The Language Learning Journal
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/rllj20

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Available online: 07 Nov 2011

To cite this article: Behzad Ghonsooly & Afsaneh Ghanizadeh (2011): Self-efficacy and self-regulation and their relationship: a study of Iranian EFL teachers , The Language Learning Journal, DOI:10.1080/09571736.2011.625096

To link to this article: http://dx.doi.org/10.1080/09571736.2011.625096

The Language Learning Journal
2011, 1–17, iFirst Article

Self-efficacy and self-regulation and their relationship: a study of Iranian EFL teachers

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This article sets out to examine the relationship between EFL teachers' sense of self-efficacy and their self-regulation. It also explores the relationships between self-regulation on the one hand and length of teaching experience, age and gender respectively. Ninety-two EFL teachers from different English language institutes in north-eastern Iran took part in the study. The findings indicate a significant relationship between teachers' self-regulation and self-efficacy beliefs; further, among the components comprising self-regulation, *goal-setting* and *mastery goal-orientation* had the highest correlations with the teachers' sense of self-efficacy. In addition, significant correlations were found between teachers' self-regulation, their teaching experience and their age. There were, however, no significant correlations with gender.

Introduction

A body of theoretical and empirical studies in education demonstrates that individuals are highly influenced by their beliefs. Pajares (1992) contended that beliefs play a more decisive role than knowledge in organising and approaching tasks. Over the past two decades, specific attention has focused on self-efficacy beliefs, that is, an individual's sense of their own capabilities to organise and successfully complete a task. Studies have indicated that self-efficacy beliefs correlate positively with academic achievement and motivation (e.g. Pajares and Miller 1994; Bandura 1997; Pajares 2003), thus substantiating Bandura's (1997) contention that learners with higher self-efficacy participate more readily, work harder, pursue more challenging goals, spend more effort toward fulfilling identified goals, and persist longer in the face of difficulty. Teachers' self-efficacy beliefs have also been shown to be critical in effective teaching (Tschannen-Moran, Woolfolk Hoy and Hoy 1998), in the degree of personal commitment (Coladarci 1992), and in enthusiasm in teaching (Allinder 1994). In L2 contexts, investigations have focused on the contributing role of teachers' self-efficacy to their pedagogical success (Ghanizadeh and Moafian 2011), its association with their level of emotional intelligence (Moafian and Ghanizadeh 2009) and in the case of pre-service teachers, with their self-reported language learning strategies (Wong 2005). Despite this growing interest in the

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ISSN 0957-1736 print/ISSN 1753-2167 online

http://dx.doi.org/10.1080/09571736.2011.625096
http://www.tandfonline.com

dynamic interplay between teachers' self-efficacy beliefs and their functional, cognitive and affective skills, there are as yet few documented studies investigating the relationship between teachers' self-efficacy and their metacognitive abilities, particularly self-regulation, in the context of English as a foreign language (EFL) teaching.

Self-regulation refers to 'self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals' (Zimmerman 2000: 14). In the realm of education, self-regulatory skills have been found to be associated with students' achievement and motivation (Zimmerman and Schunk 2001), and this finding can be generalised to teachers. According to Delfino, Dettori and Persico (2010) the complexity of the individual and the social aspects of teaching roles call for teachers to be highly self-regulated in order to achieve teaching effectiveness. Indeed, as Randi (2004) maintained from a social cognitive perspective, effective teachers are self-regulated agents who can activate their beliefs to take appropriate actions leading to successful accomplishment of their professional tasks. In a similar vein, Dembo (2001) argued that in order to create opportunities for insightful instruction, teachers not only need content area knowledge, but also have to monitor their beliefs, motivation and other self-regulatory factors associated with teaching and learning.

Although research on effective teaching has examined the influence of self-efficacy beliefs and self-regulation both separately and in parallel, the relationship between these two constructs has rarely been investigated in the context of foreign language learning and teaching. Bandura (1986, 1991), the originator of self-efficacy theory, was among the first to suggest that self-efficacy is related to self-regulated learning variables. Zimmerman (1990), a pioneer in self-regulated learning theory, also posited that positive self-efficacy activates self-regulation processes, including planning, goal setting, self-monitoring, self-evaluation and corrective actions. Pintrich and DeGroot (1990) found that self-efficacy was not only a significant predictor of academic achievement, but was related to the self-regulatory skills that directed predicted achievement.

Given the above findings, the research reported here sets out to explore the relationship between self-efficacy beliefs and self-regulation in a group of Iranian EFL teachers. In what follows, we review the existing literature in more detail, focusing first on the two constructs in isolation and then on their relationship. We then present a detailed account of the Iranian research and its findings, from which we draw some implications for EFL teaching and teacher education.

