EFL Teachers' Metacognitive Awareness as a Predictor of Their Professional Success

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Abstract—Metacognitive knowledge increases EFL students' ability to be successful learners. Although this relationship has been investigated by a number of scholars, EFL teachers' explicit awareness of their cognitive knowledge has not been sufficiently explored. The aim of this study was to examine the role of EFL teachers' metacognitive knowledge in their pedagogical performance. Furthermore, the role played by years of their academic education and teaching experience was also studied. Fifty female EFL teachers were selected. They completed Metacognitive Awareness Inventory (MAI) that assessed six components of metacognition including procedural knowledge, declarative knowledge, conditional knowledge, planning, evaluating, and management strategies. Near the end of the academic semester, the students of each class filled in 'the Language Teacher Characteristics Questionnaire' to evaluate their teachers' pedagogical performance. Four elements of MAI, declarative knowledge, planning, evaluating, and management strategies were found to be significantly correlated with EFL teachers' pedagogical success. Significant correlation was also established between metacognitive knowledge and EFL teachers' years of academic education and teaching experience. The findings obtained from this research have contributing implication for EFL teacher educators. The discussion concludes by setting out directions for future research.

Keywords—Metacognotive Knowledge, Pedagogical Performance, Language Teacher Characteristics Questionnaire, Metacognitive Awareness Inventory.

I. INTRODUCTION

SEVERAL recent studies have revealed that successful EFL students employ metacognitive strategies to direct their attention, monitor their interpretation, and problem-solve. Research on metacognitive behaviors in language learners has held some significant promise for SLA. However, limited research has explored EFL teachers' explicit awareness of their cognitive knowledge. Teachers' metacognitive knowledge can provide for insights about teaching language and developing expertise in ELT.

Language teacher educators and applied linguists have emphasized that well-managed lesson plans that include introductions, detailed description of content, teacher-directed questions, and independent practice are strongly associated with students' achievement. Teacher education offers a variety of classroom methods and techniques to trainee teachers, but it doesn't make certain teachers to understand when, why, and how to use them. As [1] put this "What works?" view into doubt, effective classroom teaching is not limited to

procedural methods and techniques because real classrooms produce unpredictable situations requiring immediate decisions rather than established procedures. That is, the appropriate and professional application of procedures that work is one dimension of sophisticated teaching and their engagement in complex mental activity involving metcognitive thinking or innovation is another one.

According to [2] metacognition enables awareness and control over how teachers think about teaching and self-regulate teaching activities with respect to students, goals and situation. It also equip the teachers about what information/skills they have, when, why and how to use them. Teachers need to think metacognitively to effectively run teaching and use instructional techniques strategically. Reference [3] argues that language lessons are dynamic in nature, to some extent unpredictable, and characterized by constant change. Teachers therefore have to continuously make interactive decisions that are appropriate to the specific dynamics of the lesson they are teaching. Studies of effective teachers and not specifically effective language teachers would suggest that teachers do engage in metacognitive actions. Such studies emphasize that teachers daily confront unanticipated situations requiring immediate decisions.

Despite its importance, the issue of language teachers' metacognition is often not addressed openly in the literature. Most of research conducted about metacognition focuses on language learners' thinking and learning processes. It seems obvious that language teachers need to be in touch with their knowledge control and awareness of their own thinking and learning process. Due to its importance in the process of education, the present study was conducted to assess the metacognitive awareness of language teachers and to what extent it can promote their success in instruction. The study is significant as it deals with questions like how metacognitive awareness of language teachers can affect their pedagogical effectiveness and to what extent reflective or metacognitive teaching is influenced by EFL teachers' years of teaching experience and years of academic education.

