The Relationship among Listening Performance, Metacognitive Strategy Use and Motivation from a Self-determination Theory Perspective

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Abstract—The purpose of this study was to investigate the relationship among metacognitive strategy use, motivation and listening test performance of EFL university students. The participants were 82 students majoring in English translation and literature at Allameh Tabataba’i and Shahid Beheshti Universities in Tehran, Iran. Data were collected using three instruments: MALQ (metacognitive awareness listening questionnaire), AMS (academic motivation scale), and the listening section of the TOEFL. After administering the listening section of the TOEFL (pre-test), students filled in the MALQ and AMS. A statistically significant correlation was found between metacognitive strategy use and listening performance, listening performance and intrinsic motivation, as well as metacognitive strategy use and intrinsic, extrinsic motivation.

Index Terms—listening, metacognitive strategies, motivation, self-determination theory

I. INTRODUCTION

Language learners differ in many ways and are affected by many social and psychological factors. Researchers have identified a lot of individual variables that affect learning outcome. Among these variables, motivation and learning strategies are two crucial factors which have been investigated by researchers in second and foreign language learning. Although different classifications have been proposed for learning strategies, cognitive and metacognitive strategies are considered the most important language learning strategies by several researchers (O’Malley, Chamot, Stewner-Manzares, Kupper & Russo, 1985; Oxford, 1990; Skehan, 1989). Different theories of motivation have been identified which influence the field of language learning. Both of these variables are explained briefly in the following sections.

A. Motivation

According to most teachers and researchers, motivation has a very significant role in determining success or failure in any type of learning. Masgoret and Gardner (2003) state that a motivated individual expands endeavor, is determined and attentive to the task, has goals and desires, enjoys the activity and experiences reinforcement from success and disappointment from failure and makes use of strategies to assist in attaining aims. Motivation plays an active role in the process of second or foreign language learning. Many L2 researchers argue that L2 learning is intertwined with many affective variables, among which attitudes and motivation are important predictors of learning achievement. As Csizer and Dornyei (2005) argue, there exists a universally accepted belief that motivation plays a crucial role in the sustained process of mastering an L2. Nunan (1991, p.131) regards motivation as a key factor which determines “the amount of effort a learner is ready to put into language learning.” Ellis (2008), in an overview of research on motivation, asserted that motivation affects the extent to which language learners persevere in learning, what kinds of behavior they exert, and their actual achievement. Dornyei (2001) states that a learner with enough motivation is likely to gain an acceptable knowledge of an L2 despite his language aptitude or other cognitive characteristics. Even the brightest student without enough motivation is unlikely to persist long enough to achieve any really useful language.

B. Self-determination Theory

Self determination theory was developed by Deci and Ryan at the University of Rochester. Their published book in 1985, Intrinsic Motivation and Self-Determination in Human Behavior, initially outlined the basic concepts of their theory. In its basic form, human motivation is assumed to exist on a six-point continuum, ranging from amotivation on the left, through four categories of extrinsic motivation, to three categories of intrinsic motivation on the right. The four categories of extrinsic motivation, i.e. external regulation, introjected regulation, identified regulation and integrated regulation are listed in order of their degree of internalization and self-regulation. The three categories of intrinsic
motivation are identified as IM to know, to accomplish things, and to experience stimulation.

Intrinsic motivation is defined as the doing of an activity for its inherent satisfaction rather than for some separable reason. “When intrinsically motivated, a person is moved to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards” (Ryan and Deci, 2000, p. 56). Furthermore, intrinsic motivation is viewed as innate and universal and arises out of three basic psychological needs:

- A need to strive for self-autonomy
- A need to strive for competence
- A need to strive for relatedness

Vallerand et al. (1992) describe more fully the categories of IM. They define IM as “the fact of performing an activity for the pleasure and the satisfaction that one experiences while learning, exploring, or trying to understand something” (p. 1005). IM to accomplish things is defined as “the fact of engaging in an activity for the pleasure and satisfaction experienced when one attempts to accomplish or create something” (p. 1005). “Finally, IM to experience stimulation is operative when someone engages in an activity in order to experience stimulating sensations (e.g., sensory pleasure, aesthetic experiences, as well as fun excitement) derived from one’s engagement in the activity” (p. 1006).

