

Reflective practice, self-efficacy and research practice of EFL teachers: Examining possible relationships

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This study examined the relationships among English as a foreign language (EFL) teachers' reflective practices, self-efficacy, and research practice. Data were collected from a survey of 150 EFL teachers engaging both with (i.e. through reading) and in (i.e. through doing) research in English language teaching (ELT). The results of multiple correlation analyses indicated significant and positive associations among reflective practice, self-efficacy, and research practice. These analyses also indicated that all subscales of reflective practice significantly and positively correlated with research practice and self-efficacy. In addition, all subscales of self-efficacy significantly and positively correlated with research practice and reflective practice. The results from multiple regression analyses indicated that reflective practice and self-efficacy strongly predicted the participants' research practice, with the former being a stronger predictor. Multiple regression findings further showed that among the subscales of reflective practice, cognitive and critical reflections strongly predicted research practice, and practical and cognitive reflections strongly predicted self-efficacy. Additionally, among the subscales of self-efficacy, efficacy for instructional strategies and efficacy for classroom management strongly predicted research practice and efficacy for instructional strategies, and efficacy for student engagement strongly predicted reflective practice. Moreover, results from one-way analysis of variance (ANOVA) indicated that among EFL teachers who were actively, moderately, and rarely engaged in research, EFL teachers who were actively engaged in research did more reflective practice and were more self-efficacious.

Introduction

An increasing amount of research has emphasised the special need for teachers to be involved in research activities (Borg, 2007, 2009; Brown & Flood, 2018), engage in reflective practice (Burhan-Horasanlı & Ortaçtepe, 2016; Mann, 2005), and become more self-efficacious (van Dinther, Dochy & Segers, 2015; Woolfolk Hoy & Burke-Spero, 2005) in their professional teaching practice. Teachers engaging in reading and doing research are thought to make pedagogical decisions that have a more positive impact on their teaching performance and students' learning (Rahimi & Weisi, 2018; Walker, 2017). Teacher engagement in reflective practice leads to positive outcomes in teaching and learning (Burhan-Horasanlı & Ortaçtepe, 2016; Kramer, 2018), and teacher self-efficacy positively influences teachers' instructional practices and students' achievement (Depaepe & König, 2018; Malmberg, Hagger & Webster, 2014). Reviewing the literature indicates that research practice, reflective practice and self-efficacy are important factors in teachers' professional development (e.g. Edwards & Burns, 2016; Kirkwood & Christie, 2006), although insufficient attention has been accorded to English language teaching (ELT) contexts. In particular, the aforementioned variables have not been brought together to examine possible relationships between them. Inspired by this lacuna, the present study examines possible relationships between English as a foreign language

(EFL) teachers' reflective practice, self-efficacy, and research practice. It further explores the power of reflective practice and self-efficacy in predicting EFL teachers' research practice and activities. Moreover, the associations of the subscales underlying reflective practice and self-efficacy with research practice are explored. Based on the findings, practical implications are suggested for English language teaching and teacher education.

Literature review

Research practice

Teacher research practice is defined as systematic qualitative and/or quantitative inquiry, carried out individually or collaboratively by teachers in their own educational context, to develop the quality of teaching and learning in general and enhance their professional development in particular (Borg, 2010). It is suggested that teachers be encouraged to take a much more *innovatory*, rather than *implementary*, role in their professional teaching practice by engaging both with (i.e. through reading) and in (i.e. through doing) research (Smith, 2014). Kirkwood and Christie (2006) argued that teachers' own research practice enhances their independent professional development and brings about innovation in the curriculum.

Although English language teachers may be actively resistant to implementing the research-based recommendations of academics, in some contexts academics as stakeholders in research in applied linguistics in higher education occupy positions of power to develop research agendas for English language teachers, and regard this hierarchical trend as an issue of inequality of power and status in conducting research (Allison & Carey, 2007). Moreover, as Rose (2002) argued, "there is a widening gulf between researchers and classroom practitioners, and research often fails to focus on the real life experiences of most teachers" (p. 44). On the other hand, due to some setbacks for teachers' research engagement in the educational context, the knowledge base keeps growing without the awareness of most of the educational practitioners (Gall, Gall & Borg, 2007).

Dikilitaş (2014) argued that despite various constraints there has been substantial sustainability developed in teachers' research practice. Çelik and Dikilitaş (2015), Dikilitaş (2015) and Smith (2014) proposed that there has been a considerable support focusing on developing positive attitudes and perceptions towards action research and research skills in order for teachers to develop an awareness of their students' learning. In much the same vein, Edwards and Burns (2016) found that an action research program had a positive impact on teachers in an ELT context, and that this impact remained for a long time. They indicated that after the program the teachers were more confident, had an excellent rapport with their students, became more research engaged, and were recognised more by other colleagues and managers. Cabaroğlu (2014) and Henson (2001) also found that being involved in action research positively developed teachers' self-efficacy beliefs. Furthermore, Allwright and Hanks (2009) and Rahimi and Weisi (2018) suggested that teachers who engage in research think critically and reflectively about their classroom issues.

Reflective practice

Reflection is defined as an action based on “the active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it” (Dewey, 1933, p. 9). Based on this definition, Schon (1983) considered a reflective teacher as one who critically scrutinises his/her practices to find effective ways to improve his/her performance in order to develop students’ learning. Farrell (2012) argued that reflective practice helps teachers to think reflectively about their actions in the classroom and discover the drawbacks and shortcomings, in order to improve their performance in the future.