II. LITERATURE REVIEW

A. Metacognition

Metacognition usually emphasizes "thinking about one's thinking" and regulation of that thinking [4], [5]. According to [6], metacognition includes self-regulation, strategic control and the self-correction of actions. Applied to students, metacognition is often described in terms of learning new content or concepts or acquiring and refining the use of learning strategies [7]. It is assumed that teachers'

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metacognition, however, is much more complex [8]. While teachers, like students, need to monitor and regulate their cognitive activity and must be strategic when they attempt to solve a problem, teachers have the additional tasks of promoting content learning, identifying appropriate strategies, making moment- to-moment decisions to ensure students' learning, adjusting for individual differences, and much more. Metacognition enables teachers to self-regulate their teaching activities, depending upon the specific students, goals and situation.

Metacognitive teaching means that teachers think about their own thinking regarding teaching goals, teaching strategies, sequence of lesson, teaching materials, students' characteristics and needs, and other issues related to course, instruction and assessment before, during and after lessons. Metacognition in teaching also includes knowing what instructional strategies are in teacher's repertoire, what they entail, when and why to use them, and how to apply them. This type of metacognition is needed for effective planning of a lesson, for switching gears during or after a lesson upon awareness that a teaching approach isn't working as expected, and selecting alternative approaches [2]. Teaching metacognitively can improve classroom communication and facilitate academic performance. Metacognitive teaching not only benefits students, but also increases the teacher's own learning and motivation.

B. Effective Teaching

Effective teaching is not a unitary concept; rather, it is a complex construct encompassing many attributes such as teachers' experience and competence, psychological factors like self-esteem, motivation and attitude, institutional resources and constraints, and the cultural values of the educational system. Much of the research on effective teaching was conducted from the 1960s to the 1980s, using the *process-product approach* to educational research [9] (i.e., documenting classroom processes in order to connect them empirically to learning outcomes). Definitions of effective teaching have changed somewhat over time. Reference [10] defined teacher competence as the teacher' ability to display different behaviors depending upon social context within which they are operating to produce empirically demonstrated effects approved by those in the environment. Reference [10] also defined teacher effectiveness as the ability of a teacher to create agreed-upon educational effects in a specific situation or context.

There are some findings about effective teaching, however, in both general education and language education, which can inform the teacher evaluation process. Over the years, research in general education has found that teachers whose students learn more than other teachers' students display certain behaviors, attitudes, and skills in common. Citing an early synthesis by [11], [12] summarized related literature on effective teaching and pointed out clarity, use of varied materials and methods, enthusiasm, a task-oriented, businesslike approach to teaching, avoidance of harsh criticism, an indirect teaching style, emphasizing content

covered on achievement tests, using structuring statements to provide an overview for what is about to happen or has happened, and use of questions at many cognitive levels are the main characteristics of successful teachers.

Based on the model proposed by [13] to portray successful teacher qualities, three groups of features influence on teacher success: personal qualities (e.g. caring for students, enthusiasm, self-reflection, attaching importance to moral education and having a positive influence on students' values and attitudes, and holding individual teaching beliefs), professional qualities (e.g. classroom management, and knowledge of the subject matter), and contextual features (e.g. personal context, school context, and context beyond school). What makes their model different from the previous ones is their emphasis on the significance of cognitive and metacognitive skills such as critical thinking as self-reflection and a concern with the context of teaching.

Recent insights into effective language teachers have emphasized irreducibility of human relations to programmatic routines. Consequently, effective teachers have been recently described in "metacognitive" terms. Reference [14], for instance, says effective teachers possess "adaptive metacognition." Others use similar terms. Reference [15] describes what effective teachers do as "adaptive expertise"; [16] calls it "response-based instruction"; [17] calls it "thoughtfully adaptive teaching"; [18] calls it "reflective adaptation," and [19] refers to it as "wise improvisation." All of the above describe teachers as effective in large measure because they frequently and deliberatively engage in conscious, mindful action as well as technical or procedural routines.

III. METHODOLOGY

Upon what was noted about the influential role of teachers' metacognitive awareness in their pedagogical behaviors, investigating the relationship between teachers' metacognitive awareness and their professional success, and the question of how much teachers' metacognitive awareness contributes to the prediction of their success becomes a paramount inquiry for EFL researchers. Keeping in view the research objectives and thorough review of research literature on metacognition, the following questions were developed:

1. Is there any relationship between EFL teachers' metacongitive awareness and their pedagogoical effectiveness?
2. Is there any relationship between EFL teachers' Metacognitive awareness and their academic education?
3. Is there any relationship between EFL teachers' Metacognitive awareness and their teaching experience?