Research on self-efficacy beliefs

According to Bandura (1977), individuals acquire information about their personal self-efficacy via four sources: (a) performance accomplishments (also referred to as 'mastery experience'); (b) vicarious experiences (or 'role-modeling'); (c) forms of persuasion; and (d) emotional and other psychological factors. Mastery experience is the most significant influence on the development of self-efficacy beliefs: through successful performance of a given behaviour, the sense of self-efficacy for that behaviour increases, thus contributing to future proficiency and success. In contrast, the perception that a performance has been a failure weakens self-efficacy beliefs and leads to the expectation that future performance will also be ineffective (Bandura 1997).

The second source – vicarious experience – originates from observing similar people performing a given behaviour successfully. When students observe that peers whom they regard as similar to themselves are able to accomplish a task, a belief may be fostered that they too can accomplish it (Cook 2008). Vicarious experience is argued to have a weaker impact than mastery experience because it can also be negated by performance setbacks (Schunk and Meece 2005). In other words, observing people similar to oneself fail can lower an individual's confidence and subsequently undermine future efforts.

Thirdly, persuasion such as others' verbal encouragement can enhance self-efficacy beliefs and contribute to achieving envisaged success. Negative persuasion, on the other hand, can undermine self-efficacy beliefs. Finally, psychological states (such as stress, anxiety and excitement) can have an influence. These signs may point to a sense that competence is lacking and may therefore depress sense of self-efficacy; learners may thus feel more self-efficacious when they experience fewer such emotional symptoms (Schunk and Meece 2005).

Bandura (1993) postulated that self-efficacy beliefs regulate functioning through cognitive, motivational, affective and selection processes. The effects of self-efficacy beliefs on cognitive processes take various forms. Bandura's view is that most human behaviour is regulated by forethought. With a stronger sense of self-efficacy, an individual will set more challenging goals for themselves. Self-efficacious individuals visualise success, and this provides positive support for performance. Bandura asserted that there is a great difference between possessing knowledge and skills, and being able to use them well.

Regarding motivation, highly self-efficacious individuals set challenging goals, expect their efforts to produce good results, and believe their failure is due to insufficient effort or inadequate strategies rather than lack of ability. Bandura (1997) states that self-efficacy beliefs play a major role in the regulation of motivation and have the benefit of enhancing individuals' confidence in their capabilities. This in turn may also influence how much stress and depression they experience in threatening or demanding situations. Neilson (2004) noted that when individuals feel confident in their capabilities to learn and perform a given task, they reduce negative thinking and worrying over potentially threatening settings and tasks. Bandura's (1993) view was that self-efficacy beliefs affect the kind of activities and environments that people choose to engage with. At this selective level, they avoid activities and circumstances they believe exceed their coping capabilities. Conversely, they readily select challenging activities and situations which they judge themselves capable of handling.

This theoretical conceptualisation of sense of self-efficacy and its role in human behaviour has received support from empirical research in a variety of contexts and disciplines. In educational contexts, studies have demonstrated the relationship between students' self-efficacy beliefs for academic tasks and objectives and their academic performance (e.g. Schunk 1991; Pajares and Schunk 2001). Virtually all these studies confirm Pajares' (1992) argument that self-efficacious learners work harder, persist longer, persevere in the face of difficulties, are more optimistic, have lower anxiety and achieve more. The role of teacher self-efficacy beliefs in effective teaching has also been an important area of inquiry. Teacher self-efficacy 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 and Hoy 1998: 22). Gibson and Demo

(1984), for example, found a strong correlation between teachers' self-efficacy and their persistence in the presentation of lessons, feedback and support scaffolding for weaker students. Pajares (1992) similarly found that teachers with higher levels of self-efficacy were willing to try a variety of materials and approaches, build mastery experiences for their students, and create conditions in the classroom that enhanced students' motivation to learn more. In reviewing 88 teacher self-efficacy studies, Ross (1994) concluded that teachers with a stronger sense of self-efficacy were more likely to:

> (1) learn and use new approaches and strategies for teaching, (2) use management techniques that enhance student autonomy and diminish student control, (3) provide special assistance to low achieving students, (4) build students' self perceptions of their academic skills, (5) set attainable goals, and (6) persist in the face of student failure. (Ross 1994 cited in Woolfolk Hoy and Burke Spero 2000: 6)

Research on self-regulation

As mentioned above, self-regulation is defined as 'self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals' (Zimmerman 2000: 14). Zeidner, Boekaerts and Pintrich (2000: 751) assert that self-regulation involves 'cognitive, affective, motivational, and behavioural components that provide the individual with the capacity to adjust his or her actions and goals to achieve desired results in light of changing environmental conditions'. According to Pintrich (1999), self-regulation comprises three general classes of strategies: (a) cognitive learning strategies; (b) metacognitive or self-regulatory strategies to control cognition; and (c) resource management strategies.