Conway (2001) distinguished between retrospective and prospective types of reflection and argued that both types should be practised by teachers. In retrospective reflection, teachers reflect on their past actions and experiences of the classroom events, and in prospective reflection, teachers mentally produce and compare possibilities for future actions (Birmingham, 2004). Schon (1983) maintained that teachers get engaged in reflection-in-action and reflection-on-action to improve their performance in teaching. In reflection-in-action teachers reflect on their practices while teaching in the classroom. In reflection-on-action, teachers reflect on their practices after the class time. An issue in teacher’s teaching practice can involve him/her in reflection-in-action and/or reflection-on-action. The teacher is trying to deal with the teaching/learning issue as he/she reflects on the understandings which have been implicit in his/her action, and understandings that they surface, criticise, restructure, and embody in further actions (Schon, 1983). In addition, reflection-for-action (Farrell, 2016a), in which teachers reflect before they teach a lesson, can develop teachers’ professional performance. Burhan-Horasanlı and Ortaçtepe (2016) and Mann (2005) argued that teachers’ simultaneous engagement in these three reflection types (i.e. reflection in, on, and for action) leads to positive outcomes.

Reflective practice, which is regarded as an essential goal for teacher education programs (Abou Baker El-Dib, 2007; Kramer, 2018), could be developed through practicum sessions (Pence & Macgillivray, 2008), student evaluation of teaching (Tran, 2015), teacher reflection group (Farrell, 2016b), reflective journals (Moon, 2006), portfolios (Jones, 2010), and action research (Farrell, 2008).

Self-efficacy

Self-efficacy in the educational context is defined as “the teacher’s belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context” (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998, p. 22). Bandura (1997) argued that teacher self-efficacy is developed from four major sources of mastery experience (i.e. teachers’ positive perception towards their performance develops their perceived self-efficacy), vicarious experience (i.e. observing other similar teachers’ successful performance provides teachers with ideas about successful teaching), verbal persuasion (i.e. positive persuasion received from others fosters teachers’ beliefs in their capabilities), and physiological and emotional arousal (i.e.

affective states like anxiety and excitement affect teacher efficacy perception). Bandura claimed that among these four sources of self-efficacy, mastery experience has the most powerful impact on self-efficacy, which in the educational context is related to the teachers' experiences of their students' success (boosts teachers' self-efficacy) or failure (lowers teachers' self-efficacy).

The findings of a number of studies on teacher efficacy indicate that teacher self-efficacy predicts students' achievement (Malmberg et al., 2014), improves teachers' English proficiency level (Choi & Lee, 2016), and helps teachers apply effective and creative teaching methods (Thurlings, Evers & Vermeulen, 2015). Rimm-Kaufman and Sawyer (2004), for instance, indicated that self-efficacious teachers introduce new teaching approaches and are stricter with regard to classroom management. Similarly, Holzberger, Philipp and Kunter (2014) indicated that students are more engaged in their learning in classes of more self-efficacious teachers.

Moreover, self-efficacious teachers are more enthusiastic in their teaching (Woolfolk Hoy & Burke-Spero, 2005), they are more willing to experiment and adopt teaching innovations to meet the students' needs (Thurlings et al., 2015), and they are able to positively improve teacher education and education reform (Tschannen-Moran & Woolfolk Hoy, 2001). However, due to the lower levels of self-efficacy, some novice teachers leave their teaching profession in the early years (Jensen, Sandoval-Hernandez, Knoll & Gonzalez, 2012). Pfitzner-Eden (2016), on the other hand, argued that developing teacher self-efficacy during teacher-training courses decreases their intention to quit. Van Dinther et al. (2015) and Woolfolk Hoy and Burke-Spero (2005) proposed that during teacher preparation and at the beginning of the teaching profession teacher self-efficacy is due to change. In much the same vein, Cabaroglu (2014) and Wyatt and Dikilitaş (2015) indicated that action research, as a reflective teaching approach, significantly improves EFL student teachers' self-efficacy beliefs.

Purpose of the study

Given the contribution of research practice to different dimensions of teachers' practices, understanding how teachers' research practice might develop due to their reflective practice and self-efficacy (e.g. Abou Baker El-Dib, 2007; Wyatt & Dikilitaş, 2015) can shed light on the role of research practice in improving teachers' performance. Although some studies have provided insight into the interplay among these three seemingly distinct variables, as outlined above, no study has been done so far in the EFL context to explore the in-depth connections among teachers' reflective practices, self-efficacy, and research practices. To explore this topic in more detail, the following research questions are formulated:

1. Is there any significant relationship among EFL teachers' reflective practice, self-efficacy, and research practice? If so, do EFL teachers' reflective practice and self-efficacy strongly predict their research practice?

2. Is there any significant relationship among the subscales of reflective practice and EFL teachers' research practice and self-efficacy? If so, do the subscales of reflective practice strongly predict EFL teachers' research practice and self-efficacy?
3. Is there any significant relationship among the subscales of self-efficacy and EFL teachers' research practice and reflective practice? If so, do the subscales of self-efficacy strongly predict EFL teachers' research practice and reflective practice?
4. Is there any significant difference among EFL teachers who are actively, moderately, and rarely engaged in research and their reflective practice and self-efficacy?

Method

Participants and context

This study was carried out during the academic year of 2017. One hundred and fifty EFL teachers (both male and female) teaching general English courses to adults at about 20 language institutes from different countries around the world participated in the study online. Before teaching at the language institutes, the participants had attended BA and/or MA courses in applied linguistics at different universities. Based on the curriculum plans of the universities, applied linguistic programs in EFL contexts covering EFL teaching courses, such as teaching methodologies, teaching language skills, practicum, and language testing, which all aim to prepare and certify the candidates as future EFL teachers.

In the present study, caution was exercised to involve only those EFL teachers who were engaged both with and in research in ELT. To this aim, the EFL teachers were first asked about their research engagement, in order to ascertain that they were engaged in reading and doing research in ELT. The participants were in the age range of 26 to 37 and with teaching experience ranging from 2 to 20 years. The participants taught different proficiency levels, i.e. elementary, intermediate, and advanced, as was determined by the standards of the language institutes. In addition to EFL courses at the university, all the participants had the experience of attending teacher training courses for 3-6 sessions, as the requirements of the language institutes, before starting their English language teaching.

