

# A Study of Translation Students' Self-Regulation and Metacognitive Awareness in Association with their Gender and Educational Level

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## Abstract

The present study sought to investigate the probable link between Iranian English translation studies students' metacognitive awareness, self-regulation, and gender. Furthermore, the role of educational level of translation students in metacognitive awareness and self-regulation was explored. For the purpose of the study, a sample of 230 M.A and B.A senior English translation students comprised the participants of the research. They were asked to complete two questionnaires of Metacognitive Awareness Inventory (MAI) and Self-regulation Trait (SRT). The Metacognitive Awareness Inventory (MAI) was developed by Schraw and Dennison (1994) and consists of 52 statements. It measures two components of metacognition: metacognitive knowledge and metacognitive regulation. Metacognitive knowledge comprises three subscales: Declarative knowledge, Procedural knowledge, and Conditional knowledge. Metacognitive regulation consists of five subscales: Planning, Information management, Monitoring, Debugging, and Evaluation. The self-regulation trait (SRT) questionnaire was designed by O'Neil and Herl (1998). It was developed based on Zimmerman's self-regulation model. It consists of 32 Likert-scale questions. The scale seeks to measure metacognition and motivation dimensions. Each dimension comprises two sub-scales. Meta-cognition covers the constructs of planning and self-monitoring, and motivation contains effort and self-efficacy. Independent samples *t*-tests were run to investigate the role of gender and educational level in the level of translation students' metacognitive awareness and self-regulation. The results of *t*-test demonstrated that there are not any differences between male and female translation students regarding metacognitive awareness and self-regulation. It was also found that there is a negative significant impact of educational level on total metacognitive awareness, and some components of metacognitive awareness: declarative knowledge, conditional knowledge, and evaluation. In other words, MA students were shown to have higher levels of metacognitive awareness in comparison with their BA counterparts. Finally, no significant differences between educational level and self-regulation were obtained.

**Keywords:** Gender; Educational Level; Metacognitive Awareness, Self-regulation, Translation studies

## 1. Introduction

Translation has an important place in the development of different societies all over the world. The act of cross-cultural communication is somehow impossible without translation and translators; so, they play a significant role in human interactions. Robinson (1997) stated that "the study of translation and the training of professional translators is without question an integral part of the explosion of both intercultural relations and the transmission of scientific and technological knowledge" (p.2). Recently, some research in Translation Studies have focused on a rather new trend which is called "Translator Studies" (e.g. Chesterman, 2009; Dam & Zethsen, 2008; Diriker, 2004; Fukari & Wolf, 2007; Koskinen, 2008; as cited in Chesterman, 2009). The term "Translator Studies" refers to a research tendency in which the main focus has been shifted to translators rather than translation as a product or process. In this new trend, it can be useful to pay attention to different aspects, one of which can be translators' psychological characteristic.

In the current study, two learner-related psychological factors— metacognitive awareness and self-regulation— are studied. These variables were selected because each of these constructs have significant role in successful learning and in student's achievement (Bandura, 1997; Schraw, 1994; Zimmerman, 1989). In particular, the role of gender and educational level in each of these variables has been investigated in this study.

Metacognitive awareness and self-regulation are psychological factors that cause differences in the performance of students. Educational psychologists have given importance to the term metacognition for couple of decades, because metacognition is important in learning and is a strong predictor of academic success (Kruger & Dunning, 1999).

Metacognition is defined as "an individual's knowledge and control over one's own cognitions" (Schraw & Dennison, 1994, p. 25). Human beings rich in metacognitive awareness are proficient at directing their progress towards targets, finding out their qualities and shortcomings, and adapting their learning strategies appropriately to obtain beneficial outcomes (Flavell, 1979). Research discoveries imply that metacognitive strategies distinguish successful learners from unsuccessful ones. The recent studies confirmed that learners who metacognitively aware perform better than unaware learners (Garner & Alexander, 1989; Pressley & Ghatala, 1990, as cited in Schraw & Dennison, 1994). Mainly because metacognitive awareness helps learners to decide, organize and adjust their learning in a way that improves performance (Schraw, 1994).

