Teacher Metacognition: An Investigation into Iranian EFL Teachers

Linguistics

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Abstract

Unfortunately, fewTeacher Training Centers (TTC) have adequately incorporated metacognition or simply thinking about thinking into their teacher education programs. The reason might be that the role of metacognition in regulating the teaching and learning processes is not yet fully understood by policy makers and educators. The purpose of this study is to investigate the role of metacognition in TTC programs for English language teachers. In so doing, a sample of 131 male and female experienced and inexperienced teachers of English as a Foreign Language (EFL) with an age range of 25-50 from the North of Iran wasrandomly selected to participate in this study. A validated Teachers' Metacognition Scale (TMS) questionnaire was utilized to measure teachers' awareness of four metacognitive factors, namely pedagogical, declarative, procedural, and conditional ones. The results indicated that teachers' metacognitive awareness of teaching processes has poorly been used in the EFL context. To conclude, the TTC authorities need to realize the implication of metacognition in the teacher education programs and to afford more opportunities for metacognitive practice in enhancing teachers' metacognitive awareness of teaching processes.

1. Introduction

A general consensus has been reached among educators that metacognition has an indispensable part to play in effective teaching and learning (Efklides, 2006; Flavell, 1979; McCrindle& Christensen, 1995; Nashon, Anderson, & Nielsen, 2005; Nelson, 1996; Paris &Winograd, 1990). To educate effective teachers in EFL teaching rising teaching issues are essential. Both the general and specific problem solving strategies can be considered as one of the issues. Given the EFL teachers the opportunity of being aware of such issues can be of a tremendous help to them to raise insights regarding the effectiveness of their teaching approaches. Being conscious and aware of teaching performance enables teachers to come up with lots of approaches regarding teaching improvement and learning outcomes.

Clearly enough, there are substantial metacognitive strategies which increase EFL learning in the classrooms and teachers' awareness and recognition of such strategies will facilitate and increase EFL learners' outcomes. The teachers who demonstrate metacognitive strategies in their teaching performance are better and effective teachers. On the other hand, knowledge regarding metacognitive skills (planning, monitoring, and evaluation) help teachers improve their teaching competency. In order to create a metacognitive culture in the EFL classroom context professional metacognitive teachers are required. According to the International Encyclopedia of Teaching and Teacher Education are categorized as follow:

a) Cognitive-based teaching competencies,
b) Performance-based teaching competencies,
c) Consequence-based teaching competencies,
d) Exploratory competencies,
e) Managerial teaching competencies,
f) Affective teaching competencies.

That is, modern teacher education program provided opportunities to improve and develop teachers' teaching principles and approaches practically. However, most English teachers have hardly undergone well

trainings and instructions for teaching English in many local areas in Iran. Therefore, to overcome the problem researchers such as Zeichner and Noffke (2001) shared the idea that a meaningful professional development for in-service teachers is essential.The present study aims to investigate whether metacognition has any place in teacher education centers in Iran.

2. Literature review

This section discusses issues related to the topic of the study briefly.

2.1. Metacognition

Since metacognition is considered as 'holy grails of education', there is a growing interest in using metacognition in teaching and learning performance. It is the first and main step which enables people to perform a task independently and individually. The term 'metacognition' simply can be defined as thinking about thinking or cognition about cognition. Flavell first introduced and defined the term metacognition as "knowledge concerning one's own cognitive processes and products or anything related to them" (1976, p.232).That is, metacognition is one's active control over his thinking process while doing problem-solving activities.
Flavell (1979) categorized metacognition into three different kinds of metacognitive knowledge:

A. *Person Knowledge* which is defined as ones' knowledge of his/her strength and weakness in doing specific kinds of tasks. This knowledge comprises self-efficiency, task completing goals, and interest and value of the task,
B. *Task Knowledge* which is knowledge about different kinds of tasks,
C. *Strategy Knowledge* which is knowledge of various strategies and appropriate usage of them for a specific task. It involves rehearsal, elaboration, and organization.
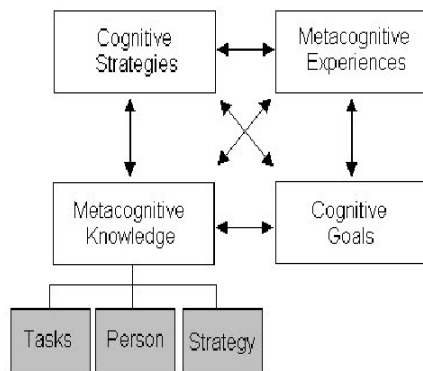