The present study was carried out by the first author (i.e. the researcher) who has taught EFL courses for many years in different universities and language institutes and has conducted research studies in ELT contexts.

Instruments

The English language teaching reflection inventory (see Appendix A) designed by Akbari, Behzadpoor and Dadvand (2010) was used to assess the teachers' reflective practices. The inventory includes 29 items on a five-point Likert scale and assesses teachers' reflective practices in five subscales. The first subscale, practical reflection (six items), is exercised when teachers reflect on their teaching practice by keeping journals and talking to colleagues. The second subscale, cognitive reflection (six items), deals with teachers' conscious efforts to engage in professional development by attending conferences and

reading professional books and journals. The third subscale, affective reflection (three items), refers to teachers' attempts to understand learners' knowledge and their affective/cognitive states. The fourth subscale, metacognitive reflection (seven items), comprises teachers' knowledge of their personality, their understanding of learning and teaching, and their perception towards their teaching performance. Finally, the last subscale, critical reflection (seven items), refers to teachers' knowledge of socio-political dimensions of teaching.

The teachers' self-efficacy scale (see Appendix B) developed by Tschannen-Moran and Woolfolk Hoy (2001) was used to assess the teachers' self-efficacy. The questionnaire includes 24 items on a five-point Likert scale assessing three areas of efficacy: efficacy for instructional strategies (eight items), efficacy for classroom management (eight items) and efficacy for student engagement (eight items).

The English language teacher research practice questionnaire (ELT research practice questionnaire, Appendix C) adapted from Borg (2009) was used to investigate the teachers' research practice. The questionnaire includes 20 items on a five-point Likert-scale, dealing with EFL teachers' engagement both with and in research, their ability in doing appropriate research in ELT context, and the impact of such research activities on their professional teaching practices and students' learning.

To ensure the validity of the English language teaching reflection inventory, teachers' self-efficacy scale, and ELT research practice questionnaire, each was pilot tested with 150 EFL teachers. The results indicated that the instruments enjoyed a Kaiser-Meyer-Olkin (KMO) index of 0.81, 0.77 and 0.82 respectively, which were adequate. Bartlett's test of sphericity was significant $p = .00$ for all the instruments, indicating significant and positive correlation among the items in each instrument. Moreover, using Cronbach's alpha consistency index, the instruments enjoyed reliability indexes of 0.89, 0.85 and 0.87 respectively. As no change was made to the instruments after factor analysis and piloting due to the acceptable results of the validity and reliability, the responses used to determine the validity and reliability of the instruments were used also to address the research questions.

Procedures

The researcher sent the English language teaching reflection inventory, teachers' self-efficacy scale and ELT research practice questionnaire online to all the participants (i.e. EFL teachers engaged with and in research in ELT). A question was asked at the outset to assess whether they were engaged in reading and doing research in ELT. The researcher designed the instruments and a teacher demographic form in *Google Forms* and circulated them online using social networking websites such as *ResearchGate* and *LinkedIn*, online applications such as *WhatsApp* and *Telegram*, and email. The participants' email address was required in order to ensure that the responses were not replicated by the same participants.

The questions and the procedures for filling out the instruments were clarified for the participants in the instruction section. Each participant filled out the teacher demographic form and completed the three instruments with a total of 73 items. Before embarking upon the study, the participants' consent was sought and they were informed that the data would remain completely confidential and would be used just for the research purposes. Out of 250 participants 200 participants filled out the instruments, from which 150 were selected for data analyses. Fifty were omitted due to incomplete or careless completion, not being engaged with and in research in ELT, and that they were at very different age ranges and lengths of experience. To examine the normality of the collected data, a Kolmogorov-Smirnov test was run, the results of which indicated that the data were normal.

Data analysis

To analyse the data, a multiple correlation was run to examine the relationship among the participants' reflective practice, self-efficacy, and research practice. In addition, the relationship among the subscales of reflective practice and research practice and self-efficacy on the one hand, and the relationship among the subscales of self-efficacy and research practice and reflective practice on the other hand were investigated through multiple correlation analyses.

A multiple regression analysis was run to find a stronger predictor of the participants' research practice between reflective practice and self-efficacy. Additionally, multiple regression analyses were used to find a stronger predictor of the participants' research practice and self-efficacy among the subscales of reflective practice on the one hand and to find a stronger predictor of the participants' research practice and reflective practice among the subscales of self-efficacy on the other hand.

A one-way analysis of variance (ANOVA) was used to examine the differences among EFL teachers who were actively, moderately, and rarely engaged in research, and their reflective practice and self-efficacy.

Results

Relationship among reflective practice, self-efficacy, and research practice

First, descriptive statistics of the EFL teachers' responses to the three instruments were run, the results of which are shown in Appendix D. Afterwards, a multiple correlation analysis was applied to examine the relationship among EFL teachers' reflective practice, self-efficacy, and research practice (see Table 1).

As the results in Table 1 show, EFL teachers' reflective practice, self-efficacy, and research practice were significantly and positively correlated. The greatest correlation was found between reflective practice and self-efficacy ($r = .618$, $p < .00$), followed by reflective practice and research practice ($r = .591$, $p < .00$) and self-efficacy and research practice ($r = .544$, $p < .00$).

Table 1: Multiple correlations among reflective practice, self-efficacy, and research practice

	Research practice	Reflective practice	Self-efficacy
Reflective practice	.591*	–	.618*
Self-efficacy	.544*	.618*	–

* Two tailed, significant at 0.01.

