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THE ROLE OF TEACHERS' METACOGNITIVE AWARENESS ON LANGUAGE LEARNERS' KNOWLEDGE OF GRAMMAR AND CRITICAL THINKING SKILLS

O PAPEL DA CONSCIÊNCIA METACOGNITIVA DOS PROFESSORES NO CONHECIMENTO DAS HABILIDADES GRAMATICAIS E DE PENSAMENTO CRÍTICO DOS ALUNOS DE LÍNGUAS

EL PAPEL DE LA CONCIENCIA METACOGNITIVA DE LOS DOCENTES SOBRE EL CONOCIMIENTO DE LOS ESTUDIANTES DE IDIOMAS SOBRE LA GRAMÁTICA Y LAS HABILIDADES DE PENSAMIENTO CRÍTICO

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Abstract: The present study was an attempt to discover the probable effects of EFL teachers' Metacognitive Awareness (MA) on Iranian EFL learners' knowledge of grammar and critical thinking ability. The study aimed to see whether or not teachers' MA can improve language learner' knowledge of grammar and critical thinking skill. To this end, 100 EFL teachers were selected and completed Metacognitive Awareness Inventory (MAI). Then, 10 teachers with lowest degree of MA and 10 with highest degree of MA were selected to teach 207 intermediate language learners. The learners selected took a grammar tests and a critical thinking ability questionnaire test before and after the treatment. Collecting and analyzing the data, it was revealed that teachers' MA affected language learners' knowledge of grammar, while it did not influence the participants' critical thinking skills. The findings of the present study might be useful for language teachers and teacher trainers.

Keywords: Metacognitive Awareness, Critical Thinking, Grammar, EFL Teachers.

Resumo: O presente estudo foi uma tentativa de descobrir os efeitos prováveis da consciência metacognitiva (MA) dos professores de EFL no conhecimento de gramática e capacidade de pensamento crítico dos alunos de EFL iranianos. O estudo teve como objetivo verificar se o mestrado dos professores pode ou não melhorar o conhecimento da gramática e da habilidade de pensamento crítico do aluno. Para esse fim, 100 professores de EFL foram selecionados e concluíram o Inventário de Conscientização Metacognitiva (MAI). Em seguida, 10 professores com menor grau de MA e 10 com maior grau de MA foram selecionados para ensinar 207 alunos de línguas intermediárias. Os alunos selecionados fizeram um teste gramatical e um questionário de capacidade de raciocínio crítico antes e depois do tratamento. Ao coletar e analisar os dados, foi revelado que o professor de MA afetou o conhecimento da gramática dos alunos de

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idiomas, enquanto não influenciou as habilidades de pensamento crítico dos participantes. As conclusões do presente estudo podem ser úteis para professores de línguas e formadores de professores.

Palavras-chave: Consciência Metacognitiva, Pensamento Crítico, Gramática, Professores de EFL.

Resumen: El presente estudio fue un intento de descubrir los probables efectos de la Conciencia Metacognitiva (MA) de los maestros EFL sobre el conocimiento de la gramática y la capacidad de pensamiento crítico de los estudiantes iraníes EFL. El estudio tuvo como objetivo ver si la maestría de los docentes puede o no mejorar el conocimiento de la gramática y el pensamiento crítico de los estudiantes de idiomas. Con este fin, se seleccionaron 100 maestros de EFL y se completó el Inventario de Conciencia Metacognitiva (MAI). Luego, se seleccionaron 10 maestros con el grado más bajo de maestría y 10 con el grado más alto de maestría para enseñar a 207 estudiantes de lenguaje intermedio. Los alumnos seleccionados tomaron un examen de gramática y un cuestionario de capacidad de pensamiento crítico antes y después del tratamiento. Al recopilar y analizar los datos, se reveló que la maestría de los maestros afectó el conocimiento de gramática de los estudiantes de idiomas, mientras que no influyó en las habilidades de pensamiento crítico de los participantes. Los resultados del presente estudio podrían ser útiles para profesores de idiomas y formadores de profesores.

Palabras clave: Conciencia metacognitiva, pensamiento crítico, gramática, profesores de inglés como lengua extranjera.

1 INTRODUCTION

For Pressley and Ghatala (1990), understanding the role of metacognitive awareness in learning is a key component in language acquisition. According to Schraw and Dennison (1994), the key to the success of metacognitive skills is that when they are taught appropriately, they assist dependent learners to become autonomous learners. Dependent learners are those students who are highly dependent on levels of teacher support. Metacognitive skills provide these students an efficient way to acquire, store, and express information and skills. By raising their metacognitive awareness, learners become more active and independent in their learning process. Metacognitive awareness allows individuals to plan, sequence, and monitor their learning in a way that directly improves their performance. According to Pressley and Ghatala (1990), metacognitively aware learners are more strategic and perform better than unaware learners. As Dörnyei (2009) states, declarative component of second language acquisition highlights the significance of metacognitive awareness and instruction on language learning. In contrast, implicit and procedural learning processes which are usually associated with lack of awareness are considered as the responsible cognitive operations of skill acquisition (Krashen, 1994).

Teaching grammar is one of the most controversial issues these days in many language institutes (Nassaji & Fotos, 2011). In spite of the fact that most attention is given to communicative methods and focus is on speaking, we will see that nowadays, teaching grammar has regained its place in language curriculum (Richards & Renandya, 2002). It seems that people now agree that grammar is too important to be ignored

and without a good knowledge of grammar, they will be able to communicate just in a few numbers of situations. It seems that there are many linguists and researchers who have given support to grammar instruction in EFL and EFL language teaching and learning. Garner (1989) believes that grammar gives us a means so that we can analyze and describe our language. Scarcella (2003) has additionally emphasized the importance of grammar instruction so English learners will develop the high level of communicative ability necessary for fulfillment in class and on the far side of that.

Critical thinking is concerned with higher-order thinking skills that enable individuals to successfully participate in a society. In fact, critical thinking skills allow individuals to become independent thinkers, capable of analyzing and solving problems. Among an extensive inventory of critical thinking skills, we can refer to analysis, interpretation, inference, explanation, synthesis, evaluation, reasoning, self-regulation, decision-making, and problem-solving as the core skills at the heart of critical thinking models or taxonomies (Moseley et al., 2005). The incorporation of critical thinking skills in educational programs has been the concern of theorists and practitioners around the world for years. In recent decades, many scholars have forcefully agreed upon the fact that teaching individual learners how to think critically must become the primary goal of schooling (Browne & Keeley, 2007; Ennis, 1997; Facione & Facione, 2007;). The review of the related literature has also manifested that the main concern of scholars and educationists at the present time is whether critical thinking should be taught separately as an independent course or embedded in other subject matters (Ennis, 1997). The concept of critical thinking reflects the idea that EFL learners can actively be engaged in such mental processes as problem-solving, discovery-learning, questioning, analyzing, making predictions, formulating and reformulating hypotheses to expand their knowledge of language.

