Self-Regulated Learning Competences and Instructional Practices Among Thai University EFL Teachers

Pajaree Nipaspong

pajaree.n@chula.ac.th, Chulalongkorn University Language Institute, Chulalongkorn University, Thailand

ABSTRACT

Self-regulated learning (SRL) plays a crucial role in language learning; however, research indicates that teachers often have a limited understanding of it. Using a mixed-methods approach, this study examined the relationships between Thai university EFL teachers' self-regulated learning competences and their instructional practices, as well as how they implemented SRL in their teaching. Data were collected from 123 in-service EFL teachers through an online questionnaire and from 10 semi-structured interviews. Results revealed a moderate correlation between overall SRL competences and instructional practices ($r = .474$, $p < .01$). However, different dimensions of SRL competences showed notable differences: knowledge demonstrated a weak negative correlation ($r = -.124$), beliefs showed a moderate positive association ($r = .357$, $p < .01$), while motivation had the strongest relationship ($r = .687$, $p < .01$) with SRL instruction. Teachers reported complementary roles for four instructional components: scaffolding, explicit instruction, implicit instruction, and diagnostic assessment. Qualitative data indicated that teachers' intuition and lesson-

driven requirements are key factors encouraging SRL implementation. Thematic analysis of interviews revealed common patterns in SRL instructional practices: implementation of SRL despite limited conceptual understanding, a preference for implicit over explicit SRL instruction, limited attention to the Reflection stage, and ambiguity between cognitive and metacognitive strategies. The findings also identified challenges in SRL instruction and highlighted a significant gap between theory and practice, which needs to be addressed through appropriate professional development.

Keywords: self-regulated learning, teachers' self-regulated learning professional competences, SRL instructional practices, EFL teachers, higher education

Background and Significance of the Study

Self-regulated learning (SRL) refers to a self-control cycle learners use to direct their own learning to achieve learning goals. To become self-regulated learners, individuals need to apply cognitive, metacognitive, motivational, and behavioral strategies in completing a learning task (Zimmerman, 2000). Studies have repeatedly reported relationships between SRL and academic performance (Teng & Zhang, 2020; Xu et al., 2022; Zimmerman, 2002), as well as SRL and learning motivation and self-efficacy (Panadero et al., 2017; Teng & Zhang, 2020; Zhang, 2024). Teachers play a key role in supporting learners' self-regulation by creating learning environments that support SRL and integrating self-regulation into instruction (Brenner, 2022).

However, despite the common agreement on the importance of promoting SRL for academic achievement and lifelong learning, little is known about how teachers can effectively foster SRL skills among their students (Dignath & Veenman, 2021). Additionally, training on instructional practices that support self-regulation is scarce in professional development, particularly in higher education (Ruiz & Panadero, 2023).

Previous studies have found that language teachers make limited use of teaching practices focused on SRL (Karlen et al., 2020; Evans et al., 2024). Existing literature has shown inconsistent relationships between different aspects of teachers' SRL competences and their promotion of SRL (Karlen et al., 2020; Kramarski & Heaysman, 2021). Moreover, most studies on SRL competences and teaching practices have been conducted in classrooms in which English is taught as a first or second language.

Existing studies on SRL in EFL contexts, particularly in Thailand, are learner-focused. Little research has explored the extent to which teachers not only develop their own SRL competences but also include SRL in their instructional practices. Therefore, this study contributes to research in SRL as it empirically investigates the relationship between Thai university EFL teachers' SRL competences and their instructional practices. The findings shed more light on SRL instruction in a relatively less explored area in an EFL higher-education context. For pedagogical significance, the findings provide evidence-based insights into how EFL teachers translate SRL knowledge, beliefs, and motivation into classroom practices. Results offer guidelines for teachers' professional development to promote explicit SRL training. On a practical level, this study points out specific areas of strength and gaps in teachers' SRL competences, which may inform teacher development programs and training policies to focus more on promoting teachers' SRL competences and integrating them in classrooms.

Literature Review

Self-Regulated Learning (SRL)

Self-regulated learning (SRL) is a cyclical process used by learners to guide their thoughts and actions to achieve their learning goals. It encompasses multiple aspects of learning, including cognitive, metacognitive, behavioral, motivational, and affective facets (Panadero, 2017). Because SRL includes multiple facets in its construct, many models have been proposed to explain the cyclical processes of self-regulation.

One of the most widely known is Zimmerman's model (Zimmerman, 2000), which identifies three phases of self-regulation. The cycle begins with the *Forethought phase*, which involves goal setting and strategic planning. The second phase, *Performance*, is when learners implement cognitive and metacognitive strategies along with self-monitoring to achieve their goals. After completing a learning task, learners enter the *Self-reflection phase*, where they evaluate their performance and reflect on how to adapt strategies for future tasks. The *Self-reflection phase* then connects to the *Forethought phase* of the next SRL cycle. Zimmerman's model demonstrates the roles of metacognitive, motivational, and behavioral facets required in the processes of self-regulation.

A large body of research has shown the positive effects of SRL instruction on academic achievement across various fields of study and all levels of education (Jansen et al., 2019; Xu et al., 2022). Specifically in English learning, SRL instruction has shown strong effects on learning outcomes

(Chen, 2022) as well as learners' motivation and self-efficacy (Panadero et al., 2017; Teng & Zhang, 2020; Zhang, 2024).