A. Participants

Fifty female Iranian EFL teachers (mean age = 26.78 years; SD = 4.8; range = 25–40 years) who varied in their ELT experience from 2 to 17 years were selected. They all had majored in TEFL. Twenty four teachers had a BA and twenty six a PhD. The second group of participants comprised of 417 Iranian EFL learners, ranging in age from 17 to 41 (students of

the above-mentioned teachers). The number of students who provided such measures for each teacher ranged from 8 to 21 from one class or three classes.

B. Materials

There have been a number of attempts to measure the construct of metacognition [20]; after an extensive literature review the Inventory of Metacognitive Awareness developed by [21] was adopted and applied to acquire the data as it is claimed to be a reliable and valid instrument (r = 0.89).

The original inventory represents two factors of metacognition, i.e. knowledge of cognition and regulation of cognition. Knowledge of cognition or metacognitive knowledge refers to knowledge about self and about learning strategies as well as knowledge about when, why and how to use these strategies. Within the knowledge component were statements of declarative knowledge (knowledge about self and strategies), procedural knowledge (knowledge about strategy use), and conditional knowledge (when and why to use strategies). The regulation of cognition refers to the control aspect of learning such as planning (goal setting), management strategies (organizing), comprehension monitoring, debugging and evaluation (analysis of performance and strategy effectiveness). The original inventory consisted of 52 items representing these components. The Inventory of Metacognitive Awareness is a total 52-item of inventory, and each item rated on 5-Point Likert type scale which ranges from "1-always true" to "5-always false" to report respondents' level of agreement with 52 items. However, the inventories used in the present study consisted of 6 components as comprehension monitoring and evaluation were merged and the number of items was reduced to 40.

The 'Characteristics of Successful Iranian EFL Teachers Questionnaire' (CSIET) [22] was applied to evaluate language teachers' pedagogical success. It is a 47-item questionnaire on characteristics of successful Iranian EFL teachers measuring twelve constructs as accountability, interpersonal relationships, attention to all, examination, commitment, learning boosters, creating a sense of competence, teaching boosters, physical and emotional acceptance, empathy, class attendance, *Dynamism*. In this study, the total reliability of the questionnaire is very high (Cronbach's alpha was 0.92).

IV. Data Analysis

To ensure the normality of the distribution, descriptive statistics were employed. To determine the role of teachers' metacognitive awareness in their pedagogical success a Pearson product moment correlation was applied to the data. To examine the relationships between teachers' metacognitive awareness, their teaching experience and years of academic education, a Pearson product-moment correlation was performed as well. In order to find out to what extent metacognitive awareness might have as a predictive power in predicting teachers' success, a regression analysis was run.

V. Results

Table I summarizes the descriptive results of the two instruments- metacognitive awareness and pedagogical success questionnaires used in this study.

TABLE I
DESCRIPTIVE STATISTICS OF METACOGNITIVE AWARENESS AND SUCCESS

	N	Minimum	Maximum	Mean	Std. Deviation
Metacognitive Awareness	50	36.00	188.00	120.0200	45.22979
Pedagogical Success	50	18.00	120.00	81.5200	30.28722

A Pearson product-moment correlation was applied to estimate the correlation between teachers' metacognitive awareness and their pedagogical success. A significant correlation was revealed between EFL teachers' success and their total scores in metacognitive awareness (r = 0.702, p< .01).

When a Pearson correlation, however, was applied to the data of EFL teachers' success and the six components of the total metacognitive awareness scale (procedural knowledge (F1), declarative knowledge (F2), conditional knowledge (F3), planning (F4), evaluating (F5), and management strategies (F6)), the results showed a significant relationship between success and five components:1) success and F1 (r = 0.350, p< .01), 2) success and F2 (r = 0.667, p< .01), 3)success and F3 (r = 0.347, p< .01), success and F4 (r = 0.654, p< .01), success and F5 (r = 0.650, p< .01) and success and F6 (r = 0.642, p< .01) (See Table II).