2 LITERATURE REVIEW

Educational psychology requires knowledgeable teachers who can improve learning process rather than transferring the materials. It means that subjects like learning theories, transfer of learning, remembering or forgetting, and memory and motivation should be part of a teacher's knowledge (Fordham, 2006). The process of acquisition of metacognition strategies and skills as a concept that is advocated by psychologists for school teachers may transform the teaching/learning process. Skills are defined as the repeated practices or simple directives and refer to a mechanical, automatic, and consistent cognitive behavior, whereas strategies are purposeful, procedural, willful, effortful, vital, and facilitative in their own nature. The distinguishing features of skills and strategies are their automaticity and intentionality. Intentionality requires thinking which is conscious, goal oriented, and deals with planning a series of actions (Bormotava, 2010). In developing metacognition at schools, both experienced teachers and teacher trainees have to be well equipped with the nitty-gritty of how to teach metacognitively. Teaching metacognitively

concerns with either teaching for metacognition or teaching with metacognition (Hartman, 2001). Teaching for metacognition implies that academics style instruction that activates and develops their students' metacognition, whereas teaching with metacognition implies that academics grasp and have confidence their own thinking and teaching (Hartman, 2001; Xiao, 2007). In other words, teachers should maintain both strategies and skills to teach metacognitively. Metacognition helps teachers achieve awareness about the way they think and control over what they teach and also the ability to monitor, assess, and manage their teaching activities consistent with particular learners, aims, and contexts (Hartman, 2001; Xiao, 2007).

In the process of teaching, both for and with metacognition, Xiao (2007) proposes that teachers require increasing their own teaching styles via knowing strategic metacognitive knowledge about instructional strategies and via self-regulation. Strategic metacognitive knowledge about instructional strategy concerns with knowing about what the strategy is, why it is a helpful teaching strategy, and how and when it is to be applied in a classroom. Veenman (1998) referred to these kinds of principles as the WWW and H rule (what to do, when, why, and how). Based on Veenman, Van Hout-Wolters, and Afflerback (2006), metacognitive teaching seems to increase metacognition and learning in a wide range of learners. If the teacher can utilize the cooperative learning strategy in the classroom, it will lead to learners' desired success. Many researchers advocate the application of cooperative or collaborative learning structures to motivate the improvement of metacognitive skills (e.g. Kramarski & Mevarech, 2003; Kuhn & Dean, 2004; Martinez, 2006; Schraw, Crippen, & Hartley, 2006). This direction looks to be based on Piagetian and Vygotskyian models that focus on the social interactions value to enhance cognitive development. It is worth noting that teachers' metacognitive regulation enables them to plan for the instruction and use of strategies in the curriculum to improve compensatory tasks which help learners, and to evaluate the efficiency of their own teaching and learners' learning. Xiao (2007) states that many teachers think about their learners, instructional materials, tasks, and aims of teaching before they start teaching. For example, novice teachers may make more attempts to plan for their teaching through writing lesson plans, designing teaching aids, and preparing external rewards.

3 TEACHER'S METACOGNITION

Research carried out in the past revealed that teaching metacognition can help learners develop reading and mathematical problem solving (Desoete, Roeyers, & Clercq, 2003; Pugalee, 2001). Many effective metacognition teaching models in the classroom have been improved and used (Beyer, 1987; Costa & Lowery, 1989; Driscoll, 2000). In addition, Beyer (1987) claimed that thinking about thinking deals with motivating abstract processing or other abstract processes which is nearly connected to the formal abstract thinking. Many teaching strategies have been suggested to increase metacognition (Leat & Lin, 2003). Costa

and Lowery (1989) showed that these strategies can be utilized to physical education, vocational education, or reading skills. Teachers can develop learners' metacognition via using these strategies and similar teaching techniques, like strategy planning, conscious selection, making question, paraphrasing or reflecting on students' ideas, naming learners' cognitive behaviors, role playing, and modeling.

Metacognition has a significant role in learners' learning process. Thus, there is one of the most crucial responsibilities for teachers to confirm, promote, activate, and increase the metacognitive capabilities of all students. As Flavell (1979, p. 906) states, "increasing the quantity and quality of children's metacognitive knowledge and monitoring skills through systematic training may be feasible as well as desirable".

Moreover, learners need to know that strategies are different, and they are permitted to use different strategies based on learning objectives and task requirements (Clark & Graves, 2005). In fact, in order to identify the suitability of the strategy use, learners require time to consider and reflect on their thinking. Think aloud time to practice, thinking strategies, active discussions, and use of language of thinking are teaching strategies which help instructors carry out explicit teaching and provide learners time to reflect on the processes (Schreiber, 2005; Zohar, 2006). Mahdavi and Jafarzade (2014) carried out a study to examine the role of the present teacher education program in providing metacognitive requirement of high school English language teachers. A number of 100 male and female Iranian EFL teachers were selected randomly to participate in their study. Teachers' Metacognition Scale (TMS) questionnaire was used as an instrument to measure teachers' awareness of four metacognitive factors, namely pedagogical, declarative, procedural, and conditional. The results indicated that teachers' metacognitive awareness of teaching processes in this input-poor environment was poor**.** It was concluded that, adding and enhancing of metacognitive elements in the teacher education program can increase teachers' metacognitive awareness of teaching processes in Iran.

Accordingly, metacognition is a crucial notion in teacher professional improvement because if teachers desire their students think metacognitively, they need to be metacognitive in advance. In fact, "the ability to self-regulate learning is essential for teachers' professional growth during their entire career as well as for their ability to promote these processes among students" (Kramarski & Michalsky, 2009, p.161). To teach metacognitive knowledge and strategies appropriately, first teachers themselves must be metacognitive because based on Prytula (2012), individuals are not able to teach what they do not know. Effective teaching needs trained metacognitive teachers; therefore, the present and traditional teacher training programs should be reviewed and revised.