Power of reflective practice and self-efficacy in predicting research practice

The first research question also investigated the power of reflective practice and self-efficacy in predicting EFL teachers' research practice. To this aim, multiple regression analyses were run (see Tables 2 and 3). Table 2 indicates the multiple correlation coefficient and the adjusted and unadjusted correlation of reflective practice and self-efficacy as the predictors of research practice.

Table 2: Model summary, investigating the adjusted and unadjusted R of reflective practice and self-efficacy as the predictors of research practice

R	R ²	Adjusted R ²	Std. error of the estimate
.633*	.400	.392	.381

* Predictors: (Constant), reflective practice and self-efficacy.

As the results in Table 2 show, the multiple correlation coefficient (R), using reflective practice and self-efficacy as predictors simultaneously, is .63 (R² = .40) and the adjusted R square is .39 which indicates that 39% of the variance in the participants' research practice can be predicted from the combination of their reflective practice and self-efficacy.

Further analysis indicated that the combination of reflective practice and self-efficacy strongly predicted the participants' research practice, $F(2, 147) = 49.08$, $p = .00 < .05$ (see Appendix E). Table 3 indicates the amount of contribution of reflective practice and self-efficacy to research practice.

Table 3: Multiple regression for reflective practice and self-efficacy as the predictors of research practice

	Unstandardised coefficients		Standardised coefficients	Significance of the slope	
	B	Std. error	Beta	t	Sig.
Reflective practice	.406	.080	.412	5.069	.000
Self-efficacy	.350	.098	.289	3.554	.001

a. Dependent variable: Research practice.

The results in Table 3 show that reflective practice and self-efficacy strongly predict the EFL teachers' research practice and the former is the stronger predictor. It could thus be suggested that EFL teachers who do more reflective practice and are more self-efficacious in ELT are more engaged in research activities.

Relationship of reflective practice subscales to research practice and self-efficacy

The second research question investigated the relationship among the subscales of reflective practice and the EFL teachers' research practice and self-efficacy by applying a multiple correlation analysis (see Table 4).

Table 4: Multiple correlation among subscales of reflective practice and research practice and self-efficacy

	Research practice	Self-efficacy
Practical reflection	.381a	.539a
Cognitive reflection	.575a	.558a
Affective reflection	.361a	.385a
Metacognitive reflection	.375a	.441a
Critical reflection	.448a	.330a

a. Two tailed, significant at 0.01.

As the results in Table 4 indicate, all subscales of reflective practice significantly and positively correlate with the EFL teachers' research practice and self-efficacy. The greatest correlation was found between cognitive reflection and research practice ($r = .575$, $p < .00$) followed by critical reflection and research practice ($r = .448$, $p < .00$), and cognitive reflection and self-efficacy ($r = .558$, $p < .00$) followed by practical reflection and self-efficacy ($r = .539$, $p < .00$).

Power of reflective practice subscales in predicting research practice

The second research question further examined whether the subscales of reflective practice predict EFL teachers' research practice and self-efficacy. Two multiple regression analyses were applied (see Tables 5 and 6). Table 5 shows the multiple correlation coefficient and the adjusted and unadjusted correlation of the subscales of reflective practice as the predictors of research practice.

Table 5: Model summary - multiple correlation coefficient and the adjusted and unadjusted R of reflective practice subscales as the predictors of research practice

R	R ²	Adjusted R ²	Std. error of the estimate
.623a	.388	.367	.389

a. Predictors: (Constant), practical, cognitive, metacognitive, affective, and critical reflections

The results in Table 5 indicate that the multiple correlation coefficient (R), using the subscales of reflective practice as predictors simultaneously, is .62 ($R^2 = .39$) and the adjusted R square is .37 which shows that 37% of the variance in the participants' research practice can be predicted from the combination of the subscales of reflective practice.

The combination of the subscales of reflective practice also strongly predicted the participants' research practice, $F(5, 144) = 18.25$, $p = .00 < .05$ (see Appendix F). Table 6

shows the amount of contribution of each subscale of reflective practice to research practice.

Table 6: Multiple regression among subscales of reflective practice and research practice

	Unstandardised coefficients		Standardised coefficients	Significance of the slope	
	B	Std. error	Beta	t	Sig.
Practical reflection	.069	.056	.101	1.243	.216
Cognitive reflection	.251	.055	.396	4.556	.000
Affective reflection	.018	.055	.027	.319	.750
Metacognitive reflection	.021	.075	.024	.287	.774
Critical reflection	.182	.060	.229	3.052	.003

a. Dependent variable: Research practice

As the results in Table 6 indicate, among the subscales of reflective practice, cognitive reflection and critical reflection strongly predict the participants' research practice, and the former is the strongest predictor. It is argued that EFL teachers who do more cognitive and critical reflection are more engaged in research activities in ELT.

Power of reflective practice subscales in predicting self-efficacy

Table 7 shows the multiple correlation coefficient and the adjusted and unadjusted correlation of the subscales of reflective practice as the predictors of self-efficacy.

Table 7: Model summary - multiple correlation coefficient and the adjusted and unadjusted R of reflective practice subscales as the predictors of self-efficacy

R	R ²	Adjusted R ²	Std. error of the estimate
.647(a)	.419	.398	.313

a. Predictors: (Constant), practical, cognitive, metacognitive, affective, and critical reflections

As the results in Table 7 indicate, the multiple correlation coefficient (R), using the subscales of reflective practice simultaneously, is .65 ($R^2 = .42$) and the adjusted R square is .40 which shows that 40% of the variance in the participants' self-efficacy can be predicted from the combination of the subscales of reflective practice.

In addition, the results indicated that the combination of the subscales of reflective practice strongly predicted the participants' self-efficacy, $F(5, 144) = 20.73$, $p = .00 < .05$ (see Appendix G). Table 8 reveals the amount of contribution of each subscale of reflective practice to self-efficacy.