TABLE II
THE RESULTS OF CORRELATION BETWEEN EFL TEACHERS' MA AND THEIR SUCCESS

	F1	F2	F3	F4	F5	F6	Total MA
PS	0.323	0.667**	0.347	0.654**	0.650**	0.642**	.702**

**. Correlation is significant at the 0.01 level (2-tailed).
MA: Metacognitive Awareness; PS: Pedagogical Success.

Table III displays regression analysis indicating that teachers' total score of metacognitive awareness is a positive predictor of the dependent variable (teachers' success).

TABLE III
THE RESULTS OF REGRESSION ANALYSIS FOR TEACHERS' MA AND THEIR SUCCESS

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. error	Beta		
1 (Constant)	25.072	8.813		2.845	.007
MA	.470	.069	.702	6.836	.000

a. Dependent Variable: Pedagogical Success; MA: Metacognitive Awareness

Table IV illustrates the model summary statistics. The results reveal that the model containing the total scores of metacognitive awareness can predict 49 percent of the teachers' success. The R value is 0.7 indicating the correlation coefficient between teachers' metacognitive awareness and their success. About 22% of the variation in teachers' success

can be explained by considering their metacognitive awareness as its square value is 0.48.

TABLE IV
R SQUARE TABLE FOR MA AS THE PREDICTOR OF TEACHERS' SUCCESS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.702[a]	.493	.483	21.78252

a. Predictors: (Constant), Metacognitive Awareness (MA)

Furthermore, the correlation coefficient between the set of independent variables, i.e. six components of metacognitive awareness, and the dependent variable, i.e. the teachers' pedagogical success, has an approximate value of 0.7 which, as the table of ANOVA (Table V) reflects, is statistically significant.

TABLE V
ANOVA[A]

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	22173.529	1	22173.529	46.732	.000[b]
1	Residual	22774.951	48	474.478		
	Total	44948.480	49			

a. Dependent Variable: pedagogical success
b. Predictors: (Constant), metacognitive awareness

To examine the relationship between language teaching experience and teachers' metacognitive awareness, a Pearson product-moment correlation was run. The findings indicated that there are significant correlations between teachers' years of teaching experience and their metacognitive awareness (r = 0.393, p< .01), teachers' teaching experience and F2 (r = 0.391, p< .01), teachers' teaching experience and F3 (r = 0.378, p< .01), and teachers' teaching experience,), teachers' teaching experience and F4 (r = 0.354, p< .01) and F6 (r = 0.380, p< .05) (See Table VI).

TABLE VI
THE RESULTS OF CORRELATION BETWEEN EFL TEACHERS' YEARS OF TEACHING EXPERIENCE AND THEIR METACOGNITIVE AWARENESS

	F1	F2	F3	F4	F5	F6	Total MA
YTE	0.202	0.391[**]	0.378[**]	0.354[**]	0.217	0.380[**]	.393[**]

MA: Metacognitive Awareness; YTE: Years of Teaching Experience

The group of teachers was divided to a group of twenty four BA holders (between 4-5 years of academic education) and a group of twenty six teachers having a PhD (between 14-16 years of academic education). A Pearson product-moment correlation was also employed to see whether years of academic education in TEFL plays a role in enhancing teachers' metacognitive awareness. The results showed that there is a significant correlation between teachers' years of academic education and their metacognitive awareness (r = 0.801, p< .01). However, it was revealed that there is a significant relationship between years of academic education and F3 (r = 0.511, p< .01), F4 (r = 0.667, p< .01) and F6 (r = 0.722, p< .01).