Figure 1**:** Flavell's model of metacognition (1981, p.40)

Despite the strong theoretical studies, many teachers lack sufficient and practical knowledge of metacognition (Veenman, Hout-Wolters & Afflerbach, 2006). A teacher's metacognitive instruction may be influenced by his/her individual understandings of what it means to teach metacognition (Baylor, 2002). That is to say, to teach students to be metacognitive, teachers' pedagogical understanding of metacognition is absolutely essential. Researches indicated that teachers' knowledge of metacognition has a great impact on pedagogical understanding of metacognition, and those teachers who has detailed and deep understanding of metacognition believe that metacognitive instruction to the students requires highly understanding of metacognition and its thinking strategies (Wilson &Bai, 2010). According to Wilson and Bai (2010), pedagogical understanding of

metacognition is teachers' ability in understanding of appropriate situation to implement teaching techniques and instruction of strategies in order to achieve the teaching goals.

Introduction of teaching and learning metacognitive strategies in new language Teacher Training Center can lead to development in teachers' teaching awareness which itself leads to students better learning "… because teachers are central mediators in what and how students learn in their classrooms, strengthening teacher learning will improve student learning" (Freeman, 2001, p. 608).

2.2.Teachers' Metacognition

According to NCTE (1998), teacher is the most critical factor in educational settingsbecause implementation of educational process is teachers' responsibility.Therefore, educating such competent teachers is the main responsibility of any educational settings. Despite the strong theoretical studies, in practice many teachers lack sufficient knowledge about metacognition (Veenman, Hout-Wolters &Afflerbach, 2006). Teachers' understanding of what is necessary for teaching and learning has a strong impact on their practice and learners' learning process (Aguirre &Speer, 1999; Borko& Putnam, 1996; Zohar, 2006). Because teachers have implicit metacognitive knowledge, they are not able to transmit them to the students intuitively. Since this knowledge is implicit, teachers cannot include itinto their lesson plans. Teachers may recognize the importance of metacognition in teaching and learning process but may not be aware of the instruction of its skills and strategies. A teacher's instruction of metacognition may be influenced by his/her individual understandings of what it means to teach metacognition (Baylor, 2002).

Metacognition is not just a skill to be taught, but also a disposition of what it means to think and learn (Harpaz, 2007). Teaching metacognition includes the use of reflection or think aloud, problem-solving activities, small and whole group discussions about process, and explicit strategy instruction. To let teachers improve their pedagogical understandings of metacognition, they have to be equipped with *declarative*, *procedural*, and *conditional* knowledge. Declarative knowledge is a teachers' explicit knowledge of learning process and what they should teach. Procedural knowledge is knowledge of facilitative factors in learning process and how a teacher teaches something. Conditional knowledge is the knowledge and understanding of appropriate time and condition to apply metacognitive strategies in teaching performance. To enhance Teacher Education Centers' quality and quantity the above mentioned three factors have to be focused.

Metacognitive Teachers are someone who monitors his/her understanding and use strategies to regulate understanding, and they also know how to scaffold and guide students, how to demonstrate thinking, knowledge of the strategies, knowledge of students, and knowledge of when to implement strategies (Griffith &Ruan, 2005; Gourgey, 1999). To understand what is needed to teach students to be metacognitive, teachers' pedagogical understanding of metacognition is required. That is, a teacher should be aware of the facilities he need to make a student metacognitive thinker.