As the results in Table 8 reveal, among the subscales of reflective practice, practical reflection and cognitive reflection strongly predict the participants' self-efficacy, and the former is the strongest predictor. Thus, EFL teachers who do more practical and cognitive reflections are more self-efficacious in ELT.

Table 8: Multiple regression among subscales of reflective practice and self-efficacy

	Unstandardised coefficients		Standardised coefficients	Significance of the slope	
	B	Std. error	Beta	t	Sig.
Practical reflection	.184	.045	.327		.000
Cognitive reflection	.163	.044	.311	3.673	.000
Affective reflection	-.021	.044	-.039	-.463	.644
Metacognitive reflection	.102	.060	.139	1.694	.093
Critical reflection	.045	.048	.069	.938	.350

a. Dependent variable: Self-efficacy

Relationship of subscales of self-efficacy with research practice and reflective practice

The third research question examined the relationship among the subscales of self-efficacy and the EFL teachers' research practice and reflective practice. Multiple correlation analysis was run (Table 9).

Table 9: Multiple correlation among subscales of self-efficacy and research practice and reflective practice

	Research practice	Reflective practice
Instructional strategies	.480a	.564a
Classroom management	.469a	.432a
Student engagement	.406a	.566a

a. Two tailed, significant at 0.01.

The results in Table 9 reveal that all the subscales of self-efficacy significantly and positively correlate with the EFL teachers' research practice and reflective practice. The greatest correlation was found between instructional strategies and research practice ($r = .480$, $p < .00$) followed by classroom management and research practice ($r = .469$, $p < .00$), and student engagement and reflective practice ($r = .566$, $p < .00$) followed by instructional strategies and reflective practice ($r = .564$, $p < .00$).

Power of self-efficacy subscales in predicting research practice

The third research question also examined whether the subscales of self-efficacy predict EFL teachers' research practice and reflective practice. For this aim, two multiple regression analyses were run (Tables 10 and 11). Table 10 presents the multiple correlation coefficient and the adjusted and unadjusted correlation of the subscales of self-efficacy as the predictors of research practice.

As the results in Table 10 indicate, the multiple correlation coefficient (R), using the subscales of self-efficacy simultaneously, is .55 ($R^2 = .30$) and the adjusted R square is .29 which shows that 29% of the variance in the participants' research practice can be predicted from the combination of the subscales of self-efficacy.

Table 10: Model summary, investigating the multiple correlation coefficient, the adjusted, and unadjusted R of self-efficacy subscales as the predictors of research practice

R	R ²	Adjusted R ²	Std. error of the estimate
.552(a)	.304	.290	.412

a. Predictors: (Constant), instructional strategies, classroom management, and student engagement

Moreover, the results revealed that the combination of the subscales of self-efficacy strongly predicted the participants' research practice, $F(3, 146) = 21.27$, $p = .00 < .05$ (see Appendix H). Table 11 indicates the amount of contribution of each subscale of self-efficacy to research practice.

Table 11: Multiple regression among subscales of self-efficacy and research practice

	Unstandardised coefficients		Standardised coefficients	Significance of the slope	
	B	Std. error	Beta	t	Sig.
Instructional strategies	.311	.087	.299	3.559	.001
Classroom management	.234	.082	.258	2.848	.005
Student engagement	.109	.099	.099	1.093	.276

a. Dependent variable: Research practice

Table 11 indicates that among the subscales of self-efficacy, efficacy for instructional strategies and efficacy for classroom management strongly predict the participants' research practice. Therefore, EFL teachers who are more self-efficacious in instructional strategies and classroom management are more engaged in research activities in ELT.

Power of self-efficacy subscales in predicting reflective practice

Table 12 shows the multiple correlation coefficient and the adjusted and unadjusted correlation of the subscales of self-efficacy as the predictors of reflective practice.

Table 12: Model summary - multiple correlation coefficient and the adjusted and unadjusted R of self-efficacy subscales as the predictors of reflective practice

R	R ²	Adjusted R ²	Std. error of the estimate
.651 ^a	.423	.411	.381

a. Predictors: (Constant), instructional strategies, classroom management, and student engagement

The results in Table 12 show that the multiple correlation coefficient (R), using the predictors (i.e. the subscales of self-efficacy) simultaneously, is .65 ($R^2 = .42$) and the adjusted R square is .41 which indicates that 41% of the variance in the participants' reflective practice can be predicted from the combination of the subscales of self-efficacy.

Additionally, the results indicated that the combination of the subscales of self-efficacy strongly predicted the participants' reflective practice, $F(3, 146) = 35.70$, $p = .00 < .05$

(see Appendix I). Table 13 shows the amount of contribution of each subscale of self-efficacy to reflective practice.

Table 13: Multiple regression among subscales of self-efficacy and reflective practice

	Unstandardised coefficients		Standardised coefficients	Significance of the slope	
	B	Std. error	Beta	t	Sig.
Instructional strategies	.385	.081	.365	4.775	.000
Classroom management	.026	.076	.028	.339	.735
Student engagement	.405	.092	.363	4.404	.000

a. Dependent variable: Reflective practice

Table 13 shows that among the subscales of self-efficacy, efficacy for instructional strategies and efficacy for student engagement strongly predict the participants' reflective practice. As a result, EFL teachers who are more self-efficacious in instructional strategies and student engagement do more reflective practice in ELT.

Difference among levels of research practice and reflective practice

The fourth research question sought to investigate whether teachers who are actively, moderately, and rarely engaged in research do reflective practice differently in ELT. A one-way ANOVA was used, the results of which are shown in Tables 14 and 15. As the EFL teachers' mean scores on English language teaching reflection inventory, shown in Appendix D, ranged from 1.95 to 4.85, those who received 4 and higher were considered as teachers who are actively engaged in research, those who received 3 to 4 were regarded as teachers who are moderately engaged in research, and those who received lower than 3 were considered as teachers who are rarely engaged in research.

