & Farmer, 2011). It is argued that there is a positive association between creative self-efficacy and teaching behaviors that promote creativity (Cayirdag, 2017; Huang, 2022; Ozkal, 2014; Rubenstein et al., 2013). As creativity can be fostered and inhibited in the classroom, it is of high importance to identify the factors which may influence a teacher's commitment to student creativity development (Rubenstein et al., 2013). In a study conducted by Liu et al. (2019), it was demonstrated that self-efficacy, along with curiosity, was associated with TFC of Taiwanese nurse faculty. Utilizing the convenience sampling method, Cayirdag (2017) carried out a study to explore the relation between two teacher-related factors (i.e., creative self-efficacy and teacher efficacy) and teachers' TFC. A sample of 322 Turkish teachers representing various subject areas, namely second language acquisition (SLA) took part in this study. The results of the study demonstrated that teachers' creative self-efficacy might have an influential role in affecting creative teaching performance due to their natural tendency to be

creative and act as a role model. In Estonia, Nemeržitski and Heinla (2020) conducted a mixed methods study on in-service teachers in order to investigate the potential link between teachers' creative self-efficacy and their TfC. Utilizing standardized mean scores, it was revealed that self-esteem and perceived societal value of creativity are related with the manifestation of creative self-efficacy in the classroom, which in turn leads to promoting creativity of students through TfC and creative teaching. Based on a survey of nearly 2000 teachers in China, Huang et al. (2019), carried out a study to probe the links between teachers' creative self-efficacy and their attitudes towards incorporating TfC. The results demonstrated that teachers' personal creative behavior along with creative self-efficacy could impact teachers' attitudes towards TfC and their willingness to foster students' creativity. It was also found that school expectations can act as a key factor for teachers' creative behaviors, as a creativity-friendly school climate has a direct effect on teachers' willingness to incorporate TfC in classroom (Huang et al., 2021). In a similar attempt, Huang (2022) studied the relations between creative role identity, creative self-efficacy, and TfC of teachers. Using surveys, the required data was collected from 1,043 primary and secondary teachers. To analyze the obtained data, multigroup structural equation modeling was used. It was revealed that teachers' creative role identity, consisted of their self-view of their own creativity and perceived expectations from school context, was significantly associated with TfC. In addition, it was found that teachers with increased creative self-efficacy perform more creativity-promoting behavior (Al-Dababneh et al., 2019).

In recent years, many have emphasized the significance of creativity and creative language use in the field of EFL (Huh & Lee, 2020). However, a review of the existing literature indicates that there is a scarcity of studies investigating TfC (e.g., Al-Qahtani, 2016; Kaplan, 2019), and creative self-efficacy (e.g., Lin & Wang, 2021) in the EFL context. Furthermore, till date, no other study has examined creative self-efficacy of teachers and its association with TfC in an EFL context. Hence, as an attempt to fill this existing research gap, we investigated the potential predictive role of creative self-efficacy of EFL teachers on their TfC.

2.3 Growth mindset

In her study, Dweck (1999) investigated why a number of students enjoyed a rather challenging learning process, whereas other students were not eager to take part in demanding activities. She developed the mindset theory which maintains that one holds mindsets ranging from fixed to growth. Fixed mindset pertains to the situation when individuals believe that intelligence is viewed as stable and unchangeable, while individuals with growth mindset believe that intelligence is improvable and malleable (Dweck, 2016; Dweck et al., 1995). Students with a fixed mindset perceive their failures as a reflection of their intelligence, and are simply discouraged to put efforts into their learning (Hochanadel & Finamore, 2015). On the other hand, learners holding a growth mindset focus on learning goals (i.e., becoming smart, and developing skills and abilities), value the importance of effort, and view failure as a learning opportunity, which eventually leads to their learning achievement (Yeager et al., 2019). Teachers also have mindsets about their own teaching capabilities (Fronozo et al., 2020), believing that teaching abilities are not static and can be improved (Nalipay et al., 2019). Teachers' mindsets can significantly contribute to supporting and improving students' learning process (DeLuca, Coombs, & LaPointe-McEwan, 2019) as well as to teachers' pedagogical