Until recently, there has been very little empirical evidence about the ways students become master in their learning, a subject that regarded as self-regulated learning (Zimmerman & Schunk, 1989). Self-regulation is best described as 'self-generated thoughts, feelings, and movements that are arranged and cyclically adapted to the fulfillment of personal goals' (Zimmerman 2000). In the context of education and learning, self-regulatory skills are commonly discovered relevant to students' success and willingness (Zimmerman & Schunk, 2001). Self-regulated learners perform their assignments with certainty, constancy, and resourcefulness. They are aware of their capabilities and skills. In contrast with passive students, once self-regulated learners face troubles which can include inadequate learning situations, misleading trainers, or the insufficient source, they realize how to make it. For these students, acquisition is a systematic and manageable procedure. Self-regulated learning (SRL) is a pivotal field of research in college learning and teaching (Pintrich, 1995).

Although metacognitive awareness and self-regulation as psychological factors have recently gained attention in higher educational research, these constructs have rarely been investigated in the realm of translation studies.

Researchers have always claimed that translation has to do with translators' talents and consider translation as an art, not only a technique (Ghanavati, 2008). Studying the impact of different translation strategies on the process and product of translation is considered as one of the important aspects of translator studies, since it is very important for translation teachers and evaluators to consider different aspects of translators' mind in order to teach and evaluate more delicately. Therefore, it is necessary to focus on students mental, cognitive and communicative skills.

Metacognitive awareness and self-regulation are cognitive skills which can impact performance and are typically classified as factors liable for individual differences. In other words, these variables are different across individuals and tend to vary according to personal factors, such as, gender, personality, experience, educational background, and so on.

As far as the researchers of the present study looked for, there was no documented study on the metacognitive awareness and self-regulation of translator students with respect to their personal factors. So the main problem addressed in this study is assessing and analyzing metacognitive awareness and self-regulation as individual variables among translation students. In particular, it seeks to explore these two achievement-associated constructs in relation to two personal factors, i.e., gender and educational level. In other words, we aimed to examine whether these constructs vary between male and female translators and whether they develop as translators advance to higher educational level. To see the progression of these possible fluctuations, statistical analyses were run not only for each variable but also for the comprising subscales of each.

## **2. Research on Metacognitive Awareness**

One of the difficulties in carrying out research into metacognition is the diversity of related concepts that can be found in the literature referring to the same phenomenon: metacognition, metacognitive knowledge, learner beliefs, and consciousness-raising or awareness-raising. It is important to highlight the fact that metacognition is a multidimensional phenomenon (Schraw, 1998). Flavell (1970) defined Metacognition as an individual's knowledge and control over one's own cognitions and also Schraw put it in this way "the ability to reflect upon, understand and control one's learning" (Schraw & Dennison, 1994). Two categories were distinguished for metacognition, including knowledge of cognition and regulation of cognition (Flavell, 1979). He classified knowledge of cognition into three categories: person, task, and strategy knowledge. Person refers to general knowledge one has about human beings' cognitive capabilities. Task is the knowledge about the nature of the task and finally strategy indicates the knowledge about strategies that may be useful for different tasks and in different situations.

However, some other researchers such as Schraw (1994) have differently categorized components of metacognition. Accordingly, three types of knowledge are proposed: declarative knowledge or the knowledge about self and about strategies; procedural knowledge which is the knowledge about how to use strategies and conditional knowledge which relates to knowledge of when and why to use strategies. Regulation of cognition includes a set of sub-processes that regulate and facilitate the control of aspects of learning (Schraw & Dennison, 1994). The skills of this component are planning, monitoring and evaluation (Schraw, 1998). Planning includes goal setting and choosing the appropriate strategies before involving in learning. Monitoring is consideration of learning, task performance and the use of strategy while engaging in an activity. Evaluation is an assessment of learning outcomes and strategies to examine whether the goals have been achieved (Schraw, 1998).