Table 14 presents the amount of mean differences among the EFL teachers who are actively, moderately, and rarely engaged in research and their reflective practice.

Table 14: Descriptive statistics, mean differences among EFL teachers who are actively, moderately, and rarely engaged in research and their reflective practice

	N	Mean	Std. dev.	Std. error
Teachers actively engaged in research	37	3.904	.358	.058
Teachers moderately engaged in research	100	3.631	.453	.045
Teachers rarely engaged in research	13	3.071	.647	.179
Total	150	3.650	.496	.040

Table 15 shows a significant difference among the EFL teachers who are actively, moderately, and rarely engaged in research and their reflective practice, $F(2, 147) = 16.63$, $p = .00 < .05$.

Table 15: Analysis of variance - differences among the EFL teachers who are actively, moderately, and rarely engaged in research and their reflective practice

	Sum of squares	df	Mean square	F	Sig.
Between groups	6.787	2	3.393	16.628	.000
Within groups	29.999	147	.204		
Total	36.786	149			

Scheffe post-hoc analysis was also run to show where the differences occurred among EFL teachers who are actively, moderately, and rarely engaged in research and their reflective practice (see Appendix J). The results indicated that EFL teachers who are actively engaged in research did more reflective practice than EFL teachers who are moderately and rarely engaged in research.

Difference among levels of research practice and self-efficacy

The fourth research question further set out to examine whether teachers who are actively, moderately, and rarely engaged in research are more self-efficacious in their English language performance. A one-way ANOVA was run (see Tables 16 and 17). Table 16 shows the amount of mean differences among the EFL teachers who are actively, moderately, and rarely engaged in research and their self-efficacy.

Table 16: Descriptive statistics for differences among EFL teachers who are actively, moderately, and rarely engaged in research and their self-efficacy

	N	Mean	Std. dev.	Std. error
Teachers actively engaged in research	37	3.973	.336	.055
Teachers moderately engaged in research	100	3.785	.386	.038
Teachers rarely engaged in research	13	3.320	.341	.094
Total	150	3.791	.404	.033

As Table 17 indicates, there is a significant difference among EFL teachers who are actively, moderately, and rarely engaged in research and their self-efficacy, $F(2, 147) = 14.87$, $p = .00 < .05$.

Table 17: Analysis of variance, investigating the difference among the EFL teachers who are actively, moderately, and rarely engaged in research and self-efficacy

	Sum of squares	df	Mean square	F	Sig.
Between groups	4.105	2	2.053	14.867	.000
Within groups	20.297	147	.138		
Total	24.403	149			

Scheffe post-hoc analysis was further applied to reveal where the differences occurred among EFL teachers who are actively, moderately, and rarely engaged in research and their self-efficacy (see Appendix J). The results indicated that EFL teachers who are

actively engaged in research were more self-efficacious in comparison with the EFL teachers who are moderately and rarely engaged in research.

Discussion

The findings of the study indicated significant and positive associations among EFL teachers' reflective practice, self-efficacy, and research practice. Moreover, reflective practice and self-efficacy strongly predicted research practice. It could be suggested that those EFL teachers who do more reflective practice and are more self-efficacious in their English language performance are more engaged with and in research in ELT. It is proposed that EFL teachers who critically examine their actions before (reflection-for-action) (Farrell, 2016a), in (reflection-in-action), and after (reflection-on-action) the class to find effective ways to develop their teaching practice and improve their students' learning (Schon, 1983) are more research engaged in ELT. In this line, Allwright and Hanks (2009) and Rahimi and Weisi (2018) claimed that being involved in research activity behoves teachers to think more reflectively about the issues they encounter in the classroom. On the other hand, EFL teachers who firmly believe that their professional English language teaching leads to successful accomplishment of teaching tasks (Depaepe & König, 2018) and students' improvement (Malmberg et al., 2014), are more engaged in ELT research. The findings are in line with those of Wyatt and Dikilitaş (2015) who indicated that gaining research experience and promoting practical knowledge in this regard develop positive self-efficacy beliefs in teachers. Furthermore, in line with the findings, Cabaroglu (2014) and Henson (2001) proposed that teachers' research practice led to highly positive changes in their self-efficacy beliefs.

The findings also indicated that all subscales of reflective practice significantly and positively correlated with EFL teachers' research practice; nevertheless, only cognitive reflection and critical reflection strongly predicted research practice. It is thus suggested that EFL teachers who reflect on the content of relevant and professional published articles and books to develop their professional English language practice (i.e. cognitive reflection) and deal with the socio-political dimension of their teaching (critical reflection) (Akbari et al., 2010) are more engaged in ELT research.

The findings further revealed that all subscales of reflective practice significantly and positively correlated with EFL teachers' self-efficacy, while only practical reflection and cognitive reflection strongly predicted their self-efficacy. As a result, EFL teachers who reflect for, in, and on their teaching practice by keeping journals, talking to colleagues, etc. (i.e. practical reflection), and reflect on their professional knowledge which they have acquired from different sources (Akbari et al., 2010) do and read more research in ELT.

In addition, the findings indicated that all subscales of self-efficacy significantly and positively correlated with EFL teachers' research practice, however, efficacy for instructional strategies and efficacy for classroom management strongly predicted their research practice. Therefore, based on the findings, EFL teachers who are engaged in reading and doing research are more self-efficacious at managing the classroom. For example, as Tschannen-Moran and Woolfolk Hoy (2001) claimed, they are more self-

efficacious at controlling student behaviour to get them to follow the classroom procedures. In addition, they are more self-efficacious at providing students with a variety of instructional strategies in order to better manage their language input and output.

The findings also revealed that all subscales of self-efficacy significantly and positively correlated with EFL teachers' reflective practice, and efficacy for instructional strategies and efficacy for student engagement strongly predicted EFL teachers' reflective practice. It could be proposed that EFL teachers who do more reflective practice in their classroom are more self-efficacious at managing the classroom and motivating their students in their English language learning processes.