and instructional approaches (Zhang et al., 2020), as teachers with a growth mindset feel to possess more control over their teaching abilities (Frondozo et al., 2020). Teacher mindset is strongly related with student mindset, as teachers' growth mindset plays a vital role in developing students' growth mindset, as well as their academic learning (Zhang et al., 2017). Furthermore, empirical research indicates that teachers' mindsets towards the teaching capabilities play a significant role in influencing their classroom behaviors, their self-efficacy, and how they perceive their teaching performance (Kraker-Pauw et al., 2017). Gero (2013) explored the potential impact of teachers' mindsets on effectiveness of professional development. The results revealed that teachers holding a growth mindset are often engaged in effective professional development. In a study carried out by Katz Buonincontro et al. (2021), teachers' beliefs about creativity and their beliefs about TfC were explored. A survey was administered to a total of 376 preservice and practicing teachers to investigate their creative self-efficacy, their growth and fixed creative mindsets, their enthusiasm for teaching creativity, and their perception of creativity for student learning. Conducting exploratory factor analysis, the authors concluded that teachers' beliefs about TfC was strongly associated with all the examined factors. It was revealed that unlike fixed mindset, growth mindset might positively affect teachers' TfC. As Donohue et al. (2012) maintained, growth mindset is positively correlated with creativity. Likewise, Hass et al. (2016) explored fixed creative mindsets as well as growth creative mindsets, and their potential association with creative self-efficacy and creative identity of 620 students. It was found that there was no link between fixed mindsets of students and creative self-efficacy, while students' growth mindsets were positively associated with their creative self-efficacy.

A review of the exiting literature indicates that there are a limited number of studies investigating TfC and its related factors. For instance, the correlation between creative self-efficacy and TfC has been investigated by few researchers (e.g., Huang, 2022; Huang et al., 2019). Moreover, although Hass et al. (2016) examined student growth mindset and its link with their creative self-efficacy, to the best of our knowledge, no other study has investigated teacher growth mindset and its association with teacher creative self-efficacy. Hence, this study aimed to fill that void by shedding more light on both constructs and their potential relations. Furthermore, as TfC is an emerging field of study, specifically in the field of EFL, there appear to be adequate research that directly deals with exploring its related constructs, namely growth mindset and creative self-efficacy (e.g., Katz Buonincontro et al., 2021). What is missing, however, not only in the field of EFL, but also in any other field, is a comprehensive investigation of influential factors of TfC. Therefore, to fill the identified lacuna in the literature, the authors of the present study aimed to contribute to this line of research by focusing on the role of growth mindset and creative self-efficacy of EFL teachers as potential predictive variables of TfC.

3. Materials and methods

3.1. Participants

To achieve the purpose of this non-experimental research, A sample of 472 Iranian EFL teachers were invited to complete an online survey. These participants were engaged in teaching English in different provinces of Iran and were selected based on convenience

sampling. Among the selected sample, there were 194 male and 278 female teachers who reported to be involved in English teaching at schools, institutions, and universities. Their age range was between 20 and 39 years old ($M = 24.24$, $SD = 7.4$). Regarding teaching experience, their experience varied from 3 to 19 years ($M = 24.24$, $SD = 7.4$).

3.2. Instruments

3.2.1 Teaching for Creativity Scale (TCS)

We measured participants' tendency to measure TFC via the questionnaire used by the scale developed by Rubenstein et al. (2013). TCS consists of 43 statements which measure teachers' inclination to practice TFC in terms of four facets of *environmental encouragement*, *teacher self-efficacy*, *student potential*, and *societal value*. The items are evaluated on a 7-point Likert scale varying from 1 (strongly disagree) to 7 (strongly agree).

3.2.2. Growth Mindset Scale

In order to measure EFL instructors' growth mindset, we adapted six self-report items which were initially developed by Dweck's (2014) mindset scale. These items are assessed on a 6-point Likert scale varying from 1 'strongly disagree' to 6 'strongly agree'. A sample item of this questionnaire is "You can always substantially change how intelligent you are."

3.2.3. Creative self-efficacy in TFC

Teachers' self-efficacy in teaching for creativity was measured using the scale designed by Huang et al. (2019) who developed this scale after reviewing the related literature of teaching for creativity. This self-report scale measures two underlying components, measuring teachers' efficacy perceptions in terms of process and product regarding their inclination in teaching for creativity. A sample statement of this scale is: 'I can connect learning content with student daily life'. The statements were assessed on a five-point scale ranging 1 (strongly disagree) to 5 (strongly agree)

3.3. Procedure

We began the data collection in Winter 2021 by distributing an electronic questionnaire containing the three scales of growth mindset, TFC, and creative self-efficacy. Using Google Docs application, the researchers had put together all the items of the scale and created an online link for the questionnaires. Then the link of the survey was shared in online space, mostly WhatsApp and Telegram channels whose members were English teachers from various provinces of Iran. Some other colleagues also cooperated with the present researchers in sending the links of the online survey to the EFL teachers who were willing to take part in the study. As an introductory explanation, the teachers were informed that their participation is voluntary and their collected data will remain confidential. The data collection process took about five weeks.