Developing metacognition is necessary for academic achievement. Research on the history of metacognition demonstrate that learning and metacognitive awareness were associated since the goal of metacognition is regulating and directing learning. Recent research indicates that metacognitively aware learners are more strategic and perform better than unaware learners (Garner & Alexander, 1989). Most researchers agree to provide learners with the best environment to benefit from metacognitive training to improve their metacognition and academic performance. "The

majority of investigations into classroom interventions which incorporate metacognition as a part of their programs consider the impact of metacognitive training on EFL learners' academic success" (Coutinho, 2007; Kassaian & Ghadiri, 2011; Mohammadi Ghavam, Rastegar, & Razmi, 2011; Negretti & Kuteeva, 2011; Sheorey & Mokhtari, 2001; Vandergrift, 2005; Zhang & Wu, 2009; as cited in Heidari & Bahrami, 2012). One of the studies that investigate the relationship between metacognition and learning achievements is Coffey (2010) who found that good metacognitive awareness lead to success in writing. On the other hand, Young and Fry (2008) concluded that there are correlations between metacognition and college students' Grand Point Average (GPA).

### 3. Research on Self-regulation

Self-regulation is the control that ones have over their cognition, behavior, emotions and motivation through the use of personal strategies to achieve the goals they have established. In accordance with Bandura's social cognitive theory, self-regulation is the reciprocal interaction among personal, behavioral and environmental aspects (Zimmerman, 1998, 2000). Relying on this theory, Zimmerman states that when learners become metacognitively, motivationally and behaviorally active participants in their own learning procedure, we can define them as being self-regulated (Zimmerman, 1989, 1990).

Three aspects of self-regulation are as follows: (Zimmerman, 1989):

*Self-Regulation of Behavior:* Learners are in active authority over the resources that are obtainable to them which can include the right time, their study condition (e.g., the place in which they study), classmates or colleagues, having access to academic support namely faculty members to help them (Garcia & Pintrich, 1994).

*Self-Regulation of Motivation and Affect:* Learners can adjust themselves to the requirements of the training programs by modifying motivational beliefs particularly self-efficacy and goal orientation. In addition, students can learn to control their emotions and affect in ways that improve their learning. Self-efficacy concepts necessarily mean the learner's perception of ability to organize and perform activities to obtain an academic objective (Bandura, 1997). Self-efficacy also is related to students' assurance in their cognitive, emotional and learning competencies in doing an activity. Goal orientation is comprised of two aspects: mastery goal orientation and extrinsic orientation. A mastery goal orientation is best described as applying self-set guideline and self-improvement to learning and mastering the task. Extrinsic orientation is connected with the prevailing criterion to obtain resource investments; that is to say anticipated encouragement or avoiding punishment (Pintrich, 1999).

*Self-Regulation of Cognition:* requires the management of several cognitive strategies for learning, such as applying of profound processing strategies in order to better learning and performance than students showed previously.

Zimmerman (2000) suggested three recurring phases for self-regulation process with the inclusion of forethought, performance (volitional control) and self-reflection. Forethought phase or pre-action phase is the primary stage in which learners get closer to the task. These stages contain setting goals, choice of strategies and techniques evaluating self-efficacy, assessing mastery or goal orientation and discovering interest. In performance phase is dealt with the action. Learners' focus on the task is essential to improve their performance during concentrating (excluding distractions and other competing attentions), self-instruction and self-monitoring of progress. The last stage is self-reflection or post-action phase. It signifies the employment of guidelines to create self-judgments concerning the performance together with self-evaluation on a standard or goal, attributions to skill or attempt, self-reactions and adjustments.