Teachers' SRL Professional Competences and Instructional Practices

The essential role of self-regulated learning (SRL) in academic achievement indicates the importance of teacher support in students' SRL development. Effective SRL instruction requires both content and pedagogical knowledge, as well as teaching practices appropriate to specific educational contexts. Therefore, to integrate SRL into their instruction, teachers need to develop a set of SRL competences themselves. To examine teachers' competences, recent studies have distinguished between how teachers regulate their own learning and how they support SRL in their instruction. Multiple studies have examined teachers' roles as self-regulated learners themselves and as agents who promote SRL to students (Dignath & Veenman, 2021; Karlen et al., 2020; Karlen et al., 2023; Kramarski & Heaysman, 2021).

An influential attempt to conceptualize teachers' dual roles in self-regulation is the integrative framework of Teachers' Professional Competences and Instructional Practices in Self-Regulated Learning (Karlen et al., 2020). The framework presents teachers' SRL competences through three fundamental dimensions: knowledge of SRL concepts, beliefs in its value, and motivation to use SRL.

Figure 1

Integrative Framework of Teachers' Professional Competences and Instructional Practices in Self-Regulated Learning (Karlen et al., 2020)

FIGURE 1 | Integrative framework of teachers' professional competences and instructional practices in self-regulated learning.
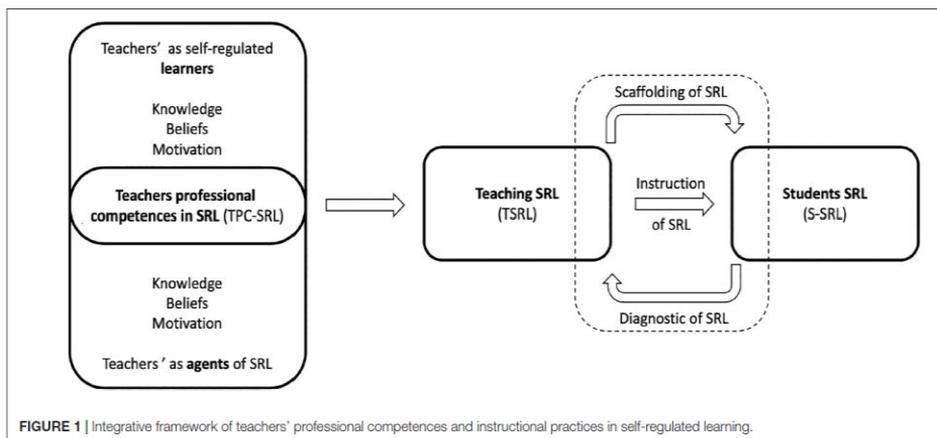
Each of the three components of SRL competences can be divided into teachers' knowledge, beliefs, and motivation, both as self-regulated learners and as agents who promote SRL. Table 1 summarizes the meaning of each component of teachers' professional competences in SRL, based on the integrative framework by Karlen et al. (2020).

Table 1

Summary of the Components of Teachers' Professional Competences in SRL, Based on the Integrative Framework by Karlen et al. (2020)

Teachers as self-regulated learners	Conceptual focus
Knowledge	Metacognitive knowledge; understanding of the purposes, methods, and appropriate timing for applying specific strategies across diverse learning contexts.
Beliefs	Beliefs that human abilities are malleable and can be developed through sustained effort, emphasizing the learnable nature of SRL skills.
Motivation	Intrinsic motivation and task valuation, perceived self-efficacy, self-concept, goal-setting orientations, self-attributions for success and failure, and strategies for regulating personal motivation.
Teachers as agents of SRL	
Knowledge	**Content knowledge of SRL** (terminology, theoretical models); understanding of how the SRL process functions **Pedagogical content knowledge**, i.e., knowing how to make SRL content accessible to students through instructional strategies
Beliefs	Teachers' belief systems concerning their responsibilities and roles as facilitators of students' SRL
Motivation	Teachers' self-efficacy, perceived value of SRL, instructional motivation, and teaching enthusiasm

Regarding teachers' instructional practices, Karlen et al.'s (2020) integrative framework identifies key components necessary for SRL instructional practices, including scaffolding support, both explicit and implicit SRL instruction, and diagnosis of students' SRL. This framework also presents teachers' SRL instruction as a cycle: first, providing scaffolding to help students regulate their learning; then, instructing students in SRL strategies; after that, diagnosing students' self-regulation to reflect and provide feedback; and finally, making adjustments to instructional practices

to promote SRL. Successful self-regulated learners engage in the SRL phases and use multiple cognitive and metacognitive strategies to address both content and learning processes, enabling them to complete tasks and achieve their goals. Therefore, teachers should provide support and guidance to learners during the SRL processes, especially in higher education, where learning tasks are more complex. Research also shows considerable variation in SRL skills among students in higher education (Evans et al., 2024), indicating the need to promote SRL among them.

Despite the important role of teachers in promoting self-regulation, repeated studies show that most teachers lack conceptual knowledge of SRL, making them reluctant to promote it in classrooms (Dignath & Büttner, 2018; Jansen et al., 2019). Multiple studies investigating teachers' SRL instruction have found that most efforts to promote SRL are conducted implicitly (Dignath & Büttner, 2018; Dignath & Veenman, 2021; Karlen et al., 2020; Rosenthal et al., 2024; Spruce & Bol, 2015). Despite the dominance of implicit teaching, research has shown a stronger association between explicit instruction of SRL strategies and learning improvements than with implicit instruction (Chen, 2022).