To educate better learners, a metacognitive teacher all the time must monitor his own and learners thinking process and encourage and help students to use appropriate strategies and model them for better understanding. When a teacher is aware of what is required for effective teaching, learners' learning process will be facilitated as well (Aguirre &Speer, 1999; Borko& Putnam, 1996; Zohar, 2006). To gain better result strategies and their usage can be discussed between learners, teachers and learners, and teachers and teachers. Metacognition plays an important role in students learning process. Therefore, teachers have one of the most important responsibilities to acknowledge, cultivate, exploit and enhance the metacognitive capabilities of all learners. Students' knowledge of strategies, thinking, and problem solving result in more usage of such

metacognitive strategies and successful learners. Flavell (1979) stated "increasing the quantity and quality of children's metacognitive knowledge and monitoring skills through systematic training may be feasible as well as desirable" (p. 906). But mostly teachers use tacit instruction of such certain elements of learning process.

Metacognitive teachers are aware of their knowledge and are able to have online decision making regarding what to do when they don't know what to do; that is, they have rich repertories of strategies for finding out or figuring out what they need to do in a specific problem solving activities.

Teacher Education Center can support the EFL teachers' required and essential metacognitive needs which help EFL teachers' awareness before, while, and after teaching, which results in EFL learners desirable outcomes. Therefore, this study seeks responses for the following research questions. The study attempts to address the following questions:

1. Do EFL teachers have explicit and practical knowledge of metacognition?
2. Does metacognition have any place in the content of the Teacher Education Center?

3. Method and materials
3.1. The Design of the Study

The present study tried to firstly investigate Iranian EFL teachers' awareness of metacognitive strategies by virtue of two widely used instruments intended to measure teachers' metacognitive awareness and the content of present Teacher Education Center. Thus, part of the research was a survey aimed at discerning the metacognitive strategies teachers using in the classroom in an input-poor context. Furthermore, this study endeavored to study the presence of metacognitive strategy in in-service training programs for EFL high school teachers on the north of Iran.

In an attempt to uncover the Iranian EFL teachers' metacognitive knowledge, a survey study brought together with a qualitative study in a single unitary research project. First, the present study tries to investigate Iranian high school English language teachers' pedagogical understanding of metacognition, awareness of metacognition and its strategies. 131 male and female high school English language teachers (4-20 year experience) with an age range from 25 to 50 from the north of Iran were invited to participate in the Teachers' Metacognition Scale (TMS) questionnaires (Wilson &Bai, 2010). All questions were translated into Persian and the original 4-point Likert scale range changed to 1 (strongly agree) to 4 (strongly disagree).

Furthermore, this study attempted to investigate kind of pre-service and in-service Teacher Training Program performed for English language teachers through a researcher made semi-structured interview. Therefore for the second step, 17 teachers were randomly selected and invited to participate in a semi-structured interview to investigate in depth whether they were interested in using metacognitive knowledge in teaching or they ever used it in their frequent teacher training programs. The efforts were made to demonstrate whether metacognitive strategy training would add for EFL teaching in an input-poor environment

3.2. Participants

The randomly selected participants were among EFL teachers in both high schools and private English schools from five separated district of ministry of education (Ramsar, Tonekabon, Abbas Abad, Chalous, and Now shahr) in north of Iran. The participants were 131male and female EFL teachers with an age range from 25 to 50 and had 4 to 25 years of teaching experiences at different levels of EFL teaching. 35 of participants were

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male and 96 were female EFL teachers who were invited to take part in the study voluntarily. The educational degrees of participants were AD (associate degree*), BA, and MA in both EFL teaching and translation.

Table1: Participant Demographics

Gender	N	%	Age	%	Degree	%	Years of experience
Male	35	26.7	25-29	23.3	AD*	3.7	0-5
			30-39	42.7	BA	63	11-20
Female	96	73.2	40-50	34	MA	29.6	20 -25
Total	131						

3.3.Instruments

Two instruments were used to measure the above mentioned research questions.

Questionnaire

The valid and reliable Teachers' Metacognition Scale (TMS) questionnaire with 20 Likert- scale questions taken from Wilson and Bai (2010) study was used to measure the amount of EFL teachers' metacognitive knowledge. The questionnaire was multiple variables which were used to investigate EFL teachers' four basic knowledge of metacognition. The first five items of the questionnaire studied EFL teachers' pedagogical understanding of metacognition which is teachers' ability in helping learners to integrate their declarative and procedural knowledge in problem solving activities. Items 6 to 9 investigated teachers' conditional knowledge which is teachers' ability in recognition of appropriate time of specific strategy usage. Items 10 to 13 tried to figure out teachers' declarative knowledge which is teachers' teaching ability in explicit instruction of metacognitive strategies. The last seven items tried to measure teachers' procedural knowledge which is teachers' ability in using metacognitive strategies in action by students in the classrooms.