Research reveals the fact that self-regulated learning to be appropriately associated with academic achievement. Empirical studies indicated a significant relationship between academic success and the use of regulatory skills and an understanding of how to use these skills (Cross & Paris, 1988; Zimmerman & Schunk, 2001). The use of adequate self-regulatory learning strategies is fundamental for students to have academic success in higher education (Sitzmann & Ely, 2011). According to Zimmerman (1989), self-regulated learners can set goals actively, find well suited strategies, manage their time, arrange materials and information, observe their learning and look for feedback on their performance. EFL teachers' self-regulation has been found to be associated with effective teaching (Monshi Toussi, Boori, & Ghanizadeh, 2011), teacher self-efficacy (Ghonsooly & Ghanizadeh, 2013), and critical thinking (Ghanizadeh, 2011). In another research, the relationship between self-efficacy and self-regulation in vocabulary acquisition with Iranian EFL learners was investigated. The result indicated that there is a significant relationship between self-efficacy and self-regulation in vocabulary acquisition among the participants (Haji Hassan Hamedani, 2013). Furthermore, it has also been found that self-regulation has a contributing role in enhancing EFL teachers' sense of self-efficacy (Ghonsooly & Ghanizadeh, 2013).

Based on the theoretical contentions stated earlier, learners' metacognitive awareness and self-regulation are important characteristics to consider in understanding academic success. So delving into these constructs deserves specific attention. In this study, the mediating roles of translation studies students' gender and educational level in self-regulation and metacognitive awareness were examined.

### 4. Research Questions

The following research questions were posed and investigated in the present study:

1. Is there any significant relationship between translation students' metacognitive awareness and their gender?
2. Is there any significant relationship between translation students' self-regulation and their gender?
3. Is there any significant relationship between translation students' metacognitive awareness and their educational level?
4. Is there any significant relationship between translation students' self-regulation and their educational level?

## 5. Method

### 5.1 Participants

The participants of this study were students in Translation Studies with two different levels B.A and M.A. The participants were selected from the students studying Translation Studies at Ferdowsi university of Mashhad, Imam Reza International University of Mashhad, and Quchan Azad University. A community sample of 230 students including 150 females and 80 males participated in this study. Due to participants' unwillingness or difficulty and time consuming procedure of participation, they did not fully cooperate in the research and the above number of participants decreased to 170. Out of 170 students, 105 were females and 65 males and also 100 were M.A and 70 were B.A (senior) students. Native language of participants was Persian. The average age of participants was 24; the youngest was 20 and the oldest was 38 years old ( $M=24.64$ ,  $SD=3.68$ ). Participation in this study was on a voluntary basis.

### 5.2 Instruments

Two major instruments were utilized in this phase:

#### 5.2.1 Self-Regulation Trait (SRT) Questionnaire

Students' self-regulated learning was measured by the self-regulation trait (SRT) questionnaire. The self-regulation trait (SRT) questionnaire was designed by O'Neil and Herl (1998). It was developed based on Zimmerman's self-regulation model. It consists of 32 Likert-scale questions ranging from *almost never*, to *sometimes*, *often*, and *almost always*. The scale seeks to measure metacognition and motivation dimensions. Each dimension comprises two sub-scales. Metacognition covers the constructs of *planning* and *self-monitoring*, and motivation contains *effort* and *self-efficacy*. The four scales are measured by 8 Likert-type items each. According to Herl et al (1999), the reliability and validity of the scale have been verified in multiple studies.