Recent studies on the association between teachers' SRL competences and teaching practices have produced inconsistent results. In an attempt to examine the association between different aspects of teachers' SRL competences, Karlen et al. (2023) found that teachers' knowledge, self-efficacy, and intrinsic interest are directly and positively related to their promotion of metacognitive strategies, while teachers' SRL skills and mindsets are indirectly related to their metacognition teaching. However, Rosenthal et al. (2024) found only limited significant correlations between teachers' SRL competences and their SRL promotion.

Although SRL instruction has been widely studied in primary and secondary education, research in higher education remains limited. In addition, only a few studies have investigated SRL instruction in ESL or EFL contexts and existing research also revealed empirical inconsistencies, creating a gap in understanding teachers' SRL competences and implementation at the university level. To address this gap, the current study aims to examine teachers' SRL professional competences and teaching practices at the university level and within EFL contexts, such as Thailand. The objectives of the current study are twofold:

1. To examine the relationships between Thai university EFL teachers' professional competences in SRL and their SRL instructional practices;

2. To explore how Thai university EFL teachers incorporate SRL into their instructional practices.

Methodology

Research Design

Following Creswell and Plano Clark's (2018) framework, this study employed a mixed methods research design to gain a more complete picture of Thai university EFL teachers' SRL competences and instructional practices. Quantitative data collected from a 50-item online questionnaire completed by 123 EFL teachers identify patterns and relationships between teachers' SRL competences and instructional practices. Qualitative data from individual semi-structured interviews and one open-ended question in the questionnaire help further explain patterns. Interview data also contextualize the findings by illustrating how EFL teachers translate their SRL competences into actual teaching practices as well as what challenges they face in incorporating SRL into their teaching.

Participants and Sampling Methods

The participants were 123 Thai EFL instructors at university level in Thailand. Participation in the questionnaires and individual interviews was voluntary. The study was approved by the university's Research Ethics Review Committee for its methodology and ethical considerations (COA No. 291/68). A combination of purposive and snowball sampling techniques was used. To estimate the sample size for a correlation study, G*Power software was employed, with an effect size of .3, alpha (α) set at .05, and power at .95 (Kang, 2021). This study targeted 115 participants; however, the sample size of 123 participants completing the questionnaire exceeded this.

All 123 participants were Thai teachers of English teaching, either full-time or part-time, at public or private universities in Thailand. Most taught at undergraduate level, with teaching experience ranging from one to more than ten years.

Research Instruments

Two research instruments were employed to collect data: an online questionnaire and an interview.

SRL Competences and Instructional Practices Questionnaire

A 50-item online questionnaire was developed based on the Integrative Framework of Teachers' Professional Competences and

Instructional Practices in Self-Regulated Learning (Karlen et al., 2020). The questionnaire was divided into three sections as follows:

Section 1: Demographic Information

This section confirms respondents' eligibility as Thai university English teachers and collects background information on course type, student level, and teaching experience.

Section 2: Teachers' Professional Competences in SRL

This section contains 28 items assessing Thai EFL teachers' professional competences in SRL, based on Karlen et al.'s (2020) framework of knowledge, beliefs, and motivation, both as self-regulated learners and as SRL agents. The knowledge section tests participants' knowledge of SRL through multiple-choice questions on metacognitive, theoretical, and pedagogical knowledge. The beliefs and motivation sections use 6-point Likert scale statements to measure teachers' beliefs and motivation in applying SRL personally and in promoting it to learners. A 6-point Likert scale was employed to eliminate the neutral midpoint. Therefore, it encourages respondents to indicate a clear tendency in their responses, thereby enhancing interpretability.

Section 3: SRL Instructional Practices

This section includes 18 items on teachers' SRL instructional practices, measured with a 6-point Likert scale. The items address all four areas of SRL instructional practices in Karlen et al.'s (2020) framework: scaffolding, explicit instruction, implicit instruction, and diagnosing students' SRL. Additionally, there is one Yes–No item with an open-ended reflection on teaching challenges or reasons for not implementing SRL.

In the online questionnaire (Google Forms), all items were required. Content validity was established by three experts in English language teaching and assessment using the Index of Item–Objective Congruence (IOC), and items were revised for clarity and language appropriateness. A pilot test with 16 Thai university EFL teachers, who did not participate in the main data collection, yielded a Cronbach's alpha of 0.804, indicating high preliminary internal consistency.

Semi-Structured Interview

Individual semi-structured online interviews were conducted with 10 volunteer participants. Each interview, conducted in Thai via Zoom, lasted 45–60 minutes and included 12 semi-structured questions on how Thai English teachers incorporate self-regulation into their teaching and the challenges of teaching SRL. The semi-structured interview questions were used to elaborate on and contextualize the quantitative results and to elicit in-depth qualitative insights. Content validity was reviewed by the same three experts who evaluated the questionnaire using the Index of Item–Objective Congruence (IOC), and minor revisions were made for clarity. To protect anonymity, interview participants selected flower-themed pseudonyms before the interview. The pseudonyms were used to code and cite their responses in the research article.

Data Collection

The online questionnaire was distributed through Line groups and emails to university EFL teachers from the researcher's personal contact lists. All participants volunteered to complete the questionnaire anonymously. After completing the online questionnaire, participants could apply to take part in the individual online interview by following a separate link to the interview application form. Ten participants who reported teaching SRL in classrooms were then randomly selected from the application list. Participants consented to being recorded and transcribed for data analysis. The data collection process lasted approximately one month.