Cognitive strategies include rehearsal, elaboration and organisational strategies. Basic rehearsal strategies involve reciting or repeating items in a list. Activation of information in working memory entails application of these strategies which appear to influence attention and encoding processes. As Pintrich (1999) states, these strategies by themselves do not result in higher order processing of materials to be learned. To achieve a deeper understanding of material for learning, elaboration and organisational strategies should come into play. Elaboration strategies including paraphrasing, summarising and analogy-making, play crucial roles in storing information in long-term memory by creating internal connections between the items. Via organisational strategies, learners select appropriate information and impose structure on the learned materials.

The second category of self-regulation – metacognitive strategies – comprises knowledge about cognition and self-regulation of cognition (Flavell 1979). The prevalent models of metacognitive control or self-regulating strategies have specified three general types of strategies: planning, monitoring and regulating. Planning strategies assist learners in planning their use of cognitive strategies and in activating relevant prior knowledge (Pintrich 1999). Examples of planning activities include skimming a text and forming questions prior to reading a text. The second subcategory – monitoring activities – include the utilisation of self-assessment techniques, test-taking strategies and comprehension checking techniques against self-set goals (Weinstein and Mayer 1986). These monitoring strategies, signaling breakdowns in comprehension, hint at the need for regulating strategies to repair deficits in understanding and to re-establish performance in harmony with self-set goals. Examples of self-regulatory strategies while reading, for example, include

re-reading materials, backtracking to check comprehension and skipping subsidiary ideas (Pintrich 1999).

The third category of self-regulation – resource management strategies – is decisive in helping individuals not only adjust to their environment but also accommodate the environment to their goals and standards (Pintrich 1999). Resource management strategies include managing time, effort, study context and other individuals, such as teachers and peers via the application of help-seeking strategies.

Theories and practices associated with self-regulation have been extensively applied to educational settings and school learning, leading to the development of self-regulated learning theory. Self-regulation of learning is a process that requires students to become proactively involved in their personal, behavioural, motivational and cognitive learning endeavors in order to accomplish important and valuable academic goals (Zimmerman 1998). Empirical studies have indicated a significant relationship between academic success and the use of regulatory skills and an understanding of how to use these skills (Cross and Paris 1988; Zimmerman and Schunk 2001). As Weimer (2002: 102) has noted: 'self-regulated learners proactively seek out information when needed and take steps to master it. When they encounter obstacles such as poor study conditions, confusing teachers, etc, they find a way to succeed'. Self-regulatory strategies can also enhance effective independent learning skills such as writing (Zimmerman and Kitsantas 1999) and reading (Pressley et al. 1992).

Since research has indicated that students' use of self-regulatory behaviours is critical for academic achievement, it is plausible that teachers' use of self-regulatory behaviours should positively influence their teaching practice. Baylor, Kitsantas and Chung (2001) stated that teacher regulatory strategies can guide students' learning during self-directed practice and promote teachers' skills in developing effective lesson plans. Davis and Gray (2007), sketching the strategies for developing self-regulation, supported self-regulation as an avenue to professional development. Similarly, Monshi Toussi, Boori and Ghanizadeh (in press) reported a significant positive relationship between EFL teachers' self-regulation and their teaching effectiveness. It seems plausible, conversely, to assume that teachers who lack self-regulatory skills will find it difficult or even impossible to construct the self-regulation of their students.

Research on the relationship between self-regulation and self-efficacy

An examination of the existing theories and models of sense of self-efficacy and self-regulation suggests that these two constructs are mutually associated and that there is a dynamic interplay between them. Pintrich's (1990) model of self-regulated learning incorporates self-efficacy beliefs as a subcomponent of self-regulation. Within this theoretical framework, three motivational components exist, one of which is the *expectancy component*. This refers to students' beliefs about their expected success in performing a task. This model demonstrates how these motivational beliefs (including sense of self-efficacy) may sustain or foster self-regulation. Along similar lines, Bandura's (1986) social cognitive theory, which attempts to clarify the construct of self-efficacy, contends that self conceptions regarding academic performance provide individuals with a sense of agency to motivate their learning through use of such self-regulatory processes as self-monitoring, self-evaluation and strategy use.