4. Data analysis and results

We used SPSS and AMOS programs for analyzing the collected data. Before model testing, we used confirmatory factor analysis (CFA) to substantiate the construct validity of the used scales. As such, we first tested the measurement models. After confirming the measurement model, we also used the Structural Equation Modelling (SEM) to explore the interconnections between the latent variables. It is worth noting that an initial data screening was conducted to

detect the missing data, outliers, and non-normal values. The missing data were dealt with using an expectation–maximization algorithm (Kline, 2011). Standard scores and Mahalanobis D2 were employed to identify univariate and multivariate outliers, respectively. The results of this initial screening indicated that 466 cases could be considered valid for the subsequent data analysis.

Some fit indices were used for model evaluations in both measurement model (i.e., running CFAs) and structural model testing. These indices were Chi-square divided by degree of freedom (χ^2/df), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). Following Kline (2011), we regarded a model to be fit when $\chi^2/df < 3$, CFI and TLI $> .90$, and RMSEA $< .08$.

The results of CFA analyses indicated that the measurement models demonstrated the adequacy of the models to the data. Table 1 displays the fit indices for the measurement models of the three latent variables. Additionally, internal consistency coefficients were computed and the obtained values indicated that the questionnaires enjoyed acceptable reliability indices (see Table 1). Afterwards, means as well as standard deviations and the correlation coefficients of the constructs were calculated (As seen in Table 2).

Finally, using the Amos program and employing the maximum likelihood procedure and variance-covariance matrices as the input, we tested the hypothesized interconnections among the constructs. The results indicated the significance of all the path coefficients. The obtained fit indices were also acceptable according to the set criteria (Kline, 2011). That is, SEM results approved all the relationships in the structural model (As seen Figure 1).

Table 1. Measurement Model of the Latent Constructs

	χ^2	df	χ^2/df	CFI	TLI	RMSEA	α
Creative SE	87.54	47	1.86	.98	.97	.04	.89
Growth Mindset	32.86	17	1.93	.94	.93	.05	.81
TfC	106.82	56	1.90	.93	.92	.06	.93

Note. Creative SE = Creative Self-efficacy

Table 2. Descriptive Statistics and Correlations

	M (SD)	1	2	3
(1) Creative SE	4.12 (.99)	1.00		
(2) Growth Mindset	3.38 (.91)	.22*	1.00	
(3) TfC	4.34 (1.13)	.56**	.42**	1.00

Note. Creative SE = Creative Self-efficacy. * $p < .05$. ** $p < .01$.

As depicted in Figure 1, , teachers' creative self-efficacy was the stronger predictor of TfC ($\beta = .44$, $R^2 = .19$). Also, it was found that teacher growth mindset could also predict TfC significantly ($\beta = .33$, $R^2 = .10$). Additionally, growth mindset of EFL teachers had a slight effect on their creative self-efficacy ($\beta = .26$, $R^2 = .06$).