Data Analysis

Data analysis included both quantitative and qualitative methods. Quantitative data from the questionnaires were analyzed using Pearson's correlation to examine the relationships between teachers' SRL professional competences and their teaching practices. The correlation was then interpreted according to the *Pearson Product-Moment Correlation Coefficient* (Turney, 2022):

Weak relationship: $r = 0$ to $\pm.30$
Moderate relationship: $r = \pm.30$ to $\pm.50$
Strong relationship: $r = \pm.50$ to ±1.0

For qualitative data analysis, the individual semi-structured interviews were transcribed and analyzed using thematic analysis. The purposes were to

identify common patterns in SRL teaching practices, validate and explain the patterns found from the quantitative findings.

Thematic analysis of qualitative data was conducted by two raters. To ensure inter-rater reliability, a research assistant independently coded the interview data. Examples of initial open codes included SRL equated lifelong learning or autonomy, uncertainty about the SRL concept, implicit or explicit SRL instruction, and SRL motivation. When disagreements arose, the two raters discussed and resolved the issues. The codes were then grouped into themes based on the following theme development criteria:

1. Explanatory value: Themes provided meaningful explanations for the quantitative findings' interpretations.

2. Repetition across participants: Themes were in recurring patterns reported by multiple interviewees.

3. Contextual relevance: Themes explained contextual factors affecting SRL teaching practices in a Thai university EFL context.

Results and Discussion

Research Question 1

The first part of the results presents the relationships between Thai university EFL teachers' professional competences in self-regulated learning (SRL) and their SRL instructional practices.

Overall, a Pearson correlation coefficient between EFL teachers' SRL competences and their instructional practices focusing on SRL indicates a moderate relationship (r = .474, p < .01). According to the findings, teachers who demonstrated higher levels of SRL competences generally tended to engage more frequently in SRL teaching practices.

Table 2

Pearson's Correlation Between Teachers' SRL Competences and Instructional Practices

Correlations			
		SRL Competences	SRL Instructional Practices
SRL Competences	Pearson Correlation	1	.474**
	Sig. (2-tailed)		.000
	N	123	123
SRL Instructional Practices	Pearson Correlation	.474**	1
	Sig. (2-tailed)	.000	
	N	123	123

**. Correlation is significant at the 0.01 level (2-tailed).

Overall, this finding corresponds with Dignath's (2021) study, which found a positive association between teachers' SRL competences and their self-reported SRL teaching practices. It also supports previous research showing that teachers' SRL knowledge and motivation–specifically self-efficacy and intrinsic interest–are key predictors of their roles in promoting metacognition, a strategic set of strategies central to SRL (Karlen et al., 2023).

However, when looking into each component that constitutes SRL competences, the findings revealed an interesting contradiction. Tables 3 to 5 show the relationship between each component of teachers' SRL competences: knowledge, beliefs, and motivation, and their instructional practices focusing on SRL.

Table 3

Pearson's Correlation Between Teachers' SRL Knowledge and Instructional Practices

Correlations		SRL Instructional Practices	SRL Knowledge
SRL Instructional Practices	Pearson Correlation	1	-.124
	Sig. (2-tailed)		.170
	N	123	123
SRL Knowledge	Pearson Correlation	-.124	1
	Sig. (2-tailed)	.170	
	N	123	123

Table 3 shows a Pearson correlation between teachers' SRL knowledge and their promotion of SRL from self-reports. The correlation was weak and negative (r = -.124, p < .01), which suggests that teachers who report high levels of SRL classroom implementation may not fully understand the concept. This corresponds with previous studies reporting mismatches between SRL knowledge and teaching practices, as knowledge alone does not directly lead to implementation (Karlen et al., 2020, 2023). One explanation from Zohar and Ben-Ari (2022) was that self-regulation is a broad umbrella concept involving several dimensions and strategies, which leads to challenges in connecting theories and practice.

The quantitative findings raised the question of why SRL knowledge emerged as the weakest predictor of instruction. Qualitative data help further explain this. Two main reasons emerged from the interview data. First, many teachers reported misconceptions about self-regulation, conflating it with learning autonomy or lifelong learning. This results in a shift in focus from teaching metacognitive strategies to emphasizing students' independence and individual choice. For example, "Poppy," a teacher interviewee, stated, "I tend

to think of SRL first in terms of autonomy. Autonomous learning, learning independently. I'm more familiar with these terms than self-regulation."

Second, many teachers reported that they mainly rely on their intuition or personal experience as successful learners when promoting self-regulation. This mainly includes planning and self-monitoring while working on a task. However, they tend to fail to connect their practice-based knowledge to the theoretical concept of SRL. This might explain the disparity in the findings, as teachers reported relatively high levels of SRL instruction, while showing only moderate to limited understanding of the concept in the knowledge test. The knowledge test had a total score range of 0-60, with 83.74% scored at the mid-level and 16.26% at the low-level.

Table 4

Pearson's Correlation Between Teachers' SRL Beliefs and Instructional Practices

Correlations		SRL Instructional Practices	SRL Beliefs
SRL Instructional Practices	Pearson Correlation	1	.357**
	Sig. (2-tailed)		.000
	N	123	123
SRL Beliefs	Pearson Correlation	.357**	1
	Sig. (2-tailed)	.000	
	N	123	123

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4 shows the association between teachers' beliefs about the value of SRL and their instructional practices. A Pearson correlation indicates a moderate, positive relationship ($r = .357$, $p < .01$). This suggests that as teachers place greater value on SRL, they tend to implement it more. The finding lends strong support to Dignath-van Ewijk's (2016) study, which found that teachers' beliefs are a stronger predictor of teaching practices than knowledge. However, since the relationship is not strong, other factors may also influence teachers' decisions to promote SRL in classrooms.