#### 5.2.2 Metacognitive Awareness Inventory (MAI)

Schraw and Dennison (1994), who themselves built on Flavell's work to create their Metacognitive Awareness Inventory to measure students' metacognitive awareness. The MAI consists of 52 statements in a five point Likert scale type. The two components of metacognition discussed above are represented within the scale, metacognitive knowledge and metacognitive regulation. Within the MAI these are referred to as the *knowledge of cognition* factor and the *regulation of cognition* factor. Within the inventory there are 17 questions related to the knowledge of cognition factor for a possible point total of 85. There are 35 questions related to the regulation of cognition factor for a possible point total of 175. The factor scores are calculated by adding the scores on questions related to each of the factors. Higher scores correspond to greater metacognitive knowledge and greater metacognitive regulation. In addition to the knowledge of cognition score and the regulation of cognition score a MAI total score is derived by summing responses to all 52 questions. The instrument was designed for use on adult populations. Operational definitions of component categories of this inventory are presented below:

#### *Knowledge of Cognition*

1. Declarative knowledge: knowledge about one's skills, intellectual resources, and abilities as a learner.
2. Procedural knowledge: knowledge about *how* to implement learning procedures (e.g., strategies).
3. Conditional knowledge: knowledge about *when* and *why* to use learning procedures.

#### *Regulation of Cognition*

1. Planning: planning, goal setting, and allocating resources *prior* to learning.
2. Information management: skills and strategy sequences used on-line to process information more efficiently (e.g., organizing, elaborating, summarizing, selective focusing).
3. Monitoring: assessment of one's learning or strategy use.
4. Debugging: strategies used to correct comprehension and performance errors.
5. Evaluation: analysis of performance and strategy effectiveness after a learning episode.

(Schraw & Dennison, 1994, p. 474)

### 5.3 Procedure

Data collection process started in September 2014. After identifying the sample of participants, they were asked to complete the self-regulation questionnaire including 32 items. Simultaneously, they were given metacognitive awareness questionnaire. Then they were asked to complete the questionnaires in their spare time carefully and honestly.

## 6. Results

The results of applying the methodology are presented and analyzed in order to extract meaningful data from the raw statistics. These findings are then discussed to clarify how they can contribute to the purpose of the study.

### 6.1 Descriptive Statistics

To investigate the normality of the distribution, descriptive statistics for the scale-level data of the Metacognitive Awareness inventory, Self-regulation Trait questionnaire and translation Ability were analyzed based on the 170 participants. Table 1 presents descriptive statistics of translation students' metacognitive awareness, self-regulation.

Table 1. Descriptive Statistics for the Scale-level Data of the Questionnaires

Measured Variables	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Declarative knowledge	170	17.00	39.00	29.1706	5.13951	-.419	-.468
Procedural knowledge	170	6.00	20.00	14.0000	2.64910	-.460	.135
Conditional knowledge	170	8.00	25.00	18.1235	3.53378	-.420	-.285
Planning	170	12.00	34.00	24.7882	5.00555	-.265	-.551
Information Management Strategy	170	19.00	47.00	35.4824	6.31072	-.451	-.392
Comprehension Monitoring	170	14.00	34.00	24.7471	4.25526	-.355	.009
Debugging Strategy	170	7.00	25.00	18.5471	3.64564	-.609	.131
Evaluation	170	11.00	28.00	20.7647	3.89400	-.502	-.138
Total Metacognitive Awareness	170	108.00	244.00	185.6235	29.37756	-.471	-.147
Planning	170	14.00	31.00	21.7059	3.97574	.066	-.685
Self-monitoring	170	14.00	30.00	22.4059	4.02286	-.260	-.880
Effort	170	13.00	31.00	22.1765	4.08975	.029	-.676
Self-efficacy	170	11.00	34.00	22.2824	4.07942	.218	-.044
Total Self-regulation	170	58.00	123.00	88.5706	14.42008	-.008	-.687

### 6.2 Result of the Relationship between Variables and Gender

To examine whether there is any significant difference between males and females regarding their metacognitive awareness, an independent samples t-test was run. Table 2 presents the results.