Previous research revealed experienced teachers are able to think ahead, plan, present, and evaluate hypotheses about learners and their own instructional behaviors, and consider metacognitively on their own thinking and instructional processes (Clark & Peterson, 1986). In a study conducted by Pintrich (1990), he showed that teachers require continually monitor and manage their teaching behavior as they work with the

learners. Teachers' ability to reflect and think about their own instructional process is an important part of self-regulation. Teachers' knowledge about themselves, such as metacognitive knowledge of personal variables and self-schemas is crucial in relation to their actual teaching behavior, content knowledge, and teaching effects.

The present study aimed to find out the effect of teachers' MA on language learners' knowledge of grammar and critical thinking. Thus, it formulated following questions:

1: Does Iranian EFL teachers' metacognitive awareness significantly affect Iranian intermediate EFL learners' knowledge of grammar?

2: Does Iranian EFL teachers' metacognitive awareness significantly affect Iranian intermediate EFL learners' critical thinking?

4 METHOD

The present study enjoyed a quantitative design which concentrated on the role of teachers' MA in their performances in language teaching.

4.1 PARTICIPANTS

In the first stage of the study, the researchers selected 100 EFL Iranian teachers who were teaching English at different private language institutes. The selected teachers completed Metacognitive Awareness Inventory (MAI) designed by Schraw and Dennison (1994). For the second part of the study, 20 teachers were selected according to their scores on MAI. Among selected teachers, 13 teachers were female and the rest seven were male, two of them held Ph.D., 12 held MA, and 6 teachers held BA degree. Ten teachers who got the highest scores and ten teachers who obtained the lowest scores on MAI were selected to teach grammar to language learners. Thus, the second part of the sample was nested in the first part of it. The rationale for this division was to find out the effect of teachers' MA on language learners' knowledge of grammar and critical thinking skill through making a comparison between teachers with high and low degree of MA. However, in order to make sure that the difference between two groups (high metacognitive and low metacognitive teachers) was significant, an independent samples *t*-test was conducted which confirmed that the difference was meaningful.

The second group of the participants was Iranian male and female intermediate EFL learners whom were selected according to the TOEFL test. These Iranian language learners were Persian native speakers who were studying English as a foreign language at six private language institutes in Tehran. Their mean age was 17 years old. The grammar part of the test was used to ensure homogeneity of the sample regarding their

language proficiency and knowledge of grammar. The officials of the language institutes confirmed that the language learners were at intermediate level. Therefore, the TOEFL test was used to make the sample homogeneous concerning grammar knowledge. Having administered the test, the researchers selected the language learners whose scores fell one standard deviation (SD) above or below the mean score. Accordingly, there were 29 students who were not part of the sample of the study, but they took part in classes. It happened since the institutes did not let the researchers change the leaners' classes. They attended in the classes the same as the participants, whereas their performances were not included in the study. They were not informed about this issue. In fact, they were treated the same as the participants of the study. As 20 teachers were selected to teach the learners, 20 classes were consequently needed. There were 207 language learners as the participants of the study. Nevertheless, 236 learners were instructed during the study. Ten classes, which totally consisted of 127 students (18 students were not the participants of the study), were taught by ten teachers who had low metacognitive awareness and ten classes, which totally consisted of 109 students (11 students were not the participants of the study), were taught by ten teachers who had high metacognitive awareness. One hundred and seventeen learners were female and 90 were male. Both samples were selected according to convenient sampling principles. Additionally, the first part of the sample affected the second stage of sample selection. The language learners whom were taught by selected teachers must be selected as the sample of the study. However, the selected teachers had more than one class. The classes which were available were selected. Some language institutes did not accept to cooperate with the researcher.

4.2 MATERIALS

The intermediate *English Grammar in Use* book by Murphy (2019) was used as material in the present study. The book consisted of 115 units among which 46 units of the book was selected to be taught. Units one to 46 were taught to language learners. Since 15 sessions were held, 46 units of the book were selected to be taught. Additionally, units one to 46 were about tense and modals in English language. Thus, the teachers were supposed to teach the 46 units which were related to each other.

4.3 INSTRUMENTS

4.3.1 Metacognitive Awareness Inventory

In order to measure the Iranian EFL teachers' metacognitive awareness, Metacognitive Awareness Inventory (MAI) designed by Schraw and Dennison (1994) was used (Appendix B). It consisted of 52 yes/no items in which the participants were expected to accept a statement about themselves or not. As an example,

one item asked the participants to confirm the statement: *I ask myself periodically if I am meeting my goals*. It included four categories, namely procedural knowledge, declarative knowledge, procedural knowledge, and conditional knowledge for the first component. The second component which was regulation of cognition which contained knowledge about cognition and five categories, namely information management strategies, debugging strategies, planning, comprehension monitoring, evaluation for the second component. According to Schraw and Dennison (1994), the reliability of MAI was estimated .90 and it was consistent with other metacognition scales. Thus, the reliability and validity of the inventory was acceptable.

4.3.2 Grammar test

A researcher-made grammar test was used to assess the participants' knowledge before and after the treatment. It consisted of 30 multiple-choice items (Appendix C). The grammar test was designed by the researcher in order to make it a more valid instrument as it exactly covered the instructed materials. Standardized tests could not be appropriate for the sample of the present study since they measure knowledge of grammar as a whole, whereas some aspects of English grammar were taught in the present study. Before administering the grammar test to the participants, it went under a pilot study in which 20 male and female intermediate language learners took part. The collected data was analyzed running Cronbach alpha test. The estimated reliability was .74 which was acceptable. The validity of the test was confirmed by two experts.

4.3.3 The California Critical Thinking Skills Test

The California Critical Thinking Skills Test (CCTST) developed by Facione and Facione (1993) was applied to assess the critical thinking among the participants (Appendix D). There were 34 multiple choice questions. The CCTST included five areas of evaluation, inference, analysis, inductive reasoning, and deductive reasoning. Facione et al. (1998) concluded that the test and its subscales enjoyed acceptable reliability of 0.78 (calculated through KR-20). Furthermore, they found that the test measured precisely what it purported to measure (i.e. construct validity).