Interview data revealed a number of factors affecting teachers' decisions to integrate SRL into their teaching. These factors include curriculum requirements, administrative limitations, and a lack of training. For example, "Hydrangea," a teacher interviewee, expressed positive beliefs about SRL and provided a detailed explanation of the administrative constraints they faced:

I believe SRL is important… However, one reason I do not
teach it much is that sometimes we have to follow the course
syllabus. For example, if the course has 10 groups, each group
cannot be too different in teaching… There are many course
requirements we need to meet.

Table 5

Pearson's Correlation Between Teachers' SRL Motivation and Instructional Practices

Correlations		SRL Instructional Practices	SRL Motivation
SRL Instructional Practices	Pearson Correlation	1	.687[**]
	Sig. (2-tailed)		.000
	N	123	123
SRL Motivation	Pearson Correlation	.687[**]	1
	Sig. (2-tailed)	.000	
	N	123	123

**. Correlation is significant at the 0.01 level (2-tailed).

Regarding the relationship between teachers' SRL motivation and
instructional practices, a Pearson correlation showed a strong association (r
= .687, p < .01), suggesting that as teachers become more motivated to use
or teach SRL skills, they are more likely to implement them in the classroom.
This finding reinforces previous studies showing a positive association
between motivation and SRL teaching (Dignath, 2021; Karlen et al., 2020)
and indicates that motivation is a key predictor of teachers' SRL promotion
(Hirt et al., 2022).

Interview data extends our understanding of the issue, revealing that
teachers often consider students' language proficiency levels an important
factor in integrating SRL into lessons. As repeated in the interviews, teachers
tend not to include self-regulation when teaching high-proficiency students,
as these students are generally more independent and able to manage their
own learning. In contrast, lower-proficiency learners often need more
support from teachers to self-regulate their learning. For example, "Daisy," a
teacher interviewee, commented, "[SRL instruction] is especially important
when working with weaker students. Teaching students with limited skills is
particularly challenging and requires deeper thinking on how to help them
develop the ability to learn independently."

Table 6

Pearson's Correlation Between Teachers' Knowledge, Beliefs, and Motivation in SRL

Correlations

		Knowledge	Beliefs	Motivation
Knowledge	Pearson Correlation	1	.155	-.053
	Sig. (2-tailed)		.087	.560
	N	123	123	123
Beliefs	Pearson Correlation	.155	1	.563**
	Sig. (2-tailed)	.087		.000
	N	123	123	123
Motivation	Pearson Correlation	-.053	.563**	1
	Sig. (2-tailed)	.560	.000	
	N	123	123	123

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6 shows the relationships between the three dimensions of teachers' SRL competences.

Knowledge ↔ Beliefs

Teachers' knowledge and beliefs about SRL showed a weak positive correlation ($r = .155$, $p < .01$), suggesting that teachers with greater SRL knowledge have a slight tendency to value SRL more highly.

Knowledge ↔ Motivation

Knowledge and motivation showed a very weak inverse relationship ($r = -.053$, $p < .01$), indicating that SRL knowledge is not directly linked to motivation to promote it in the classroom.

Beliefs ↔ Motivation

A moderate to strong correlation ($r = .563$, $p < .01$) emerged between beliefs and motivation, which suggests that teachers who believe in SRL value tend to have higher motivation to implement it.

When considering the relationships within the construct of teachers' SRL competences, a Pearson correlation showed little to no positive association between SRL knowledge and beliefs, as well as between knowledge and motivation. However, interview findings presented a different picture, as many teachers admitted that having a limited understanding of the SRL concept made them refrain from using it. As "Hydrangea" stated, "If I'm not confident that I truly understand something, I don't feel confident teaching it either."

One plausible explanation is the difference between theoretical knowledge and practical knowledge. The interviews showed that unless knowledge is meaningfully integrated with practice, theoretical knowledge alone tends to have minimal impact on teachers' beliefs and motivation to implement SRL. For example, a teacher, "Violet," stated, "If there is going to be SRL training, I would like it to be done in the right way. The training should focus on how you can make SRL a part of your lesson, how to weave it seamlessly into your content." These findings could inform teacher development programs on integrating self-regulation into the curriculum.

As for the strong correlation between beliefs and motivation, the finding supports the Expectancy-Value Theory (Wigfield & Eccles, 2000), which argues that beliefs in task value enhance motivation. Teachers who believe in SRL's value are more likely to be motivated to apply it in both their classrooms and their own learning. This is in line with previous research showing that beliefs and motivation are intertwined and mutually reinforce SRL promotion (Karlen et al., 2023; Spruce & Bol, 2015).

Research Question 2

The findings for the second research question illustrate how Thai university EFL teachers incorporate self-regulated learning (SRL) into their instructional practices.

Overall Patterns of SRL Instructional Practices: Complementary Role of all four Components of SRL Instruction

Table 7

Pearson's Correlation Between Components of SRL Instruction

Correlations		Scaffolding of SRL	Explicit instruction	Implicit instruction	Diagnostic of SRL
Scaffolding of SRL	Pearson Correlation	1	.870[**]	.850[**]	.795[**]
	Sig. (2-tailed)		.000	.000	.000
	N	123	123	123	123
Explicit instruction	Pearson Correlation	.870[**]	1	.817[**]	.846[**]
	Sig. (2-tailed)	.000		.000	.000
	N	123	123	123	123
Implicit instruction	Pearson Correlation	.850[**]	.817[**]	1	.796[**]
	Sig. (2-tailed)	.000	.000		.000
	N	123	123	123	123
Diagnostic of SRL	Pearson Correlation	.795[**]	.846[**]	.796[**]	1
	Sig. (2-tailed)	.000	.000	.000	
	N	123	123	123	123

**. Correlation is significant at the 0.01 level (2-tailed).

Pearson's correlation coefficients showed strong positive relationships across all four teaching components supporting SRL, ranging from r = .795 to r = .870 (all significant at p < .01). Teachers reported interconnected practices in applying SRL in classrooms. In other words, when teachers use one SRL teaching practice, they typically also use the others.