Interview

In order to seek response for the research question focusing on the place of metacognition in the content of Teacher Education Center seventeen of the EFL teachers randomly were invited for taking part in the semi-structured interview questions. The questions were included five open-ended questions regarding the quality and quantity of the provided Teacher Education Center. Because of their job security pseudonyms were used for all interviewees.

3.4. Data Collection Procedures

Before conducting the questionnaire the researcher get the permission letter from university to five Education Departments in Ramsar, Tonekabon, Abbas-Abad, Chalus, and Noshahr. After ethics was cleared and the Education department granted the permission, eight weeks were granted to questionnaire conduction and collection among the English language teachers both in high schools and private EFL institutions in their breaks and took 20 minutes.Quantitative Data for this study is collected through Teachers' Metacognition Scale (TMS) questionnaire with 20 Likert- Scale questions validated by Wilson and Bai (2010) and designed to investigate teachers' knowledge of metacognition. It is administered among volunteer teachers in person during second half of the school year. Teachers were asked to complete the questionnaire in seven days. All the subjects were provided with the explanation of the questionnaire, purpose of the study, and way of answering questions in detail. In addition, before distribution of the questionnaire, the researcher emphasized that their responses to the

questions would affect the research results, therefore they were asked not to respond the questions may look vague. The completed and uncompleted questionnaires were collected through face-to-face meetings, telephones, and Emails in two weeks.

Teachers were also asked to take part in the semi-structured interview with five open ended questions voluntarily after completing the questionnaires. In week nine and ten, fifteen of the teachers were interviewed in different places; some at school, some at their houses, and some in coffee shop. Each interview session took approximately 30 minutes providing explanation about goal and process of interview. All the subjects were promised pseudonyms because of their job security. Recording took place and the subjects were appreciated at the end of interview.

As soon as the questionnaires collected results were analyzed through Statistical Package for Social Science (SPSS, version 20) by an expert in the field. Moreover, the collected interview data were transcribed and reread several times to highlight the prominent subjects. Then based on the research questions, themes were identified, coded, and labeled to be available faster.

3.5. *Data Analysis*

The collected data will address the teachers' pedagogical understanding of metacognition and appropriateness of Teacher Training Program in meeting metacognitive needs of the teachers. In order to answer the above-mentioned research questions, the quantitative questionnaire data will be analyzed through SPSS, and the qualitative data will be collected through the semi-structured interview and the transcriptions will be analyzed.

4. Data analysis and results

This study has used quantitative and qualitative approaches to shed light on Iranian EFL teachers' amount of metacognitive knowledge. The interview was also designed to unveil the quality and the quantity of Teacher Training Center's programs provided for EFL teachers on north of Iran. Teachers might recognize the importance of using metacognition in teaching and learning process but might not know how to use them effectively in their teaching.

Research question 1: Do EFL teachers have explicit and practical knowledge of metacognition?

In order to respond to the first research question focusing on the EFL teachers' metacognitive knowledge, the hypothesis was teachers suffer from inadequate and explicit metacognitive knowledge. In order to examine the hypothesis, the responses were compared using one sample t-test. The primary analysis indicated that teachers have metacognition knowledge in general. However it can be claimed that this amount of metacognitive knowledge is tacit because when teachers were asked to explain the reasons of selecting some of the response they were not reasonable and stated that their long years of teaching experience increased their metacognitive knowledge.