Moreover, the findings indicated that EFL teachers who were actively engaged in research did more reflective practice and were more self-efficacious in comparison with the EFL teachers who were moderately and rarely engaged in research. This finding was in line with the aforementioned findings of the study in which EFL teachers who are more engaged in research do more reflective practice and are more self-efficacious.

Conclusion

The findings show that reflective practice and self-efficacy, and their subscales, correlate significantly with EFL teachers' research practice. In the light of the findings, we recommend that educational policy makers promote research practice amongst EFL teachers, by providing a supporting context in which they conduct research about their professional English language performance and students' learning. EFL teachers are recommended to adapt their approach in accordance with their local contexts (Kumaravadivelu, 2006), and become their own researchers as "working for understanding is part of the teaching and learning, not extra to it" (Allwright, 2003, p. 127). We also recommend that administrators and teacher educators provide EFL teachers with opportunities to reflect on, in, and for their own teaching practice, which can subsequently involve them in research activities and develop their teaching performance. In addition, teacher self-efficacy should be developed during teacher-training courses to further contribute to teachers' research practice.

However, future researchers are recommended to replicate the same study to find if the same correlations exist when data are collected from other contexts. In addition, future researchers might conduct qualitative studies to explore the issues that impact EFL teachers' research practice, reflective practice, and self-efficacy, and to explore the kind of support that the EFL teachers require in order to become more engaged with and in research in ELT, more reflective in their teaching practice, and more self-efficacious in this regard.

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Appendix A: English language teaching reflection inventory

Dear respondent, this questionnaire is devised with the aim of looking into your actual teaching practices as a professional teacher. To this end, your careful completion of the questionnaire will definitely contribute to obtaining real data which is crucial for more accurate findings. The information will be kept confidential and will be used just for research purposes. Thank you very much in advance for your time and cooperation.

1: Never; 2: Rarely; 3: Sometimes; 4: Often; 5: Always

Items	1	2	3	4	5
A. Practical reflection					
1. I have a file where I keep my accounts of my teaching for reviewing purposes.					
2. I talk about my classroom experiences with my colleagues and seek their advice /feedback.					
3. After each lesson, I write about the accomplishments/failures of that lesson or I talk about the lesson to a colleague.					
4. I discuss practical/theoretical issues with my colleagues.					
5. I observe other teachers' classrooms to learn about their efficient practices.					
6. I ask my peers to observe my teaching and comment on my teaching performance.					
B. Cognitive reflection					
7. I read books/articles related to effective teaching to improve my classroom performance.					
8. I participate in workshops/conferences related to teaching/learning issues.					
9. I think of writing articles based on my classroom experiences.					
10. I look at journal articles or search the internet to see what the recent developments in my profession are.					
11. I carry out small scale research activities in my classes to become better informed of learning/teaching processes.					
12. I think of classroom events as potential research topics and think of finding a method for investigating them.					
C. Affective reflection					
13. I talk to my students to learn about their learning styles and preferences.					
14. I talk to my students to learn about their family backgrounds, hobbies, interests and abilities.					
15. I ask my students whether they like a teaching task or not.					
D. Metacognitive reflection					
16. As a teacher, I think about my teaching philosophy and the way it is affecting my teaching.					
17. I think of the ways my biography or my background affects the way I define myself as a teacher.					
18. I think of the meaning or significance of my job as a teacher.					
19. I try to find out which aspects of my teaching provide me with a sense of satisfaction.					
20. I think about my strengths and weaknesses as a teacher.					

21. I think of the positive/negative role models I have had as a student and the way they have affected me in my practice.					
22. I think of inconsistencies and contradictions that occur in my classroom practice.					

E. Critical reflection

23. I think about instances of social injustice in my own surroundings and try to discuss them in my classes.					
24. I think of ways to enable my students to change their social lives in fighting poverty, discrimination, and gender bias.					
25. In my teaching, I include less-discussed topics, such as old age, AIDS, discrimination against women and minorities, and poverty.					
26. I think about the political aspects of my teaching and the way I may affect my students' political views.					
27. I think of ways through which I can promote tolerance and democracy in my classes and in the society in general.					
28. I think about the ways gender, social class, and race influence my students' achievements.					
29. I think of outside social events that can influence my teaching inside the class.					

Appendix B: Teachers' self-efficacy scale

Dear respondent, the purpose of this instrument is to measure English language teachers' beliefs about their efficacy in different teaching contexts. The information will be kept confidential and will be used just for research purposes. Thank you very much in advance for your time and cooperation.

1: Nothing; 2: Very little; 3: Some influence; 4: Quite a bit; 5: A great deal.

Items	1	2	3	4	5
A. Efficacy for instructional strategies					
1. To what extent can you use a variety of assessment strategies?					
2. To what extent can you provide an alternative explanation for example when students are confused?					
3. To what extent can you craft good questions for your students?					
4. How well can you implement alternative strategies in your classroom?					
5. How well can you respond to difficult questions from your students?					
6. How much can you do to adjust your lessons to the proper level for individual students?					
7. To what extent can you gauge student comprehension of what you have taught?					
8. How well can you provide appropriate challenges for very capable students?					
B. Efficacy for classroom management					
9. How much can you do to control disruptive behaviour in the classroom?					
10. How much can you do to get children to follow classroom rules?					

11. How much can you do to calm a student who is disruptive or noisy?					
12. How well can you establish a classroom management system with each group of students?					
13. How well can you keep a few problem students from ruining an entire lesson?					
14. How well can you respond to defiant students?					
15. To what extent can you make your expectation clear about student behaviour?					
16. How well can you establish routines to keep activities running smoothly?					