4.4 PROCEDURE

20 teachers were extracted from theses group. They were selected according to their performances in MAI. According to the obtained scores, ten teachers who got the highest and ten teachers who got the lowest scores were selected to teach the intermediate EFL learners. Their difference was checked to be

significant running an independent samples *t*-test. According to the results of data analysis, it was revealed that the difference was meaningful. Since the study aimed at finding the probable effects of teachers' metacognitive awareness on language learners' knowledge of grammar and critical thinking, teachers with low and high degrees of metacognitive awareness were needed to make a comparison between them. This stage of the study had no treatment. It aimed to make a comparison between the current status of teachers regarding metacognitive awareness.

The second stage of the study, which was the continuum of the first stage, concentrated on treatment and experience. Therefore, 20 classes from six private language institutes, which were taught by the drawn teachers from the first stage, were selected. Six institutes were selected since 20 classes with students of intermediate proficiency level were not available in one institute or the selected teachers did not work in the same institute. Some institutes did not accept to be the host for the present study as well. The number of students in the classes was not the same. Additionally, some students were not qualified to be included in the study according to their performances in placement test. They were assumed as outliers after administering the TOEFL test to the language learners. The students whose scores fell one SD above or below the mean were selected as the participants of the study. Finally, 207 language learners were drawn to be the sample of the study. Before the treatment, the selected language learners took the researcher-designed grammar test and critical thinking inventory as pre-test. The grammar test and critical thinking inventory were administered to the participants in order to make a comparison at the end of treatment. Then, the treatment was started.

All teachers taught English *Grammar in Use book* to the participants. The teachers were asked to teach the same units to the students. It was confirmed that the students did not receive any other instruction in grammar. Since the institutes had their own curriculum, which focused on teaching communicative language teaching, the teachers taught the institutes textbooks for one hour each session and dedicated half an hour to teaching grammar. Each session took 90 minutes. In this way, both the institutes' goals and the study's purposes were met. The present study drew on the effect of teachers' metacognitive awareness on language learners' achievement. Thus, methods of teaching were not of the study's concern. Accordingly, the teachers employed teaching strategies they used to. They were just asked to teach 46 units of the book in 15 sessions. At the end of treatment, the students took the same grammar and critical thinking tests. These tests were used as posttest this time. Since the interval between pretest and posttest was approximately three months, it was assured that test effect did not happen.

4.5 DATA ANALYSIS

The study used normality tests, descriptive data, and parametric tests to analyzed the collected data. To answer both the first and second questions, independent and paired samples *t*-tests were conducted.

5 RESULTS

5.1 The Effect Teachers' Metacognitive Awareness on Language Learner' Knowledge of Grammar Selected teachers to teach the learners

In order to examine the effect of EFL teachers' metacognitive awareness on Iranian EFL language learner' knowledge of grammar, 20 teacher were selected to teach them. Ten teachers got the highest scores and the other 10 teachers got the lowest scores on MAI. In order to make sure the significant difference between the groups, an indecent samples *t*-test was conducted.

Table 1. Independent Samples T-Test the Selected Teachers

Mean	Std. Deviation	Std. Error	Mean	t	df	Sig. (2-tailed)
Low	23.00	1.05	.33	27.58	18	.000
High	45.60	2.36	.74			

The result of the independent samples t-test was presented in Table 1 in which a statistically meaningful difference could be found between the mean score of low group (M=23.00, SD=1.05) and the mean score of high group (M=45.60, SD=62.36; t(18)= 27.58, P= 0.000<0.05 two-tailed). Therefore, it was concluded that the selected groups' scores were significantly difference.

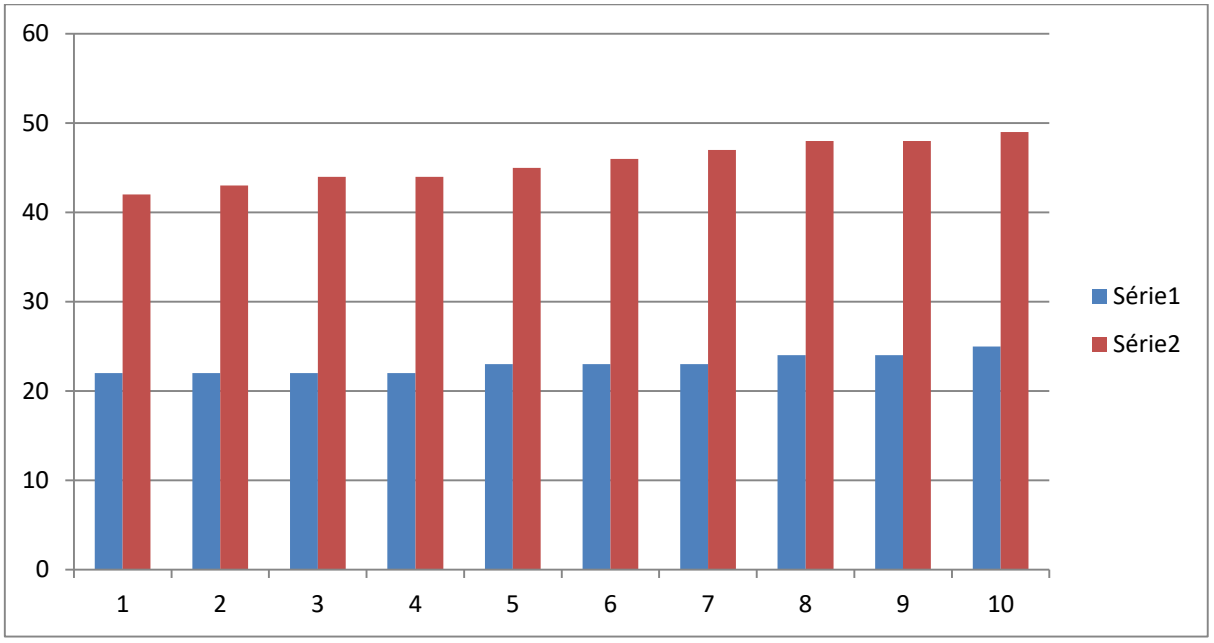

Figure 1. The Difference between Low and High Metacognitive Teachers

It was revealed that blue bars (low metacognitive teachers) were smaller than red ones (high metacognitive teachers). Figure 1 made known that all low metacognitive teachers obtained lower scores than high metacognitive ones.

5.2 The language learners' performance in grammar test before the treatment (pretest)

The selected language learners took a researcher-made test of grammar before the treatment. This test was administered to the language learners in order to understand changes in their knowledge of grammar after the treatment. Additionally, to find out how the learners of two groups were different regarding the grammar test, an independent sample *t*-test was conducted. Henceforth, by group 1, we mean the language learners who were taught by teachers with lower metacognitive awareness and by group 2, we mean the language learners who were taught by teachers with higher metacognitive awareness.