Empirical studies have also substantiated the dynamic interplay between sense of self-efficacy and self-regulation. Pintrich and De Groot (1990), for instance, found

positive correlations between self-efficacy and self-regulatory strategies such as planning, monitoring and regulating among both middle school and college students. Similarly, Bouffard-Bouchard, Parent and Larivee (1991) found that self-efficacious students tend to utilise self-monitoring, self-regulatory and self-evaluative strategies more than inefficacious students of equal ability.

In the domain of second or foreign language learning, Dörnyei's (2005) process model of L2 motivation incorporates self-efficacy beliefs and self-regulatory strategies into a single framework. He argues that motivation is a multi-faceted and dynamic construct which allows reciprocal relations among beliefs, intentions, goals and self-regulatory strategies. Despite the fact that motivation and its subcomponents appear to play decisive roles in foreign language learning achievement and attitude (Dörnyei 2005), there are few studies examining empirically the relationship between self-regulation and self-efficacy (two components of L2 motivation) in an EFL context and particularly among EFL teachers.

The study

Aims

Teachers' self-regulation and sense of self-efficacy seem to be critical factors in teaching effectiveness (Gibson and Demo 1984; Tschannen-Moran, Woolfolk Hoy and Hoy 1998; Dembo 2001; Randi 2004) and a dynamic interplay between the two constructs has been postulated (Bandura 1986; Zimmerman 1990; Bandura 1991). Their importance may be all the greater in L2 teaching contexts which aim to promote student interaction, particularly through pair and group work. One part of the Teachers' Sense of Efficacy Scale, utilised in this study, measures teachers' efficacy beliefs in relation to engaging students. Similarly, the Teacher Self-Regulation Scale seeks to assess teachers' regulatory strategies which might influence classroom practices and students' learning and involvement. The present study thus set out to investigate the following research questions.

Primary research questions

(1) Is there any significant relationship between EFL teachers' self-regulation and their sense of self-efficacy beliefs?
(2) Among the components which make up teachers' self-regulation, which ones predict self-efficacy beliefs most strongly?

Secondary research questions

(3) Is there any relationship between EFL teachers' self-regulation and their amount of teaching experience?
(4) Is there any relationship between EFL teachers' self-regulation and their age?
(5) Is there any relationship between EFL teachers' self-regulation and their gender?

Participants

The population for this study consisted of Iranian EFL teachers teaching English in six private institutes in Mashhad, a city in northeast Iran during the summer of 2010,

and sample of convenience was used. Ninety-two teachers agreed to participate: 53 females and 39 males, aged between 20 and 41 ($mean = 25.31$, $SD = 4.75$) with between 1 and 19 years' teaching experience ($mean = 5.24$, $SD = 3.94$). The participants had mostly majored in different branches of English: English literature (14 BA, 2 MA); English teaching (28 BA, 19 MA); English translation (9 BA). Those teachers who had not majored in English were qualified to teach it.

One or other of the researchers was teaching in all the institutes from which the participants were drawn. As colleagues, the researchers benefited from a cooperative attitude on the part of participants; yet they were confident that this familiarity would not endanger the reliability of the results as all participants completed research questionnaires anonymously, and these were coded numerically. After a brief explanation of the purpose of the research, all participants received the TSRS and OSTES questionnaires (see below) simultaneously, and then completed them at home. The original English versions of the questionnaires were used as the participants were all experienced users of English, which was the primary medium of communication within the private language institutes.

Instruments

Teacher Self-Regulation Scale (TSRS)

To assess teacher self-regulation, the researchers utilised the Teacher Self-Regulation Scale (TSRS), designed and validated by Yesim, Sungur and Uzuntiryaki (2009): see Appendix 1. This questionnaire is based on Zimmerman's self-regulation model and was developed from semi-structured interviews with pre-service and in-service teachers. It consists of 40 items using a six-point Likert scale ranging from 'strongly disagree' (one) to 'strongly agree' (six). Scores on the 40 items were averaged to give an overall indicator of the teachers' degree of self-regulation, defined by Yesim, Sungur and Uzuntiryaki (2009: 354) as 'teachers' own self-regulated strategies, which they use during lessons'. Yesim, Sungur and Uzuntiryaki (2009) further identified via confirmatory factor analysis the nine component factors in the construct of teacher self-regulation shown in Table 1 below.

Table 1. Nine factors of TSRS along with the corresponding descriptions.