C. Efficacy for student engagement

17. How much can you do to get students to believe they can do well in schoolwork?					
18. How much can you do to help your students value learning?					
19. How much can you do to motivate students who show low interest in schoolwork?					
20. How much can you assist families in helping their children do well in school?					
21. How much can you do to improve the understanding of a student who is failing?					
22. How much can you do to help your students think critically?					
23. How much can you do to foster student creativity?					
24. How much can you do to get through to the most difficult students?					

Appendix C: English language teachers' research practice questionnaire

Thinking specifically about the research you conduct while a teacher at English language institute, please answer the following questions.

1: Not at all, 2: Very little, 3: To some extent, 4: quite a lot, 5: a great deal

Items	1	2	3	4	5
1. To what extent do you read published English language teaching research?					
2. To what extent does the research you read influence your teaching?					
3. To what extent can you identify an issue that needs researching?					
4. To what extent can you develop specific research questions?					
5. To what extent can you develop a focused literature review?					
6. To what extent can you identify appropriate research methods?					
7. To what extent can you justify using the research methods you have chosen, considering their strengths and weaknesses?					
8. To what extent can you design appropriate research instruments?					
9. To what extent are you skilful in collecting data?					
10. To what extent are you skilful in analysing data?					
11. To what extent can you conduct research in an ethical way?					

12. To what extent are you able to produce research that contributes to knowledge, with implications for practice?					
13. To what extent are you able to adopt a critical stance, constantly questioning your own biases?					
14. To what extent are you able to produce coherent reports of your research, both in oral and written form?					
15. To what extent has your research practice affected your teaching?					
16. To what extent has your research practice impacted your self-confidence in any way or your sense of autonomy in teaching?					
17. To what extent has your research practice affected the way you work with colleagues?					
18. To what extent has your research practice affected your understanding of your learners?					
19. To what extent have your learners benefited from your research?					
20. To what extent does your working context support your research activity?					

Appendix D: Descriptive statistics of the participants' responses to English language teaching reflection inventory and its different subscales, Teachers' self-efficacy scale and its different subscales, and ELT research practice questionnaire

	N	Min.	Max.	Mean	SD
Reflective practice	150	1.79	4.66	3.650	.496
Practical reflection	150	1.33	5.00	3.445	.717
Cognitive reflection	150	2.00	5.00	3.640	.772
Affective reflection	150	1.33	5.00	3.695	.763
Metacognitive reflection	150	1.57	5.00	3.957	.551
Critical reflection	150	1.43	5.00	3.509	.615
Self-efficacy	150	2.58	4.75	3.791	.404
Instructional strategies	150	2.25	5.00	3.863	.470
Classroom management	150	2.38	5.00	3.835	.539
Student engagement	150	2.25	5.00	3.676	.445
Research practice	150	1.95	4.85	3.678	.489
Valid N (listwise)	150				

Appendix E: ANOVA, investigating the prediction of the combination of reflective practice and self-efficacy of the participants' research practice

	Sum of squares	df	Mean square	F	Sig.
Regression	14.303	2	7.151	49.082	.000
Residual	21.419	147	.146		
Total	35.722	149			

a. Dependent variable: Research practice

b. Predictors: (Constant), reflective practice and self-efficacy

Appendix F: ANOVA, investigating the prediction of the combination of subscales of reflective practice of the participants' research practice

	Sum of squares	df	Mean square	F	Sig.
Regression	13.856	5	2.771	18.250	.000(b)
Residual	21.866	144	.152		
Total	35.722	149			

a. Dependent variable: Research practice

b. Predictors: (Constant), critical, practical, metacognitive, affective, cognitive

Appendix G: ANOVA, investigating the prediction of the combination of subscales of reflective practice of the participants' self-efficacy

	Sum of squares	df	Mean square	F	Sig.
Regression	10.215	5	2.043	20.735	.000(b)
Residual	14.188	144	.099		
Total	24.403	149			

a. Dependent variable: Self-efficacy

b. Predictors: (Constant), critical, practical, metacognitive, affective, cognitive

Appendix H: ANOVA, investigating the prediction of the combination of subscales self-efficacy of the participants' research practice

	Sum of squares	df	Mean square	F	Sig.
Regression	10.866	3	3.622	21.274	.000(b)
Residual	24.856	146	.170		
Total	35.722	149			

a. Dependent variable: Research practice

b. Predictors: (Constant), instructional strategies, classroom management, student engagement

Appendix I: ANOVA, investigating the prediction of the combination of subscales self-efficacy of the participants' reflective practice

	Sum of squares	df	Mean square	F	Sig.
Regression	15.567	3	5.189	35.702	.000(b)
Residual	21.220	146	.145		
Total	36.786	149			

a. Dependent variable: Reflective practice

b. Predictors: (Constant), instructional strategies, classroom management, student engagement

Appendix J: Post hoc test, investigating where the differences occurred between EFL teachers who are actively, moderately, and rarely engaged in research and their reflective practices

(I) Group	(J) Group	Mean difference (I-J)	Std. error	Sig.
High	Mid	.273(a)	.086	.006
	Low	.833(a)	.145	.000
Mid	High	-.273(a)	.086	.006
	Low	.560(a)	.133	.000
Low	High	-.833(a)	.145	.000
	Mid	-.560(a)	.133	.000

a. The mean difference is significant at the 0.05 level.

Appendix K: Post hoc test, investigating where the differences occurred between EFL teachers who are actively, moderately, and rarely engaged in research on self-efficacy

(I) Group	(J) Group	Mean difference (I-J)	Std. error	Sig.
High	Mid	.187(a)	.071	.026
	Low	.652(a)	.119	.000
Mid	High	-.187(a)	.071	.026
	Low	.465(a)	.109	.000
Low	High	-.652(a)	.119	.000
	Mid	-.465(a)	.109	.000

a. The mean difference is significant at the 0.05 level.

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