The strongest correlation emerged between scaffolding and explicit instruction (r = .870, p < .01), suggesting that Thai EFL teachers who scaffold students' self-regulatory skills are very likely to provide explicit SRL instruction. This supports Dignath and Veenman's (2021) argument that explicit SRL instruction involves direct instruction and modeling of strategies, including explaining to students why these strategies are useful and when and how to use them, while scaffolding provides progressive support for students to gradually internalize SRL strategies. The correlation between explicit and implicit instruction was also high (r = .817, p < .01), suggesting that Thai EFL teachers reported using both teaching methods to support each other.

However, analysis of the qualitative interview data revealed important discrepancies between the quantitative and qualitative findings. Some interesting patterns of SRL instruction among Thai EFL teachers emerged from the thematic analysis, as follows.

SRL Implementation Despite Limited Conceptual Understanding

Quantitatively, teachers reported frequent use of all four SRL teaching components (scaffolding, explicit teaching, implicit teaching, and diagnosis of students' SRL) in self-reports, despite their limited performance on the SRL knowledge test, with 83.74% achieving mid-level scores and 16.26% low-level scores. When asked in-depth questions in the interview about how they implemented SRL in class activities, most teachers revealed their uncertainty about whether their implementations actually supported self-regulation. One explanation could be that teachers based their SRL instructions on two main sources—their own experience and lesson-driven materials.

Teachers' reliance on intuition and personal experience as self-regulated learners in promoting SRL supports existing literature (Karlen et al., 2020) and was repeatedly revealed in interviews. For example, Violet explained their reasons for introducing SRL in the classroom, "I was simply following my instincts about what should happen in the classroom. I see self-regulated learning as part of the natural process of learning."

Another key driver is lesson-driven SRL instruction. Teachers implement SRL more often when lessons include planning and monitoring steps, focus on learning strategies (e.g., step-by-step reading or writing checklists), or address relevant themes (e.g., *How to Overcome Weaknesses*,

Personal Growth and Self-improvement). "Lily," a teacher interviewer, noted that "[in a particular course], the tasks naturally lend themselves to student reflection." In addition, teachers also include SRL when tasks are complex and require careful planning and monitoring skills.

Yet, the decision to explicitly introduce self-regulated learning depends largely on student proficiency levels. As one teacher, "Sunflower," explained: "It really depends on the group of students I am teaching. If they are strong students, I probably would not need to ask them much—because they already know themselves well and can manage on their own."

All interviewees acknowledged possessing only limited or surface-level SRL conceptual knowledge. Most teachers could explain related concepts and objectives of SRL, but some held misconceptions; for instance, viewing SRL-support activities as separate steps rather than a cyclical learning process. Many associate SRL more with learning autonomy and lifelong learning than with strategic learning processes, reflecting a focus on empowering students to select their learning styles and develop learning responsibility rather than explicitly teaching metacognitive strategies. These findings have implications for professional development programs for pre-service and in-service teachers.

Implicit over Explicit SRL Instruction

Table 8

Descriptive Statistics of Teachers' SRL Instructional Practices

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Scaffolding of SRL	123	4.00	24.00	17.30	4.30
Explicit instruction	123	4.00	24.00	17.22	4.34
Implicit instruction	123	5.00	24.00	18.07	3.96
Diagnostic of SRL	123	4.00	24.00	16.47	4.68
Teachers' instructional practices	123	17.00	95.00	69.06	16.13

Overall, SRL instructional practices had a mean score of 69.06 out of 95 points (approximately 73% of the maximum), reflecting moderate to high levels of SRL instruction. The standard deviation of 16.13 suggests considerable variability, likely because the sample included EFL teachers who teach a wide range of English courses and university students of all proficiency levels.

Among the four components of SRL instruction, implicit instruction had the highest mean (M = 18.07), while diagnostic practices had the lowest mean (M = 16.47). All ten interviewed teachers emphasized implicit rather than explicit instruction to support self-regulation, aligning with previous research showing that SRL is predominantly promoted through implicit instruction (Dignath & Büttner, 2018; Dignath & Veenman, 2021; Rosenthal et al., 2024; Spruce & Bol, 2015).

Interview data partly support this pattern, as nine out of ten teachers reported usually including classroom activities that support some stages of the SRL process, primarily for lesson-driven reasons. Many lessons incorporate self-regulation components such as clear task goals, planning steps, and self-monitoring checklists. However, the differences lie in teachers' uncertainty about what counts as SRL instruction and their teaching approach. Most teachers support self-regulation in classrooms implicitly, such as by mentioning the stages present in the materials and reminding students to complete the stages without further explanation.

Another clear mismatch between quantitative and qualitative data was the gap between implicit and explicit teaching reported in the two instruments. According to the self-reports, teachers identified relatively similar levels of implicit (M = 18.07) and explicit (M = 17.22) teaching of SRL, while the interviews reflected a much larger gap. All teachers mentioned that their SRL instruction was primarily implicit, with little to no explicit instruction on self-regulated strategies. This highlights the limitation of using self-reports as instructional measures and emphasizes the importance of interviews in data validation.