Deci and Ryan (1985, 2000) describe extrinsically motivated behaviors as those behaviors that are performed not because of inherent interest in the activity, but in order to arrive at some instrumental end, such that the source of regulation is external to the activity per se. Researchers believed originally that extrinsic motivation implied a lack of self-determination in the behaviors performed. EM has four subtypes depending on its degree of self-determination:

- External regulation. This is the least autonomous form of extrinsic motivation and includes being motivated by external reward or punishment. Internalization, if it occurs, is unstable in nature and tends to disappear once external rewards or punishments are removed.
- Introjected regulation. The individual begins to internalize the reasons for his or her actions. However, this form of internalization, while internal to the person, is not truly self-determined since it is limited to the internalization of past external contingencies.
- Identified Regulation. This is a more self-determined form of motivation as there is a conscious acceptance of the behavior as personally important, and especially that it is perceived as chosen by oneself.
- Integrated Regulation. This is the most self-determined form of extrinsic motivation. External regulation has been internalized and entirely integrated within the self and brought into congruence with needs and values that already become part of the self. Thus, this form of motivation shares many of the same qualities as intrinsic motivation, but it is still considered extrinsic as activities performed for this kind of motivation are driven by external regulation and not done for their inherent interest or enjoyment (Deci and Ryan, 1985).

In the continuum of motivation, Deci and Ryan (1985) mention one more category called amotivation. This is a state in which people lack the intention to behave, and thus lack motivation. “Students with this motivational style would be very unmotivated for school due to the low value, efficacy, and internal control they feel for school activities” (Brown, 2002, p. 262).

C. **Metacognition**

Metacognition is a term that was coined by Flavell in 1970. Metacognition has been defined simply as thinking about thinking, cognition of cognition, or using Flavell's words, "knowledge and cognition about cognitive phenomena" (p.906). In a language learning context, this means knowing about oneself as a learner, i.e. the knowledge and self-awareness a learner has of his or her own language learning process, and is regarded as the key to successful language learning. It is used to refer to one’s understanding of and control over his or her own cognitive processes by planning, choosing and monitoring (Carrell, 1998; Carrell et al., 1998; Flavell, Miller, & Miller, 1993; Hartman, 2001; Hudson, 1998; Veenman, Van Hout-Wolters, & Afflerbach, 2006). According to Flavell (1979), two basic elements comprise metacognitive awareness, namely metacognitive knowledge and metacognitive regulation. The individual's beliefs about oneself and about others as learners and of the requirements involved in the learning process relate to metacognitive knowledge. It is divided into three categories: (a) personal knowledge, (b) task knowledge, and (c) strategic knowledge. Flavell (1979) includes two dimensions of person knowledge: intrapersonal differences and interindividual differences (knowledge of personal styles, abilities, and so forth, of oneself and of others), and universal of cognition (knowledge of human 'attributes influencing learning). According to Wenden (1991), task knowledge requires four aspects: (a) Knowledge about the purpose of a task (what is the objective in performing a given task?), (b) Knowledge about task demands (what resources and steps are necessary and what is the degree of difficulty involved?), (c) Knowledge about the nature of the task (what kind of learning is it?) (d) Awareness of the need for deliberate learning (Does it involve the use of self-regulatory or metacognitive strategies?). Strategic knowledge, as Livingston (1997) states, includes "knowledge about both cognitive and metacognitive strategies, as well as conditional knowledge about when and where it is appropriate to use such strategies" (pp.1-2).

Anderson (2002) proposed five components of metacognition: “(1) preparing and planning for learning, (2) selecting and using learning strategies, (3) monitoring strategy use, (4) orchestrating various strategies, and (5) evaluating strategy use and learning” (p. 1). Pintrich (2002), however, identified just three types of metacognition: knowledge about strategies, cognitive tasks, and self. Learners’ metacognitive knowledge helps them identify what strategies to use.
When faced with new learning situations, learners can pull from their metacognitive knowledge and choose a strategy that will help them succeed in the task at hand. “Strong metacognitive skills empower second language learners” (Anderson, 2002, p. 2).

D. Motivation and Achievement

Noels, Clement, and Pelletier (1999) investigated the link between motivation orientations and final grades. Seventy-eight students, who had registered in a summer French immersion course, completed a questionnaire assessing several constructs including intrinsic/extrinsic motivation and amotivation. No significant relationship was found between intrinsic, extrinsic motivation, amotivation, and final grades. Even external and introjected regulations (sub-types of extrinsic motivation) were negatively correlated with final grades.