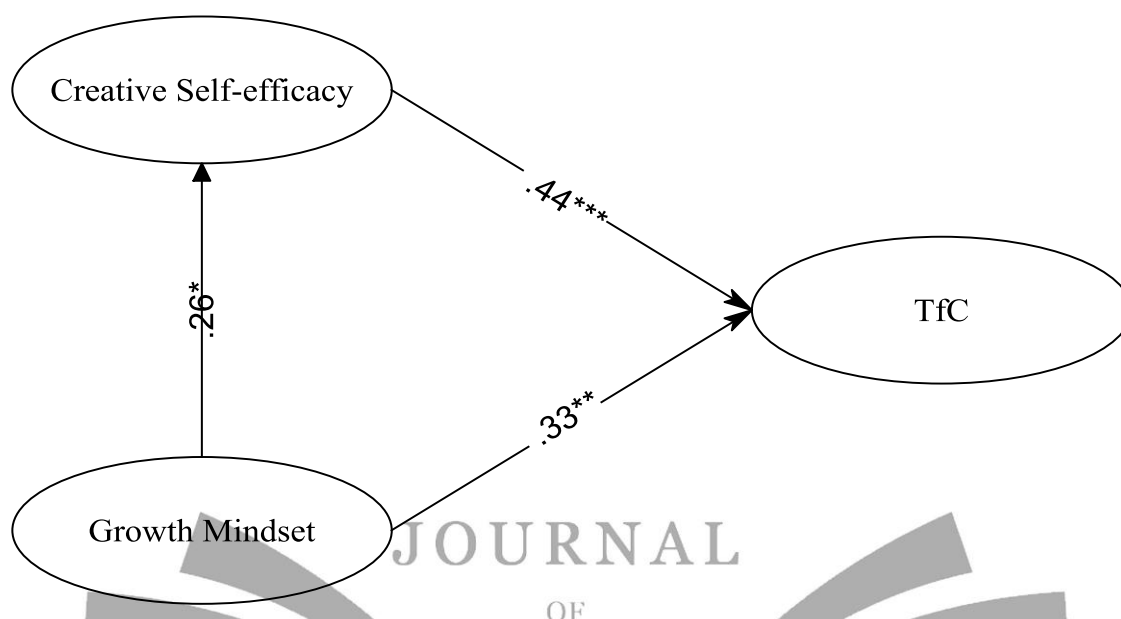


Figure 1. The Model of Teachers' Creative Self-efficacy, Growth Mindset, and Tfc. * $p < .05$. ** $p < .01$. *** $p < .001$.

5. Discussion

The purpose of this study was to assess a structural model of growth mindset, creative self-efficacy, and Tfc among EFL teachers. More precisely, the association between two teacher-related constructs, namely teacher growth mindset as well as teacher creative self-efficacy and their potential influential role in affecting Tfc was examined. Given the proposed structural model and the developed hypotheses for the objectives of the current study, the yielded findings contribute important implications to the related field.

First, it was found that teacher creative self-efficacy was a significant predictor of Tfc. This finding resonates with the results of a significant body of literature strengthening the idea that creative self-efficacy of teachers can positively impact their creative instructional behavior (Cayirdag, 2017; Huang et al., 2019; Huang, 2022; Nemeržitski & Heinla, 2020). This finding echoes with what Tierney and Farmer (2011) found in their study indicating that increases in creative self-efficacy is correlated with increases in creative performance. Al-Dababneh et al. (2019) demonstrated that teachers with increased creative self-efficacy perform more creativity-promoting behavior, as teachers' self-confidence plays a vital role in developing their perceptions and performance of Tfc (Horng et al., 2005). This result also supports the empirical research of Cayirdag (2017) related to the link between creative self-efficacy and Tfc, which revealed that teachers' creative self-efficacy might impact creative teaching performance due to their natural tendency to be creative, and act as a creative role model (Nemeržitski & Heinla, 2020). Following Tierney and Farmer's (2002) development of the concept of creative self-efficacy, we argue that EFL teachers' perception and confidence of their creative abilities impacts the extent to which they implement Tfc in classroom (Ozkal, 2014). Simply put, teachers who perceived themselves as more capable to produce creative work experienced further self-esteem and societal value (Nemeržitski & Heinla, 2020), and were equipped with sufficient psychological resources for incorporating innovative and

creative practices (Liao et al., 2010). This finding also aligns with that of Nemeržitski and Heinla (2020) who demonstrated that creative self-efficacy was notably inter-related with teachers' TFC. Moreover, if school administrations express their support for teachers' self-esteem and their creative behaviors, it could result in their greater levels of creative self-efficacy, which in turn leads to increased teachers' innovative behavior (Nemeržitski & Heinla, 2020). This result can be justified in the light of the study of Huang et al. (2019) and Huang (2022) which pointed out that creative self-efficacy might affect teachers' attitudes towards TFC and their willingness to promote the creativity of students. Furthermore, given the close relationship and high consistency between self-efficacy and creative self-efficacy (Tierney & Farmer 2011), this finding is in accordance with previous research of Liu et al. (2019) which have evidenced the link between faculty's self-efficacy and their TFC, which highlights the positive association between creative self-efficacy and teaching behaviors that promote creativity (Rubenstein et al., 2013). Granted that Saebo et al. (2007) concluded in their study, TFC is not feasible without creative teaching, we claim that teachers should be both confident and competent in their own creativity in order to teach for creativity, as the more teachers understand about creativity and creative learning, the more they can contribute to promoting their students' creativity (Papaleontiou-Louca et al., 2014).