Table 2. The Results of Independent T-Test for Determining the Role of Gender in Metacognitive awareness and its components

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
DEC	.168	167	.867	.13654	.81310
PRO	.251	167	.802	.10577	.42057
CON	.532	167	.596	.29808	.56049
PLN	.371	167	.711	.29231	.78778
IMS	.419	167	.676	.41731	.99643
MON	.364	167	.716	.24423	.67069
DEB	.877	167	.382	.50577	.57699
EVA	.383	167	.702	.23654	.61783
TOTAL	.482	167	.630	2.23654	4.63766
MA					

As Table 2 indicates, there were no significant differences between gender and the subscales of metacognitive awareness as follows: declarative knowledge ( $t=.167$ ,  $p>0.05$ ), procedural knowledge ( $t=.255$ ,  $p>0.05$ ), conditional knowledge ( $t=.538$ ,  $p>0.05$ ), planning ( $t=.371$ ,  $p>0.05$ ), information management strategy ( $t=.430$ ,  $p>0.05$ ), comprehension monitoring ( $t=.362$ ,  $p>0.05$ ), debugging strategy ( $t=.924$ ,  $p>0.05$ ), evaluation ( $t=.387$ ,  $p>0.05$ ) and total metacognitive awareness ( $t=.495$ ,  $p>0.05$ ). This can be figured out by examining the magnitude of  $t$  which should be higher than that of critical  $t$ , and the amount of  $p$ -value which should be lower than 0.05.

Independent samples *t*-tests were run to investigate the role of gender in the level of participants' self-regulation. As indicated in Table 3, there is no impact of gender on self-regulation and any of its subscales. In other words, male and female do not differ in their level of self-regulation. The *t*-value for each factor is: planning ( $t = .475, p > 0.05$ ), self-monitoring ( $t = .264, p > 0.05$ ), effort ( $t = .178, p > 0.05$ ), self-efficacy ( $t = .181, p > 0.05$ ), and total self-regulation ( $t = .308, p > 0.05$ ).

Table 3. The Results of Independent T-Test for Determining the Role of Gender in Self-regulation and its components

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Planning	.486	167	.628	.30577	.62973
Self-monitoring	.270	167	.788	.17115	.63459
Effort	.178	167	.859	.11538	.64775
Self-efficacy	.176	167	.861	.11346	.64622
TOTAL Self-regulation	.310	167	.757	.70577	2.27923

### 6.3 Result of the Relationship between Variables and Educational level

To examine whether there is any significant difference between BA and MA students regarding their metacognitive awareness, an independent samples *t*-test was run. Table 4 presents the results.

Table 4. The Results of Independent T-Test for Determining the Role of Education level in Metacognitive Awareness and its Components

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
DEC	-2.206	168	.029	-1.74714	.79192
PRO	-1.897	168	.060	-.77714	.40970
CON	-2.631	168	.009	-1.42429	.54130
PLN	-.783	168	.435	-.61143	.78095
IMS	-1.809	168	.072	-1.76714	.97691
MON	-1.893	168	.060	-1.24571	.65812
DEB	-.567	168	.571	-.32286	.56928
EVA	-2.374	168	.019	-1.42143	.59868
TOTAL MA	-2.054	168	.041	-9.31714	4.53515

As indicated in Table 4, there is a negative significant impact of educational level on total metacognitive awareness ( $t = -2.065, p > 0.05$ ), and some components of metacognitive awareness. In other words, MA students were shown to have higher levels of metacognitive awareness in comparison with their BA counterparts. There are significant impacts on:

declarative knowledge ( $t= -2.203, p>0.05$ ), conditional knowledge ( $t= -2.611, p>0.05$ ) and evaluation ( $t= -2.409, p>0.05$ ).

Table 5. The Results of Independent T-Test for Determining the Role of Educational level in Self-regulation and its Subscales

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
<b>Planning</b>	-.839	168	.403	-.52000	.62012
<b>Self-monitoring</b>	-.945	168	.346	-.59286	.62711
<b>Effort</b>	-.584	168	.560	-.37286	.63859
<b>Self-efficacy</b>	-.831	168	.407	-.52857	.63632
<b>TOTAL Self-regulation</b>	-.896	168	.372	-2.01429	2.24852

As Table 5 shows, there were no significant differences between educational level and self-regulation and its subscales. In other words, M.A and B.A do not differ in their level of self-regulation as follow: planning ( $t= -.845, p> 0.05$ ), self-monitoring ( $t= -.936, p> 0.05$ ), effort ( $t= -.589, p> 0.05$ ), self-efficacy ( $t= -.863, p> 0.05$ ), and total self-regulation ( $t= -.905, p> 0.05$ ).