Teachers' preference for implicit instruction stems from two main sources. First, their limited background in SRL concepts leads them to avoid explicit instruction of the SRL process and learning strategies. Second, many believe that SRL strategies are linked to individual preferences, which reduces their motivation to model self-regulatory strategies for students. For example, Violet stated, "My [SRL] instruction does not focus on learning strategies because strategies are highly individualized. Some students may like certain strategies, while others prefer different ones."

Several teachers also believe that self-regulation occurs naturally or intuitively during task performance, making explicit instruction of learning strategies less essential, especially for higher education students with extensive learning experience. For example, a teacher, "Tulip," commented:

> I believe that learning strategies are something people naturally have or already know to some extent… Therefore, I tend to assume that most of the students I teach have been in the education system for at least 15 years, so they should already have some way of managing their own learning.

This raises an important issue regarding SRL instruction. Teachers may intuitively assume that self-regulation skills can develop naturally in learners, as existing literature indicates that successful learners have developed self-regulation skills (Zimmerman, 2002), with some acquiring them naturally. However, research also indicates that university and adult learners also need SRL instruction since, in reality, students in higher education demonstrate varying levels of self-regulation (Evans et al., 2024). Self-regulation is essential for university students, as higher education requires greater learner autonomy to manage increasingly challenging and advanced tasks. Therefore, supporting students to become self-regulated learners who can set realistic goals, plan, monitor, and reflect on their performance is crucial for their academic success.

Limited Attention to the Reflection Stage

The interviews revealed that teachers usually include the *Planning* and *Performance phases* of SRL in their teaching practices, as many lessons incorporate goal setting, planning, and monitoring in task requirements. They tend to emphasize the *Planning* and *Performance phases* over the *Reflection phase*, primarily due to limited class time and curricular constraints. For example, Tulip stated, "SRL has its own phases… if I were to cover the entire process…, it would be quite time-consuming. And the content in each lesson is already packed, so I think time might be one of the limiting factors. "

Some teachers expressed concern about time constraints and the practical implementation of SRL. They noted that, due to limited class time, not all students could reflect on their performance during class. Some teachers ask a few students to verbally share their reflections with the class, but this stage is not done regularly.

This limited attention to the *Reflection* stage is evident in both quantitative and qualitative data, though the gap size differs. Similar to the gap between implicit and explicit teaching reported quantitatively, the diagnostics of students' SRL was found to be the least implemented area (M = 16.47), slightly behind other teaching components according to the questionnaire results. However, the interviews revealed much larger gap as most teachers reported little attention to this stage. One interesting reason revealed from the interview was that some teachers view SRL stages as separate units rather than a cyclical process. For example, "Lilac," a teacher interviewee, mentioned:

> "Self-reflection in class may be done, but its benefits are too brief. …Although students can see their progress, this stage comes at the end of the unit. And next week, they must move

on to another topic, so it is like a cut. [The benefits of self-reflections] are not connected throughout the semester."

Altogether, the findings highlight the need for teacher training that focuses on connecting theories and practice, particularly on how to design tasks that integrate self-regulation. Teachers need to understand the role of the cyclical model, in which each phase can be linked to another phase within the same or the next cycle. Diagnosing students' SRL is linked to the *Reflection* phase. Students evaluate their performance against goals, and if mismatches occur, they may adapt their strategies for completing the current task or for planning future tasks in the *Forethought* phase of the next SRL cycle (Zimmerman, 2000). Omitting this step can limit learning opportunities and hinder successful outcomes in subsequent cycles.

Ambiguity between Cognitive and Metacognitive Strategies

Another missing element in the SRL process is the explicit teaching of SRL strategies. Teachers primarily rely on lesson-driven strategies and their own experiences when introducing learning strategies. As shown in the interview, there is some overlap in how teachers perceive cognitive and content-focused strategies and the metacognitive strategies required for self-regulation.

Many teachers are uncertain whether the strategies they teach are self-regulated, and some view cognitive strategies, such as language learning and content-focused strategies, as SRL strategies. Additionally, when lessons do not require it, most teachers tend not to teach metacognitive strategies (planning, monitoring, and reflecting). When the lesson lends itself to SRL strategies, teachers typically introduce these strategies implicitly by following the steps present in the lessons, such as reviewing task goals and planning steps in the instructions together or having students complete the monitoring checklist independently.

While cognitive strategies help students solve a language task, metacognitive strategies focus on one's own thinking process rather than on content for task completion (Dignath & Veenman, 2021). Examples of metacognitive strategies include: (1) setting specific learning goals (which are not necessary task goals), activating prior knowledge, and planning and selecting appropriate strategies before a task (*Planning* stage); (2) checking comprehension during a task, asking oneself clarifying questions, tracking progress towards a goal while working, and adjusting strategies (*Monitoring* stage); and (3) evaluating one's performance against a goal, reflecting on strategies used, and considering what to change in future tasks (*Reflection* stage).

Explicit instruction of metacognitive strategies helps students understand how they approach a task, why and how to apply certain learning strategies, and what aspects should be adjusted in future tasks. The goal of teaching metacognitive strategies is to help students internalize them so they can independently plan, monitor, evaluate, and regulate their own learning (Pintrich, 2000). The findings support previous studies showing that although teachers recognize the benefits of SRL strategies, they rarely provide explicit instruction in them (Dignath & Büttner, 2018; Dignath & Veenman, 2021; Spruce & Bol, 2015). Additionally, the results highlight the need for SRL training that focuses on modeling self-regulated strategies.