Table 2. Independent Samples T-Test Pretest of Grammar

Mean	Std. Deviation	Std. Error	Mean	t	df	Sig. (2-tailed)
Group 1	13.18	2.73	.26	.078	205	.078
Group 2	12.50	2.81	.28			

The results of the independent *t*-test in Table 2 indicated that there was no significant difference between the mean score of group 1 (M= 13.18, SD= 2.73) and the mean score of group 2 (M= 12.50, SD=

2.81); t(205)= .78, P= 0.078>0.05 two-tailed). Approximately, there was a difference of one between the means scores of group 1 and group 2. Therefore, it was concluded that group 1 and group 2 were not significantly different. This meant that the probable differences between them were because of the treatment.

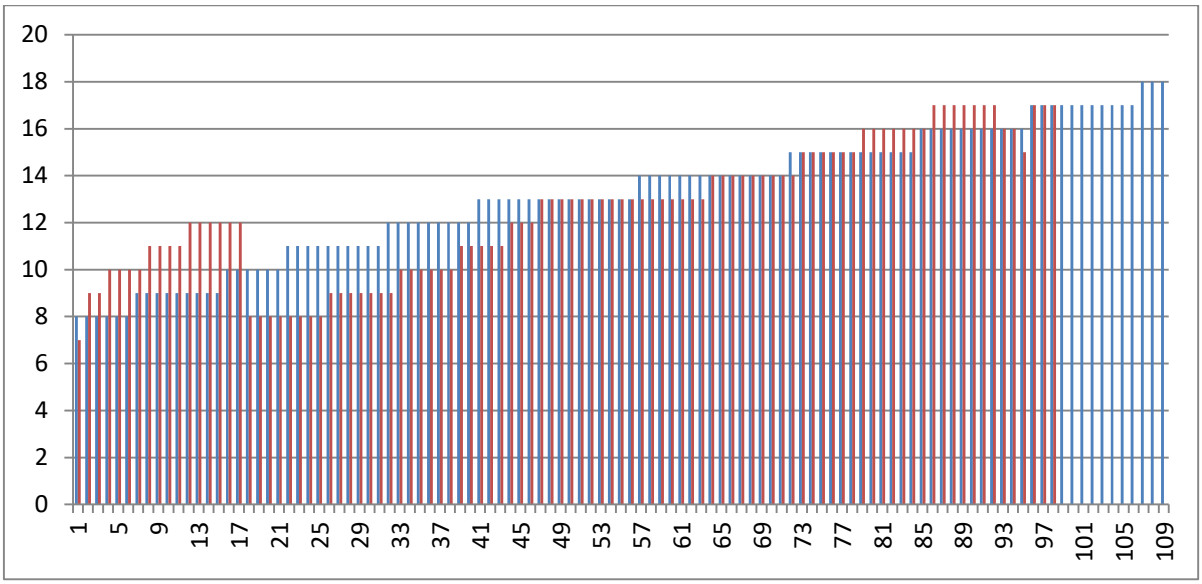

Figure 2. The Difference between Group 1 and Group for Pretest

Figure 2 showed that there was not such a difference between the students of group 1 and group 2. In some cases, the students of group 1 achieved higher scores and in some other cases, the students of group 2. They were generally similar according to Figure 4.5 which was previously confirmed through conducting an independent *t*-test.

5.3 The language learners' performance in grammar test after the treatment (posttest)

The selected EFL learners took the grammar test for the second time as posttest. Their performances in posttest were compared in order to see how group 1 and group 2 performed differently.

Table 3. Independent Samples t-test Posttest of Grammar

Mean	Std. Deviation	Std. Error	Mean	t	df	Sig. (2-tailed)
Low	15.38	2.57	.24	5.26	205	.000
High	17.07	1.98	.19			

An independent samples t-test showed that the mean score of group 1 (M= 15.38, SD= 2.57) was significantly different from the mean score of group 2 (M= 17.07, SD= 1.98); t(205)= 5.26, P= 0.000<0.05 two-tailed). Approximately, there was a difference of three between the means scores of group 1 and group 2. The mean score of group 1 was more than the mean score of group 2. Therefore, it was concluded that the participants of group 2 outperformed the participants of group 1 in posttest of grammar.

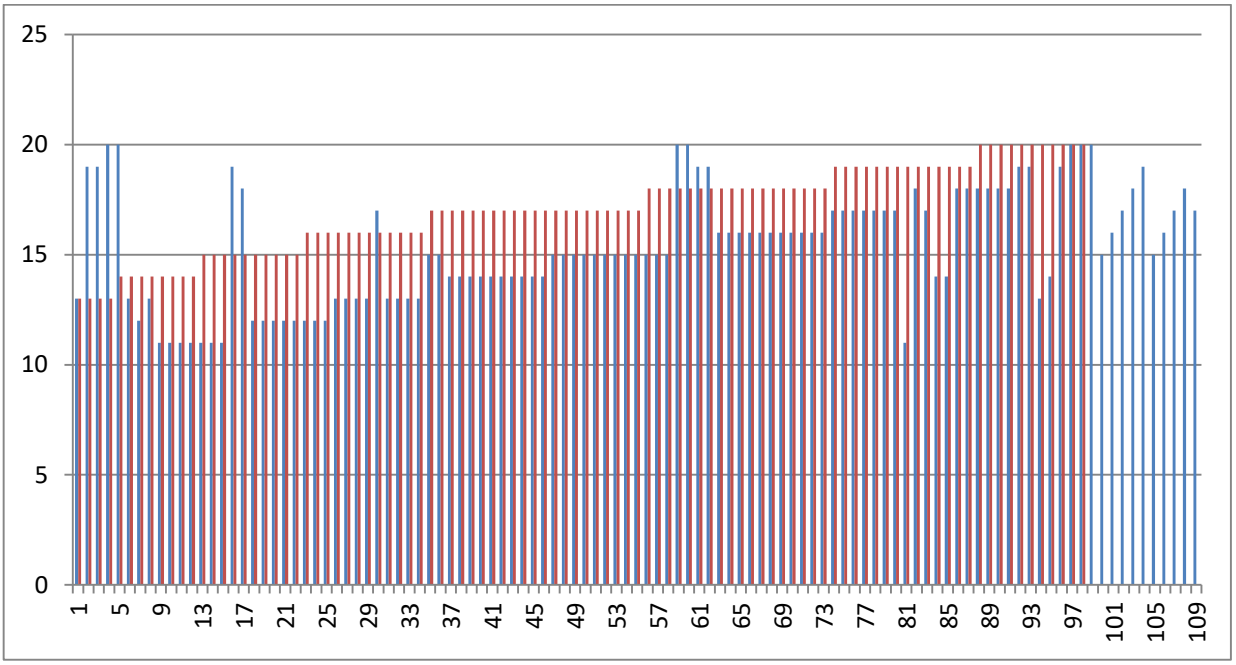

Figure 3. The Difference between Group 1 and Group for Posttest

According to Figure 3, red bars (group 2) are longer than blue bars (group 2) which indicated that the participants of group 2 performed better than the participants group 1. The results of an independent samples *t*-test made known that the difference was meaningful and the learners of group 1 outperformed the learners of group 2.