According to Rubenstein et al. (2013), teachers' growth and fixed mindsets have been an emerging research interest in the area of fostering creativity. Second, SEM results demonstrated that EFL teachers' growth mindsets had an influential role in predicting TFC. The finding is in congruence with the study of Katz-Buonincontro et al. (2021) who indicated that teachers' beliefs about TFC was significantly related with their growth creative mindsets, corroborating the fact that unlike fixed mindset, growth mindset of teachers could result in their willingness to incorporate teaching for creativity in classroom. As Karwowski (2014) maintained, creative growth mindset pertains to the extent to which teachers hold the belief that creativity is malleable and improvable over time. Moreover, this result can be partially in accordance with what Katz-Buonincontro et al. (2020), and Bereczki and Kárpáti (2018) found in their study pointing out that a teacher with a growth creative mindset believes that creativity can be developed with effort and endurance, which strengthened the idea that teachers' attitudes towards incorporating creativity are rather associated with a growth creative mindset. The finding of this research also agrees with Paek and Sumners' (2019) study who maintained that it is likely that teachers' growth creative mindsets positively affect teachers' performance or fostering creativity in classroom while teachers' fixed mindsets have a negative impact on their TFC. It is argued that teachers holding a fixed mindset are reluctant to promote creativity of their students, as a fixed mindset hinders teachers from being confident to teach creativity (Paek & Sumners, 2019). However, a teacher with a growth creative mindset can identify even small amounts of creativity potential in learners (Karwowski et al., 2019), which in turn leads to teaching for creativity (Katz-Buonincontro et al., 2021). Moreover, this result is partially discrepant with those of Pretz and Nelson (2017) who found that the belief that creativity can be developed (growth mindset) was positively correlated with high creative performance and behavior.

Finally, SEM results revealed that creative self-efficacy of teachers was positively associated with their growth mindset. It was found that there was no link between fixed

mindsets of teachers and their creative self-efficacy, while teachers' growth mindsets were positively associated with their creative self-efficacy. Granted that the concept of growth mindset can be as equally applicable to teachers as it can be to students (Heggart, 2015), this finding supports the empirical research of Hass et al. (2016) related to the relationships between creative self-efficacy, students' growth mindset. The authors demonstrated that there was no association between fixed mindsets of students and creative self-efficacy, whereas students' growth mindsets were positively related with creative self-efficacy.

6. Conclusions and implications

To expand the scope of research on psychological factors of EFL teachers, the present study aimed to test a structural model of teacher growth mindset, creative self-efficacy, and TFC. The findings of the data analysis verified the fitness of the questionnaires and the structural model suggested in this research. With regard to practical implications of this research, the results might provide some implications for EFL practitioners and teacher educators. Despite the significance of creativity and creative language use in the area of language learning (Bell, 2012), particularly in EFL context (Chen, 2018; Liao et al., 2018), fostering creativity and teaching for creativity has been a challenging issue for instructors and policymakers worldwide (Huang, 2021). In addition, given that schools have a significant impact on teachers' creative self-efficacy (Huang, 2022), and their TFC (Al-Qahtani 2016; Huang et al., 2019), it has not been actually applied in schools (Katz-Buonincontro, 2012). Hence, the findings of the current study can encourage teacher education curriculum and EFL policy makers to support teachers in learning about the concept of creativity and in developing awareness about their creative potentials in order to incorporate creativity in classroom. Furthermore, this findings of this research feature growth mindset and creative self-efficacy as pivotal teacher-related variables to look for when creative teaching and TFC are the main educational objectives.

Despite the important results, this study has a number of limitations that should be mentioned. The results were derived just from the quantitative self-report measures which might not reflect the actual level of the constructs under investigation. Employing qualitative or mixed-methods designs, next researchers might be able to shed more light on the associations among these constructs (i.e., creative self-efficacy, growth mindset, and TFC). Due to the dynamic nature of these variables, future researchers are more likely to provide a more in-depth insight into the change in the relations among the variables if they use more longitudinal research methods. Finally, the generalizability of the findings can be enhanced if further data are obtained from bigger samples of the participants in other EFL contexts.

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