Reported Challenges in SRL Implementation

Data from the interviews revealed a number of challenges in SRL implementation. Most teachers rely on lesson requirements to integrate SRL into their lessons. However, their self-initiated SRL instruction is often hindered by unfamiliarity with the theory, practical application of the concept, time constraints, and examination-driven lesson requirements. Many teachers feel obliged to prioritize course content within the limited class time.

As shown in the interviews, teachers reported that students primarily focus on achieving high scores and preparing for test-related content; therefore, students often show limited motivation to participate in activities beyond the lesson objectives. For example, Lilac explained the main reason for not using SRL in teaching as much: "I do not think the students have the motivation to go beyond the lesson scope. I feel like they just want good grades—and honestly, I cannot blame them for that." This response exemplifies the perception of SRL as somewhat separate from lesson content and the goal of achieving good grades. This finding supports Ruiz and Panadero (2023), who highlighted the scarcity of training in SRL practices; this remains significantly underrepresented in higher education teachers' professional development.

It is essential that teachers explicitly communicate to students that SRL is an integral part of their learning process and that SRL skills enhance their learning outcomes (Brenner, 2022). In other words, SRL strategies should not be viewed as separate from course content and objectives, but rather as essential skills that promote more effective learning.

Implications for Teacher Development and Policy

Both quantitative and qualitative data highlight the need for professional development programs that focus more on the practical implementation of SRL concepts in classrooms rather than on theoretical

concepts alone. In Thai higher education contexts, where time constraints and demanding syllabi are important factors, teacher training programs may emphasize workshops that provide practice time for teachers to integrate self-regulation into existing classroom activities. This can be achieved through practical training such as designing SRL-integrated lesson plans, mapping classroom activities to SRL stages, identifying metacognitive strategies required for learning tasks, modeling strategies, and practicing think-aloud techniques. The key point is to help teachers understand that self-regulation is a cyclical process leading students to their learning goals and can be integrated into lessons, rather than being treated as an extra unit of study.

The findings also have implications at a policy level. In Thai higher education, learning autonomy, learner-centered classrooms, and lifelong learning are prioritized. Self-regulation should be presented as a set of essential skills that learners use to achieve their goals as autonomous learners. Therefore, policymakers should encourage teachers to integrate SRL into existing curricula and syllabi as a necessary skill set for students' academic achievement.

Limitations of the Study

The study relies primarily on teachers' self-reports of SRL teaching practices collected through questionnaires and interviews. The main limitations of using self-reports to measure instruction are teachers' recall of practices rather than being directly observed, and the potential for socially desirable responses, which need to be validated through other instruments, such as interviews. Additionally, although the 50-item questionnaire covers all aspects of SRL professional competences and instructional practices based on Karlen et al.'s (2020) framework, there are some aspects of teachers' SRL competences and instructions that need further detailed exploration, which may require more items than those currently included in the questionnaire. However, an overly long and demanding questionnaire could adversely affect respondents' focus when answering questions. Overall, the need for a more elaborate version of the questionnaire could be another limitation of the study.

Recommendations for Future Research

This study included EFL teachers at the university level without distinguishing specific areas of English teaching. The findings present an overall picture of EFL teachers' SRL competences and instruction. However, the nature of specific English courses, such as English for Specific Purposes (ESP), English for Academic Purposes (EAP), English for career

development, English literature, and English translation, may reveal different perspectives on the need for and dimensions of self-regulation. Therefore, it would be valuable for future research to examine teachers' and learners' SRL in specific English programs. In addition, future studies may consider using classroom observation of teachers' instruction along with student interviews to provide a more complete picture of SRL promotion in classrooms. Finally, future research could extend this work through cross-cultural comparisons across ESL and EFL contexts or different educational cultures.

Conclusion

This study was conducted to examine the relationship between SRL professional competences and instructional practices among Thai EFL teachers at the university level, as well as how they implement SRL in their teaching. Results from online questionnaires completed by 123 teachers and 10 individual interviews indicated a moderate relationship ($r = .474$, $p < .01$) between teachers' overall SRL competences and their self-reported SRL instruction. When examining each dimension of SRL competences, teachers' SRL knowledge weakly and negatively correlated with their SRL instruction, while beliefs in SRL values moderately correlated with teaching. Only motivation in SRL showed a strong relationship with SRL instructional practices. This highlights that conceptual knowledge alone does not lead to practice; instead, motivation plays a more significant role in influencing practices. Qualitative data provide more details to explain the patterns shown in the quantitative findings and highlight some contrasting pictures between self-reported instruction and actual implementation. Regarding the second research question, quantitative results showed the complementary role of all four areas of SRL instructional practices, with a higher prevalence of implicit teaching and the least implementation of diagnostics of students' SRL. However, the interview data revealed much larger gaps between implicit and explicit instruction, as well as the inclusion of the *Reflection* stage in the SRL process. Additionally, important issues in SRL instruction identified in the interviews were discussed, highlighting the need to include practical training and modeling of SRL use in classrooms as part of EFL teachers' professional development.

About the Author

Pajaree Nipaspong: A language instructor at the Chulalongkorn University Language Institute, Thailand. She holds a PhD in English Instruction. Her research interests include self-regulated learning (SRL), corrective feedback,

and English instruction, with a focus on promoting learner autonomy and effective language teaching practices in EFL contexts.

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