TABLE VII
THE RESULTS OF CORRELATION BETWEEN EFL TEACHERS' YEARS OF ACADEMIC EDUCATION AND THEIR METACOGNITIVE AWARENESS

	F1	F2	F3	F4	F5	F6	Total MA
YAE	0.301	0.291	0.511[**]	0.667[**]	0.295	0.722[**]	.801[**]

MA: Metacognitive Awareness; YAE: Years of Academic Education

VI. DISCUSSION AND CONCLUSIONS

The relationship between Iranian EFL teachers' metacognitive awareness and their pedagogical success was investigated in the present study. This study suggests that metacogniton, measured by the Inventory of Metacognitive Awareness, tends to have a positive significant relation with the dependent variable, i.e. professional success of EFL teachers. The results of some investigations substantiate that teachers' metacognitive awareness can promote successful accomplishment of their professional tasks; however, the participants were teaching science or mathematics. To our knowledge, similar studies that examine this relationship in foreign language teaching context have not been conducted.

It was also found that despite the relatively high correlation between EFL teachers' metacognitive awareness and their pedagogical success, only four of the five components of metacognitive awareness, namely declarative knowledge, planning, evaluating, and management strategies correlate significantly with pedagogical success. Regarding the second research question - the relationship between EFL teachers' metacognitive awareness and years of teaching experience - the results indicate a positive correlation. In other words, teachers' metacognitive awareness tends to increase with additional years of teaching experience. The results suggest that teaching experience is an important factor in the way metacognitive awareness affects instructional success. The third research question investigated whether EFL teachers' years of academic education plays a role in increasing their metacognitive awareness. The present study addresses this issue directly by presenting empirical data comparing metacogniton in teachers educating 4-5 years at the university with those educating 14-16 years at the university. It was found that teachers with more years of academic education are metacognitively more aware.

It is concluded that language teachers who are more aware of cognitive knowledge can help students make accurate self-evaluation of their learning. Simply stated, these teachers know explicit teaching and labeling of metacognitive knowledge about different general strategies for reading comprehension or writing and thinking and problem solving as acceptable and essential. For example, as the students engage in a post reading task, the teachers can make an occasion when metacognitive knowledge comes up. Making the discussion of metacognitive knowledge part of the everyday discourse of the classroom helps foster a language for students to talk about their own cognition and learning. The shared language and discourse about cognition and learning among peers and between students and teacher helps students become more aware of their own metacognitive knowledge as well as their own strategies for learning and thinking. As they hear and see

how their classmates approach a task, they can compare their own strategies with their classmates' and make judgments about the relative utility of different strategies. This type of discourse and discussion helps makes cognition and learning more explicit and less opaque to students, rather than being something that happens mysteriously or that some students "get" and learn and others struggle and don't learn.

It can be argued that one of the reflections of teachers' metacogntive awareness in a classroom is the modeling of strategies, accompanied by an explanation of them. For example, as the teacher is solving a problem for the class, he might talk aloud about his own cognitive processes as he works through the problem. This provides a model for students, showing them how they use strategies in solving real problems. In addition, the teacher also might discuss why he is using this particular strategy for this specific problem, thereby also engaging students in issues concerning the conditional knowledge that governs when and why to use different strategies. A language teacher may have all kinds of implicit knowledge about strategies and when and why they are appropriate to use; however, students often lack the means to gain access to this knowledge. If the knowledge is never shared through discussion, modeling, or explicit instruction, it is difficult for students to learn.

The findings of this study may support the inclusion of metacognitive awareness courses in language teacher training curricula. The same study can be conducted to find the effects of teachers' sex on this relationship. In addition, the participants in this survey consisted of only fifty EFL teachers, which imply the need for follow-up research with more participants. Future research could also explore how language teachers can be educated to teach metacognitively as part of their professional training. Regarding the relationship between teaching experience and metacognitive knowledge, further research is needed to ascertain the role of experienced teachers as mentors in language teacher training programs.

In sum, metacognition plays an important role in teaching, learning, social cognition, attention, self-discipline, problem solving, communication and personality development. Knowledge of learning process will not guarantee good teaching, but, without it, teaching is simply a routine habit and trial and error procedure, many of which can be harmful to the students. An understanding of learning process and learners, will put the ELT teacher in a better position to decide what can be done and how, what will not work and why.

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