Table 1: Single sample T-test for TMS questionnaire

Metacognitive Knowledge	Mean Difference	df	Assumed Mean (AS)	Mean	SD	N	P Value	T Value
Pedagogy	.30	24	2.50	2.19	.48	25	<. 00	2.95
Condition	.27	24	2.50	2.22	.48	25	<. 00	2.74
Declaration	.47	24	2.50	2.02	.26	25	<. 00	8.86
Procedure	.58	24	2.50	1.91	.41	25	<. 00	7.16
Total	.42	24	2.50	2.08	.35	25	<. 00	5.85

Research question 2: Does metacognition have any place in the content of the Teacher Education Center?

In order to respond to the second research question focusing on whether metacognition was in the content of Teacher Training Center the hypothesis was the present Teacher Training Center lack quality and quantity and never meet metacognitive needs of EFL teachers. The findings from interview data supported our hypothesis.

The analysis sought to gather an understanding of the participant's pedagogical understanding of the teacher training program; or what they believed was necessary for training teachers to become more effective. The findings of this study revealed that both EFL teachers and Teacher Training Center lack sufficient knowledge of metacognition. Metacognitive knowledge helps teachers manage their teaching and assists learners in improving their learning. But according to the collected interview data in the investigated districts of ministry of education EFL teachers had to start teaching with their limited and insufficient knowledge regarding teaching and learning process and maybe after years of teaching experience they might figure out what and how to teach. Moreover, the programs which are provided for the EFL teachers in Teacher Training Center lack quality and were not sufficient enough to meet teaching and learning requirements in real classroom contexts. Of course the programs in Teacher Training Center are rarely held and in the provided programs instead of specialized courses related to EFL teaching and learning some moral, religious, social, and economical issues occupy the programs. To sum up, education system in Iran is not following practical, modern, and post method point of view, so it is logical to expect that the teachers' required knowledge regarding metacognition and styles of teaching strategies cannot be supported in the provided training programs because most teachers did not even hear the term metacognition. In addition, teachers themselves were not satisfied with the supported TTC program.

4. Conclusions and discussions

This study yields two findings. The first finding is that EFL teachers lack or have tacit knowledge of metacognition. This study also revealed that the conducted training programs in the investigated districts of ministries of education for EFL teachers hardly meet teachers' need of teaching staff in a real classroom context because the rarely employed courses involved the repetition of obsolete teaching methods in theory.

The findings of this study may suggest that the developer of teacher training programs have to make some crucial changes and revise the present pre-service and in-service training programs for EFL teachers. Teachers

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and syllabus designers may be able to benefit from the findings of this study in designing their programs in order to help the teachers to develop the required knowledge in teaching EFL effectively.

The finding of this study is similar to Veenman et al. (2006) study indicated that many teachers lack sufficient knowledge about metacognition and that poor amount of their knowledge can be considered implicit because they were unaware of their knowledge and were not able to provide reasonable explanation regarding their metacognitive knowledge. Curwen et al. (2010) in their study proved that to increase student achievements, teachers should teach some metacognitive strategies so that students engage explicitly in learning process. But the problem is as Prytula (2012) claimed, "one cannot teach what one does not know".

Nonexistence of pre-service teacher education is another main problem in the present teacher training program in the investigated districts ministry of education. Based on Hammond study (2006), there is a close relationship between teacher training program and teachers' belief of their effectiveness. But not preparing the EFL teachers in the investigated areas causes teaches' imitation on their own teachers' ineffective and non-proficient teaching methods which leads to unlearned EFL. Qualified Teacher Training Program leads to teachers' competency and teachers' competencies is a grantee of the success of any educational system (Evertson, Emmer, & Murray, 2003; Hoy, &Miskel, 2007).

Moreover, to learn and grow professional EFL teachers everlasting learning opportunities are very important (Ma, 1999; Ball & Cohen, 1999; Grossman, et al., 2009). Thus Teacher Training Center must follow updated programs, which consists of thinking, research and practice. That is, more systematic training programs are required to meet teachers' teaching needs while teaching in different classroom contexts.
Further research might focus on the kind and time of workshops during which teachers can improved and update teaching and learning knowledge. It can be a qualitative study in which tasks can be offered for pre-service and in-service training programs. Because this study showed that high school English language teachers and pre-service and in-service program developers do not have sufficient knowledge regarding the kinds of useful and effective programs for updating teachers' knowledge about new ways of teaching and learning.

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