## 7. Discussion & Conclusion

The present research sought to probe the role of gender and educational level in translation students' metacognitive awareness and self-regulation.

No significant relationship was found between the degree of translation students' metacognitive awareness and gender. The findings indicated that generally both males and females use their metacognitive skills in translation. That is, the metacognitive awareness strategies were not dependent on gender. Some researchers suggested that there are differences regarding males' and females' metacognitive skills (Logan & Johnston, 2009; Ozkan & Hatice, 2013), while others suggest that these differences are not significant (e.g. Berkant's, 2009; Benson, 2001; Vianty, 2007). A study by Rahman, *et al.* (2010) supported the findings of the present study indicating that there was no significant difference between metacognition of male and female science students. Also, the result is collateral with the finding of research study by Zulkiply (2006), who found that there is no significant difference in metacognition awareness between male and female across all academic years. On the other hand, the finding of this study is in contrary with Miller (2000) who found out that girls have more metacognitive skills in Mathematics compared to boys.

The results also indicated that there was no significant difference between male and female students in using self-regulated strategies. Thus, it can be contended that the students who participated in this study had developed the skills of being proactive in self-management and to taking initiative in making decisions (Zeidner, Boekaerts & Pintrich 2000) irrespective of gender. Not much is known about any previous literature that showed clear evidence on gender difference in self-regulation. Perhaps more studies are needed to be done on this issue.

The result revealed that there was a negative significant relationship between metacognitive awareness and educational level. Also some components of metacognitive awareness (declarative knowledge, conditional knowledge and evaluation) showed negative significant relationship. It indicated that M.A translation students have more knowledge about their skills, how to implement learning procedures, and analysis of performance. In other words, MA students were shown to have higher levels of metacognitive awareness in comparison with their BA counterparts. This would appear to suggest that students' metacognition in relation to their grade level tends to increase over time and with every year of educating. Data demonstrated that a higher education level corresponds to a higher metacognitive awareness. In other words, the more a translation student is educated and experienced, the more s/he tends to have knowledge about cognition and regulation of cognition. The results also provided a mean of support to previous research on the relationship of metacognitive awareness and academic achievement. The results of the study indicated that metacognition might play an important role in academic achievement of the translation students.

Building upon the results of the current study, there was not any difference in scores on self-regulation between M.A and B.A translation students. There was not a significant difference between these two groups. Given that, to the researcher's best knowledge, there is no documented study exploring the role of educational level in translation students' perceived self-regulation, no cross comparison can be made with reference to previous translation related research. We can convincingly conclude that the issue of educational level differences in self-regulation does not appear to generalize to translation and both B.A and M.A translation students deploy somewhat similar self-regulation strategies.

Improvements in translation, assessment of metacognitive awareness and self-regulation, and consistent and explicit training of students may increase students' metacognition regardless of gender and educational level. Further research is needed in the area of translation students' metacognitive awareness and self-regulation. Applying multiple indicators of metacognition and self-regulation, such as self-report inventories and reflection-in-action methods would lead to more validity of the results. M.A translation educators require an understanding of the definition and strategies of metacognition. More studies should investigate the transfer of metacognitive skills to practical settings and the instructional strategies to improve metacognition of translation students in higher education.

It is also suggested that future research replicate this study using a larger number of translation students and compare different ages or ethnic groups. Although this research studied about gender, there were imbalances in the number of male and female participants. The researcher recommends that future research put more effort in balancing the proportion of males and females.

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