5.4 Group 1 performance in pretest and posttest of grammar

This part of the chapter intended to discover how the participants of group 1, which was taught by language teachers who had low degrees of metacognitive awareness, changed from pretest to posttest. Thus, a paired samples *t*-test was conducted.

Table 4. Paired-Samples T-Test for Group1 Performances in Pretest and Posttest

Mean	Std. Deviation	Std. Error	Mean	t	df	Sig. (2-tailed)
Pretest	13.18	2.73	.26	9.01	108	.000
Posttest	15.38	2.57	.24			

Table 4 showed that there was a significant difference between the participants' performance in pretest (*M*=13.18, *SD*= 2.73) and posttest (*M*=15.38, *SD*= 2.57), *t*(108)= 9.01, *P*=.000< .05 (two-tailed). Therefore, it was concluded that the participants of group 1 progressed significantly after the treatment.

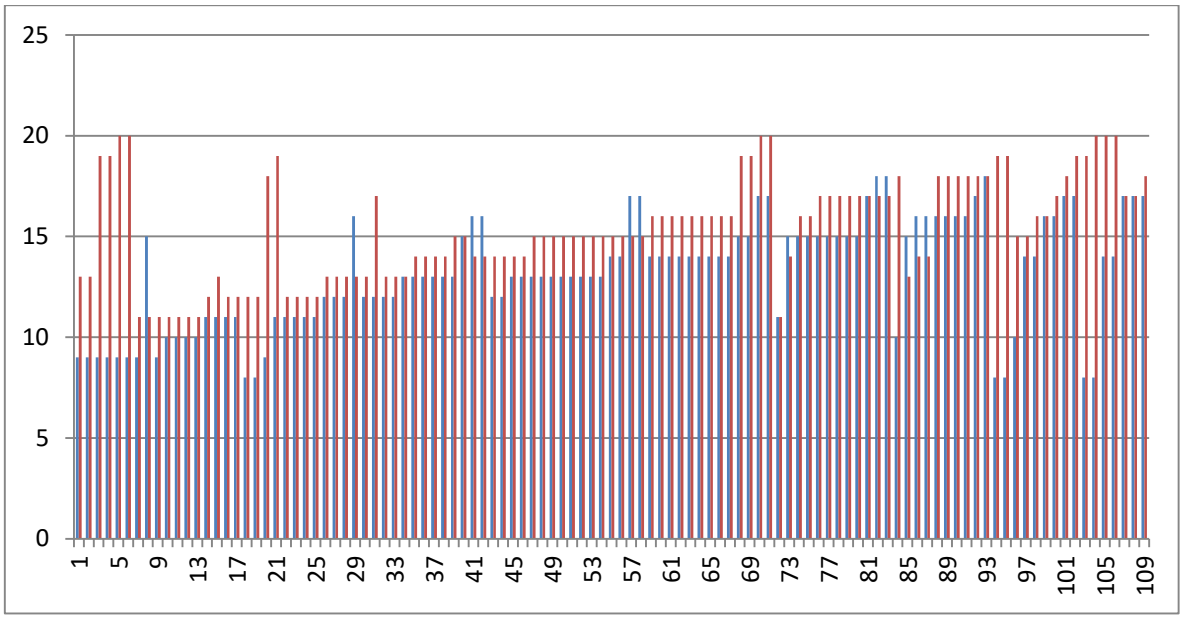

Figure 4. The Difference between Group1 Performances in Pretest and Posttest

Figure 4 made known that bars which stood for the learners performance in pretest (blue bars) were shorter than the bars which stood for their performance in posttest (red bars). It was seen that the participants progressed after the treatment and it was found significant conducting a paired samples *t*-test.

Another paired samples *t*-test was run to discover how the participants of group 2 (the participants who were taught by the teachers who had a high degree of MA) progressed after the treatment.

Table 5. Paired-Samples T-Test for Group 2 Performances in Pretest and Posttest

Mean	Std. Deviation	Std. Error	Mean	t	df	Sig. (2-tailed)
Pretest	12.50	2.81	.28	24.25	97	.000
Posttest	17.07	1.97	.19			

Conducting a paired samples *t*-test made known that the mean score of the learners' performance in preset (*M*=15.50, *SD*= 2.81) was significantly different from the mean score of the participants in posttest (*M*=17.07, *SD*= 1.97), *t*(97)= 24.25, *P*=.000< .05 (two-tailed). It was concluded that the participants progressed in posttest.