Factor	Description
(1) Goal setting	Process of establishing objectives to guide actions during instruction
(2) Intrinsic interest	Beliefs concerning personal interest in the profession
(3) Performance goal orientation	Goals to do better than others as a teacher and to have others believe in one's competence
(4) Mastery goal orientation	Goals to improve competence in teaching and master the teaching task against self-set standards
(5) Self-instruction	Process of monitoring one's own performance in teaching and making instructional changes when necessary
(6) Emotional control	Strategies for controlling and regulating affect, mood and emotions
(7) Self-evaluation	Process of evaluating current teaching performance by comparing it with previously established goals and past performance
(8) Self-reaction	Affective responses following a teaching performance
(9) Help-seeking	Getting help from others to resolve problems encountered in teaching process

In our study, the total reliability of the scale estimated via Cronbach's alpha was 0.85.

Teachers' Sense of Efficacy Scale (OSTES long form)

The Teachers' Sense of Efficacy Scale (long form), designed by Tschannen-Moran and Woolfolk Hoy (2001), was used in this study, due to its comprehensiveness, integrity and ease of administration.[1] It seeks to capture the multi-faceted nature of teachers' self-efficacy beliefs in a concise manner, without becoming too specific or too general. It is also known as the Ohio State Teacher Efficacy Scale (OSTES). The long form comprises 24 items, grouped into three subscales: (a) efficacy in student engagement; (b) efficacy in instructional strategies; and (c) efficacy in classroom management. Each subscale loads equally from eight items, and each item is measured on a nine-point Likert scale from 'nothing' (1) to 'a great deal' (9). Tschannen-Moran and Woolfolk Hoy (2001) report Cronbach's alpha statistics for the reliability of the questionnaire as a whole (0.94) and for each individual factor (respectively, 0.87, 0.91 and 0.90). They also report that the average response for the questionnaire as a whole was 7.1 ($SD = 0.94$). In our study, the total reliability of the questionnaire was calculated via Cronbach's alpha at 0.89. The average response was 6.92.

Results

Table 2 gives the descriptive results for the two questionnaires.

Research Question 1: relationship between self-regulation and self-efficacy

To investigate the relationship between teachers' self-regulation and their sense of self-efficacy, the Pearson product–moment correlation was applied. This revealed a significant correlation between self-regulation and sense of self-efficacy ($r = 0.75$, $p < 0.05$). Significant relationships were also found between each of the nine self-regulation factors comprising the TSRS and EFL teachers' overall self-efficacy, as shown in Table 3.

Research Question 2: self-regulation as a predictor of self-efficacy beliefs

In order to ascertain how much of the variability in the dependent variable (self-efficacy) could be accounted for by the independent variable (self-regulation), regression analysis was employed. This revealed that 57% of the variation in teachers' self-efficacy could be explained by taking their self-regulation into account. Details of the regression analysis are given in Appendix 2.

Table 2. Descriptive statistics for OSTES and TSRS.

	N	Minimum	Maximum	Mean	*SD*	Maximum possible score
OSTES	92	115	210	166	22.6	216
TSRS	92	120	235	179	23.5	240

In addition, the statistical analysis also explored which of the nine sub-components of self-regulation had the greatest predictive power in predicting teachers' self-efficacy. As Table 4 shows, two sub-components – *goal setting* and *mastery goal orientation* – were found to be significant predictors of self-efficacy.

Research Questions 3 and 4: relationship between self-regulation and teaching experience/age

To determine the roles of teaching experience and age in teachers' self-regulation, Pearson product-moment correlations were run with these variables. Significant correlations were found between teachers' self-regulation and their years of teaching experience ($r = 0.61$, $p < .05$) as well as their age ($r = 0.286$, $p < .05$).

Research Question 5: relationship between self-regulation and gender

To discover whether teachers' self-regulation differs with regard to gender, an independent samples *t*-test was run. As Table 5 shows, gender does not play any significant role in teachers' total self-regulation ($t = 0.27$, $p < .05$).

Table 3. Correlations between TSRS factors and overall OSTES score.

TSRS factor	*R*
1. Goal setting	0.648*
2. Instrinsic interest	0.537*
3. Performance goal orientation	0.508*
4. Mastery goal orientation	0.632*
5. Self-instruction	0.606*
6. Emotional control	0.527*
7. Self-evaluation	0.518*
8. Self-reaction	0.528*
9. Help-seeking	0.369*

Note. *$p < 0.05$.

Table 4. Regression analysis for self-efficacy and nine self-regulation sub-components.