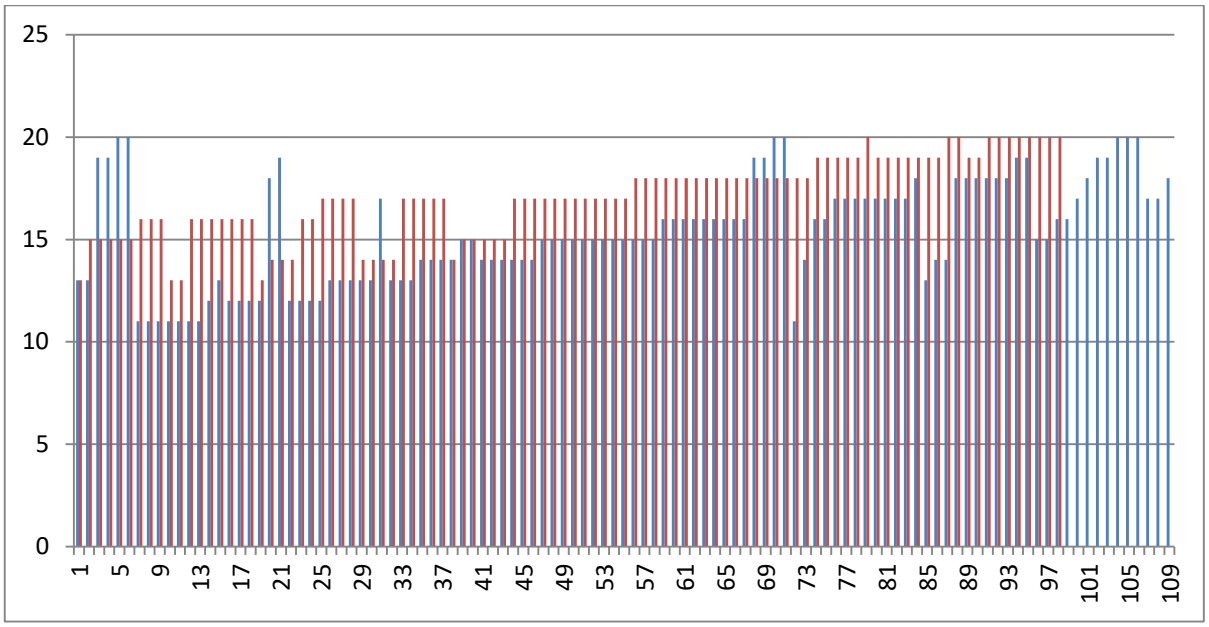

Figure 5. The Difference between Group2 Performances in Pretest and Posttest

Figure 5 indicated that bars which stood for the learners performance in pretest (blue bars) were shorter than the bars which stood for their performance in posttest (red bars). It made known that the participants progressed after the treatment and it was found significant through conducting a paired samples *t*-test.

The results of data analysis showed that both groups significantly progressed in posttest after the treatment. It showed that language learners achieved the target materials in both groups. However, the participants of group 2 whom were taught by teacher with high degrees of MA obtained higher score on posttest than the participants of group 1 whom were taught by teachers with low degrees of MA. The results of data analysis, in which an independent samples *t*-test was conducted, indicated the difference between the mean scores of both groups was significant. The conclusion was that teachers who have higher degree of MA can affect language learners' knowledge of grammar than the teachers who have lower degrees of MA.

5.5 The Effect of Teachers' MA on Language Learner' Critical Thinking

The language learners' performance in critical thinking test before the treatment

The selected language learners took California Critical Thinking Skills Test (CCTST) before the treatment. The test was administered to the language learners of both groups as pretest in order to track their progress at the end of treatment. The pretest was also utilized to homogenize the participants of both groups regarding their critical thinking skills. Thus, after administering the CCTST and scoring the learners, an independent samples *t*-test was run.

Table 6. Independent Samples t-test Pretest of Critical Thinking

Mean	Std. Deviation	Std. Error	Mean	t	df	Sig. (2-tailed)
Group 1	17.03	3.84	.36	.24	205	.804
Group 2	17.16	3.42	.34			

Running an independent samples *t*-test, it was revealed that the mean score of group 1 (M= 17.03, SD= 3.84) was not significantly different from the mean score of group 2 (M= 17.16, SD= 3.42); t(205)= .24, P= 0.0.804>0.05 two-tailed). Thus, it was concluded that the groups were not different before the treatment regarding critical thinking.

5.6 The language learners' performance in critical thinking test after the treatment

In order to discover the language learners' critical thinking changes after the treatment, another independent samples *t*-test was conducted in which the learners' performances of group 1 and group 2 were compared.

Table 7. Independent Samples T-Test for Pretest

Mean	Std. Deviation	Std. Error	Mean	t	df	Sig. (2-tailed)
Group 1	17.24	3.65	.41	.69	205	.621
Group 2	17.43	3.97	.28			

According to table 8, conducting an independent samples *t*-tests showed that there was not a statistically significant difference in scores for group 1 (*M*=17.24, *SD*= 3.65) and group 2 (*M*=17.43, *SD*= 3.97;

t(205)= .69, *P*= 0.621>0.05 two-tailed). Therefore, it was concluded that neither of groups progressed after the treatment concerning critical thinking ability.

The study paid to the effect of teachers' MA on language learners' knowledge of grammar and critical thinking skill. The results of data analysis indicated that the learners whom were taught by the teachers who had a higher degree of MA outperformed the language learners whom were taught by the teacher who had a low degree of MA at the end of treatment. However, there was not a significant difference between these language learners concerning their critical thinking abilities. It means that teacher' MA did not affect their critical thinking skills.

6 DISCUSSION

The results of data analysis showed that the language learners whom were taught by the teachers with high degrees of MA outperformed the learners who were taught by the teachers with low degrees of MA. Teachers' awareness of metacognition, behavior, and instructional management seem to be dealt with their perceptions of the instructional strategies that help learners. The more the teachers used metacognitive strategies, the more likely they were successful in setting up classroom. Language teachers with metacognitive strategies have definite instructional goals and know how to accomplish them. In fact, teachers' metacognitive awareness can promote successful accomplishment of their classroom management. The findings of the study were in line with Leat and Lin (2003) and Okoro and Chukwudi (2011) who showed that the roles of teachers contains the application of inspiring strategies in teaching, taking part in groups and individuals, motivating learners to ask questions, integrating ideas, supporting heuristics and alternative representations, developing and controlling discussion, helping learners to describe themselves, giving feedback, making relationships, and communicating the objectives of the lessons. In short, teachers have the ability to use different metacognitive strategies to promote the learning of students.

Metacognition is vital to the everyday learning process because it refers to the processes that allow people to reflect on their own cognitive abilities. In other words, by the use of its strategies, metacognitive learners are able to remember information, know what they know, or to think about their thinking. Metacognition is a central element in effective teaching and learning. In fact, metacognition can be considered as an essential factor in distinguishing between good and poor language teachers (Rubin, 2005). Teachers can help learners to be aware of strategy classifications and help them to remember the best one while practicing a particular task. Learners must be motivated to reflect upon their tasks and express them during problem solving activities. They also have to be motivated to evaluate themselves while they are doing a task because focusing on self-assessment helps learners to promote the ability to assess their own understanding and to find resources to increase it when necessary. By the same token, teachers give learners

the opportunities to test their strength of character to find out how they are doing and to improve their learning process as required. Without these testing opportunities, the quality of learning can be discouraging which "is not discovered until the end of the project when it is too late to change and revise the process" (Barron et al., 1998, p. 284). Besides, learners must be taught to manage their thoughts; teachers can do it via modeling and explicit teaching of their own thoughts (Leat & Lin, 2007). Generally, pedagogical perception of metacognition refers to the instructional strategies and teaching techniques that will be utilized in specific conditions to gain a teaching objective. Successful metacognitive teaching process considers learner schema, knowledge of strategies, and knowledge of the situations for applying strategies (Griffith & Ruan, 2005).

Thus, there might be some reasons that metacognitive teachers were more successful than other group in helping language learners' progress. First, metacognitive teachers have plan for their teaching. They set goals before starting a class. They determine what the learners' current levels are and what they can be. In doing so, their work is purposeful. When learning process and activities are planned by someone else, it is difficult for students to be self-directed (Blakey & Spence, 1990).

Second, metacognitive teachers constantly generate questions about their work and teaching. In fact, they are reflective teacher. It is important for them to have a good teaching. Thus, they review their work and find out their weaknesses and strengths. They ask language learners and collaborate with their colleagues when there is a problem. As a result, they solve problems and tackle obstacles and finally become successful teachers. This generation of questions makes a relation between background knowledge and new information enables teachers to perceive the unified and interrelated nature of knowledge while facilitating deep understanding of subject matter for both them and language learners (Ornstein & Hunkins, 1998).

Third, metacognitive teachers are selective and focus on meaning. They do not stick to one method of teaching or one type of material to teach to language learners. They seek for different methods of teaching approach and materials which are appropriate for their learners and the context in which they work. Additionally, they are not bookish teachers who just go through the book. They focus on important parts, disorder the book sections, and sometimes remove some parts. They dare add some extra materials to the textbook or focus on some aspects more than other parts. When there is a problem with new materials, metacognitive teachers employ problem solving methods. In this regard, Muijs and Reynolds (2005) introduced reflection as one of the factors of constructivist teaching strategies. They view reflection as the activity learners involve in when they think about problem solving strategies and their efficiency. According to Schoenfeld (1987), whole-class problem solving is considered as enhancing self-regulation because teachers are able to persuade learners to monitor and control decisions made by themselves. Another aspect of whole-class problem solving is the opportunity it provides to present problems.

Forth, metacognitive teachers believe in cooperative learning. They divide language learners into groups of two or more learners. They help them go through the problems and activities, mentor their collaboration, and manage them to accomplish the goals. Cooperative learning gives students the

opportunity to work with each other in small groups to promote learning process. It requires more than group work since group work is regarded as a modification of whole class discussion. In this type of learning, the teacher provides groups with indirect guidance as they work together to gain particular learning outcomes (Killen, 2000). Cooperative learning may increase leaners' awareness about their own personal thinking and of others' thinking. When students act as *tutors*, they make attempts to plan what to teach which leads to independent learning (Blakey & Spence, 1990).

Fifth, classroom management is another characteristic of metacognitive teachers which finally lead to efficient teaching. Metacognitive teachers can manage their classes well and have a good time management. They control the class to teach efficiently and take advantage of opportunities. Classroom management studies by educational psychologists have contributed significantly to the understanding of successful classroom activities. This amount of research as well as other classroom-based studies has improved the relevance of educational psychology for teacher education and teacher educators (Richards, 2011). The emphasis in this body of study is on precise observation, explanation, and evaluation which helped present results that can be interpreted into efficient action plans for teachers and instructors (Rodríguez & McKay, 2010). Increased accessibility of knowledge and information about classrooms has resulted in more appropriate content for teacher education. Some years ago, very little research-based knowledge about management, other than information derived from applied behavior analysis, could be found in basic educational psychology course books. Books allocated to classroom management classroom management were extinct (Hong-Nam, 2014). Nowadays, most textbooks and texts in educational psychology encompass one or two chapters that present basic notions, many of them provide a concrete conceptual overview and there are great numbers of management texts from which to choose (e.g., Good & Brophy, 1997;). Therefore, individuals whose teacher education programs contain a survey course in educational psychology will possess at least an introduction to the declarative knowledge in the field. Moreover, based on a study carried out by Wichadee (2011), in a teacher education program around 37% of learners took a classroom management course.

The last one is discipline. Metacognitive teachers have plans and lesson planes. Teachers, due to their attempts to impose control and achieve discipline play an important role in the educational process. Based on Ur (2012), classroom discipline exists when instructors and learners accept and continuously observe a set of rules dealing with classroom behavior to facilitate an effective teaching and learning. Furthermore and Spahiu (2013) asserted that effective teachers are those who have the ability to listen actively without becoming defensive or oppressive, respect each learner as a human being, avoid win-lose conflicts, focus on positive rather than negative expectation, describe the rationale behind rules and principles, and be able to gain learners' respect. Great numbers of researchers and writers discussed teacher discipline in classroom. Davies (2007) states:

Teacher discipline is to teach children how to do the right thing. This goal is accomplished by seeing limits, giving students responsibility, helping them to develop confidence in their abilities, and teaching them how to solve problems and make good judgments as well as by correcting misbehavior. (p. 3)

Gootman (2001, p. 6) discovered that "teacher discipline holds promises for permanently reducing violence among students because it addresses issues that are at the root of this violence". By the same token, Brown and Vigilante (2005) claimed that teachers require establishing a position of authority from the first day of class. They need to know how to analyze discipline problems appropriately, and then deal with them fast, fairly and in a constant way. This asks for decisive action. Learners require knowing that teachers will have reaction to rule violations and their misconduct will be handled. Being arbitrary or inconsistent is deleterious to successful classroom discipline (Rahimi & Hosseini, 2015).

The results of data analysis indicated that there was no significant difference between the learners whom were taught by the teachers with high degrees of MA and the students whom were taught by the teachers with low degrees of MA regarding critical thinking skill. The reason might be because of time of instruction. Three months sounds not to be enough to changes individuals' critical thinking ability.

7 CONCLUSION

The study intended to examine the role of teachers' MA in improving language learners' knowledge of grammar and critical thinking skill. First, 20 teachers with high and low level of MA were selected. Then, 207 intermediate were selected and were taught by the teachers. The participants took grammar test and critical thinking questionnaire before and after the treatment. The results indicated that teachers' MA affected language learners' knowledge of grammar, whereas it did not affect learners' critical thinking skills.

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