	Standardised coefficients		
Model	*Beta*	*t*	Significance
(Constant)		2.638	.010
Goal setting	.202	2.317	.023*
Intrinsic interest	.163	1.462	.148
Performance goal orientation	.026	.218	.282
Mastery goal orientation	.228	2.098	.039*
Self-instruction	.207	1.793	.077
Emotional control	.094	.850	.398
Self-evaluation	−.017	−.164	.870
Self-reaction	.091	.898	.372
Help-seeking	.052	.600	.550

Note. *$p < .05$.

Table 5. Independent *t*-test for gender and self-regulation.

	t-test for equality means				
	t	*df*	Sig. (2-tailed)	Mean difference	Std. error difference
Self-regulation	.278	90	.0668	2.326	5.873

Discussion

The results presented above confirm a significant positive relationship between teachers' degree of self-regulation and their sense of self-efficacy. This is in line with current theoretical and empirical research. The theoretical view suggests that when individuals consider themselves to be capable, they set themselves more challenging goals, consequently adopting and activating higher order metacognitive strategies, including self-regulatory learning processes (Zimmerman 2000). Self-efficacious learners thus tend to choose more complex tasks requiring more sophisticated learning strategies. Metacognitive and self-regulatory strategies have also been found to play a contributory role in enabling learners to select tasks and goals which are in line with their current level of ability (Flavell 1979); in turn, individuals are more likely to be successful on tasks which correspond to their own monitored capabilities. It can thus be argued that self-regulation promotes success which then enhances self-efficacy beliefs, since according to Bandura (1997), individuals' prior successful performance (mastery experience) is the strongest influence on the development of self-efficacy.

The findings of the present study are also consistent with current empirical research, although most studies investigating the interplay of self-regulation and self-efficacy have addressed their mediating roles in academic achievement or on other motivational variables. Zimmerman (2000: 89), for example, states: 'when studied as a mediating variable in training studies, self-efficacy has proven to be responsive to improvements in students' methods of learning (especially those involving greater self-regulation) and predictive of achievement outcomes'. Similarly, Pintrich and De Groot (1990), and Kitsantas (2000) found a positive relationship between self-efficacy and metacognitive strategy use which produces successful performance outcomes (cited in Hoffman and Spatariu 2008). Zimmerman, Bandura and Martinez-Pons (1992) revealed that the interaction between perceived self-efficacy and metacognitive strategy use accounted for about 30% variability in learners' academic performance. Bembenutty (2007), meanwhile, reported that teachers' self-efficacy beliefs influence their academic performance, which is mediated by their use of self-regulatory learning strategies.

The above studies were all conducted in L1 contexts. The present study confirms the association between self-efficacy and self-regulation in the context of Iranian EFL teachers. It suggests the more EFL teachers equip themselves with self-regulatory skills, the more capable they judge themselves in their teaching practice. It is possible that the context chosen for this research – private language institutes in Iran – may be significant here. In this context, teachers' conduct is typically disciplined and professional. Being run by private administrations and largely reliant upon language learners' satisfaction, these institutes and their teachers are regularly observed and evaluated by the institute authorities, students and their parents. Teachers are thus expected to observe standard class hours, term duration, evaluation processes, placement methods and exam administration. This context

arguably leads to teachers monitoring and regulating their actions and thoughts in order to meet high professional standards and ensure the institute authorities' and learners' satisfaction.

Iranian private language institutes aim to fulfill students' communicative needs and have adopted the principles of communicative language teaching. Accordingly, teachers are expected to function as facilitators and participants in learning. They require not just a solid base of content area knowledge, but high level of interpersonal competence to encourage and sustain student interactions and rapport. Here it seems that the beliefs teachers hold about their capabilities to establish and facilitate interaction play an influential role, since according to recent studies, EFL teachers' interpersonal intelligence is significantly associated with their self-efficacy perceptions (Moafian and Ghanizadeh 2010) and with their student-evaluated success in private language institutes (Ghanizadeh and Moafian 2011).

As indicated earlier, among the components of self-regulation, *goal-setting* and *mastery-goal orientation* were found to have the highest correlations with teacher self-efficacy and were also shown to be positive predictors of teacher self-efficacy. Given the significant correlation with *goal-setting* – the process of establishing objectives to guide actions during instruction (Yesim, Sungurand and Uzuntiryaki 2009) – it seems that teachers who set realistic goals for their teaching practice enjoy higher levels of self-efficacy. Previous studies have also pointed to the association between goal-setting and self-efficacy. Schunk (1989) theorised a dynamic interplay between individuals' goal setting and their perceptions of self-efficacy. The argument is that when individuals set explicit goals for themselves, they experience a sense of success more promptly, leading to greater self-efficacy. Alternatively, increased self-efficacy can also be seen as leading to the setting of more challenging ultimate goals. Zimmerman, Bandura and Martinez-Ponz (1992) hypothesised that perceived self-efficacy influences achievement, either directly or indirectly, via the impact on self-set goals. They contended that 'perceived self-efficacy influences the level of goal challenge people set for themselves, the amount of effort they mobilise, and their persistence in the face of difficulties' (664).

The relationship between self-efficacy and *mastery goal orientation* – goals to improve competence in teaching and master the teaching task against self-set standards (Yesim, Sungur and Uzuntiryaki 2009) – implies that teachers' commitment to developing mastery of teaching practice will tend to enhance their self-efficacy beliefs. This can be plausibly interpreted from a commonsense view: goal orientation is an intrinsically laden value or motive attached to task completion; similarly, self-efficacy beliefs are derived from people's internal thinking systems and judgments. This finding is also consistent with previous studies corroborating a positive relationship between the types of goals individuals adopt for learning and their self-efficacy (e.g. Jackson 2002; Pajares 2003). The majority of studies indicated that individuals who adopt mastery goals (aimed at developing and improving ability) tend to have higher self-efficacy than those who have performance-goal orientation (seeking to demonstrate ability) or performance-avoidance orientation (aimed at hiding lack of ability). According to Dweck and Leggett (1988), students who adopt a learning or mastery orientation promote the perceptions of self-confidence (self-efficacy) and success in their courses. Bradford and Kozlowski's (2002) study supported the adaptive nature of mastery orientation and its positive relationship with the perceived self-efficacy of undergraduate college students.

In a similar vein, Hsieh, Sullivan and Guerra (2007) found interplay between students' self-efficacy and the adoption of mastery goals, leading to successful college performance.

Positive correlations were also found between EFL teachers' self-regulation and the two variables of age and experience. This would appear to suggest that teachers' self-regulation in relation to their teaching practice tends to increase over time and with every year of teaching. This finding confirms Zimmerman's (2000) view that self-regulation is not a stable skill, but is shaped and developed through participation in environments that provide individuals with repeated opportunities to be in control of their own learning. Pintrich (2000) also posited that individuals can learn how to regulate their cognitive activities. He believed that self-regulation is neither a measure of mental intelligence that is unchangeable after a certain point in life nor a personal construct that is genetically based or formed early in life. In contrast, individuals learn self-regulation through experience.

No significant relationship was found between the degree of teacher self-regulation and gender. Thus, the teachers who participated in this study had developed the skills of being proactive in self-management and to taking initiative in making decisions (Zeidner, Boekaerts and Pintrich 2000) irrespective of gender. Self-regulation skills may be more generalised in academic and teaching contexts than in other populations, given that self-regulation is not only deemed to be a path to professional development, but also a prerequisite to the construction of students' self-regulatory skills.

Conclusion

Our findings suggest that Iranian EFL teachers who demonstrate high levels of self-regulation tend to be more self-efficacious in their professional practice. In view of the influential role of teacher self-efficacy in effective teaching (Tschannen-Moran, Woolfolk Hoy and Hoy 1998; Ghanizadeh and Moafian 2011) we speculate that teachers' enhanced self-efficacy should lead to higher attainments for both teachers and students, on the grounds that teacher self-efficacy has been found to be associated with higher degree of personal commitment (Coladarci 1992, cited in Tschannen-Moran, Woolfolk Hoy and Hoy 1998: 9), with students' positive attitudes toward school and subject matter (Tschannen-Moran, Woolfolk Hoy and Hoy 1998), and with support scaffolding for weaker students (Gibson and Dembo 1984).

Further, the positive role of goal-setting and mastery-goal orientation in enhancing teacher self-efficacy should also be taken into account by teacher educators and policy makers. Successful teachers should be rewarded for the achievement resulting from effort towards clearly-established goals. This implies that teachers' performance should be appraised with reference to their prior achievements rather than in comparison with other teachers. On the other hand, teachers' failure to achieve desired outcomes needs to be explored in terms of their goals, their strategies and the effort they have expended to accomplish their goals, rather than in terms of lack of ability. Our study underscores the view that self-regulation is something which develops through experience. This points to the importance of providing EFL teachers with preparation programmes and teaching experiences that help them self-regulate their teaching practice as such programmes at the

same time offer opportunities to enhance self-efficacy. This is of particular relevance for less experienced and younger teachers. Zimmerman (2000) pointed out that self-regulation is structured through participation in environments that provide individuals with opportunities to be in control of their own learning. In the light of our findings, Randi's (2004) list of attributes for a learning environment conducive to self-regulated learning is particularly useful. This highlights the importance of:

- supporting teachers to design their own instruction rather than imitate;
- providing teachers with choices about instruction;
- emphasising the evaluation of instructional practices;
- encouraging teachers to plan, implement, and evaluate their instruction;
- providing opportunities for learning within the context of teaching;
- helping teachers in communicating their knowledge clearly.

Note

1. The *Teachers' Sense of Efficacy Scale* can be obtained online at people.ehe.ohio-state.edu/ahoy/files/2009/02/tses.pdf.

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Appendix 1

1.1. Teacher Self-Regulation Scale (Yesim, Sungur and Uzuntiryaki 2009).

Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their teaching activities. Please indicate your opinion about each of the statements below. Your answers are confidential. (1 = strongly disagree. 2 = disagree. 3 = somewhat disagree. 4 = somewhat agree. 5 = agree. 6 = strongly agree.)	1	2	3	4	5	6
*1. I prepare classes aligned with curriculum.						
2. While preparing classes, I identify goals to be achieved by students.						
3. I direct myself to use time effectively.						
4. I appreciate myself when everything goes according to the plan.						
5. Realising that I am successful encourages me to study more.						
6. I stay calm when faced with a problem.						
7. While preparing classes, I decide on the instructional strategy appropriate for the topic.						
8. When a problem occurs in class, I first try to calm down.						
9. If the strategies I used do not work, I utilise alternative strategies.						
10. I get upset when I am negatively evaluated in my profession.						
11. While preparing classes, I take student characteristics (e.g. prior knowledge, developmental level) into consideration.						
12. I learn from the mistakes I made in class.						
13. When I feel bad in a situation, I try to think positive.						
14. I ask for help from my colleagues when I encounter problems that I cannot solve.						
15. I pay attention to students' facial expressions during instruction.						
16. At the end of instruction, I try to determine whether I have met my goals or not.						
17. While preparing classes, I get help from my colleagues when needed.						
18. Realising that I am not successful worries me.						
19. Before instruction, I decide on how to assess my students.						
20. During instruction, I adapt my instructional strategies based on students' needs.						
21. I discuss my positive and negative experiences with my colleagues after instruction.						
22. While preparing classes, I take available resources into consideration.						
23. I use student feedback to improve my instruction.						
24. While I am preparing classes, I take students' needs into account.						
25. When I encounter a problem, I take a deep breath.						
26. While evaluating myself at the end of instruction, I compare my performance against previous years.						
27. I do not panic when a problem occurs during instruction.						
Why is it important to be a successful teacher?						
28. to get promotion						
29. to improve student learning						
30. to satisfy myself professionally						
31. to get appreciation from parents						
32. to be loved by my students						
33. to strengthen my authority						
34. to develop myself						

(*continued*)

1.1. (*Continued*).

Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their teaching activities. Please indicate your opinion about each of the statements below. Your answers are confidential. (1 = strongly disagree. 2 = disagree. 3 = somewhat disagree. 4 = somewhat agree. 5 = agree. 6 = strongly agree.)	1	2	3	4	5	6
35. to please school principals						
36. to better prepare my students for life						
37. I like teaching profession.						
38. It makes me happy to see my students learn.						
39. I am proud of working as a teacher.						
40. I have been interested in teaching profession since my childhood.						
41. I attend classes enthusiastically.						

Note: *This item was inserted as a distractor.

Appendix 2

2.1. The ANOVA table of regression: self-regulation as a predictor of self-efficacy.

Model		Sum of squares	*df*	Mean square	*F*	Sig.
1	Regression	28295.625	9	3143.958	14.085	.000[a]
	Residual	18302.984	82	223.207		
	Total	46598.609	91			

Notes: Predictors: (constant), goal setting, intrinsic interest, performance goal orientation, mastery goal orientation, self-instruction, emotional control, self-evaluation, self-reaction, help-seeking.
Dependent variable: teachers' self-efficacy.

2.2. Regression analysis for teachers' self-efficacy and self-regulation.

Model		Standardised coefficients		
		Beta	*t*	Sig.
1	(Constant)		2.994	.004
	Self-regulation	.760	11.084	.000

Notes: Dependent variable: teachers' self-efficacy.

2.3. R^2 table for teachers' self-regulation as the predictor of teachers' self-efficacy.

Model	*R*	R^2	Adjusted R^2	Std. error of the estimate
1	.760[a]	.577	.572	14.79607

Notes: Predictors: (constant), self-regulation.