Noels, Clement, and Pelletier (2001) explored the relationship between motivation orientations and final course grades. The participants were 59 students in a summer immersion program at a French-English bilingual university in Ontario, Canada. The participants ranged in age from 18-47 years. A questionnaire consisting of several scales was utilized to assess the motivation preferences of students. The respondents rated the extent to which the proposed reason included in the questionnaire applied to themselves by using a seven-point scale varying from one (does not correspond at all) to seven (corresponds completely). They found a significant correlation between intrinsic motivation and final course grades. The correlation between extrinsic motivation and final course grades, however, was not significant. Besides, a negative correlation was found between amotivation and final course grades.

Vandergrift (2005) examined the relationship among motivation, metacognition, and proficiency in listening comprehension. Participants were 57 adolescent learners of French who completed two questionnaires. A motivation questionnaire assessed student responses to three orientations related to motivation: amotivation, intrinsic, and extrinsic. A metacognitive awareness questionnaire assessed the metacognitive strategies used by students when listening to authentic texts in French. Listening proficiency was determined by a listening comprehension test. The results of the study revealed that listening proficiency correlated negatively with amotivation. There was no significant correlation between intrinsic/extrinsic motivation and listening proficiency.

E. Motivation and Learning Strategies

Bacon and Finnemann (1990) investigated the relationship between attitudes, motives, and strategies of university foreign language students. The results revealed that motivation played a role in the choice of strategies. Students who were not instrumentally motivated used more global/synthetic strategies, but avoided the use of decoding/analytic comprehension strategies.

Oxford and Ehrman (1995) examined the relationship between language learning strategies and factors such as proficiency, teacher's perception, gender, aptitude, learning style, personality type, ego boundaries, motivation and anxiety. They found a significant correlation between learning strategies and total motivation. A significant correlation was also found between strategies and intrinsic motivation. The use of metacognitive strategies was positively correlated with intrinsic motivation.

Braten and Olaussen (1998) investigated the relationship between motivational beliefs and use of learning strategy among Norwegian learners. It was found that when students perceive intelligence as a relatively important quality, they tend to use more learning strategies.

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F. The Present Study

In the Iranian context, very few studies have been conducted to investigate the relationships between motivation from self-determination theory perspective and metacognitive strategies proposed by Vandergrift et al. (2006). Besides, the number of studies exploring the effect of these variables on the listening skill is relatively few. In order to bridge this gap, the present study was carried out to investigate the relationship among listening performance, metacognitive strategy use and motivation. The following research questions, therefore, guided the study:

1. Is there any relationship between listening performance of EFL students and metacognitive strategy use?
2. Is there any relationship between listening performance of EFL students and different orientations to motivation?
3. Is there any relationship between metacognitive strategy use and different orientations to motivation?

II. METHODOLOGY

A. Participants

The participants for this study were 82 students of English majoring in English Translation and English Literature at Ontario, Canada. The participants ranged in age from 18-47 years. A questionnaire consisting of several scales was utilized to assess the motivation preferences of students. The respondents rated the extent to which the proposed reason included in the questionnaire applied to themselves by using a seven-point scale varying from one (does not correspond at all) to seven (corresponds completely). They found a significant correlation between intrinsic motivation and final course grades. The correlation between extrinsic motivation and final course grades, however, was not significant. Besides, a negative correlation was found between amotivation and final course grades.

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Allameh Tabataba’i and Shahid Beheshti Universities in Tehran, Iran. They were both male and female freshmen whose age ranged from 18 to 23. Ten students failed to fill in all the questionnaires completely, so for the last three questions the data collected from 72 students was subject to statistical analyses.

B. Instrumentation

1. Listening Section of the TOEFL
The first instrument used in this study was the listening section of the TOEFL. It was used to measure the listening performance of both control and the experimental groups. It consisted of 50 multiple-choice questions.

2. Metacognitive Awareness Listening Questionnaire
The second instrument was the Metacognitive Awareness Listening Questionnaire developed by Vandergrift, Goh, Mareshal, Tafaghodtari (2006) and designed to assess second language listeners’ metacognitive awareness and perceived use of strategies while listening to oral texts. It is a 21-item instrument with five distinct metacognitive factors: problem-solving, planning and evaluation, mental translation, person knowledge, and directed attention. Subjects should respond to items using a 6-point Likert scale ranging from “strongly agree” to “strongly disagree.” Vandergrift et al (2006) conducted an exploratory and confirmatory factor analysis on two large and different samples of language learners in order to demonstrate the strength of a five-factor model underlying the MALQ. Finally, they were able to demonstrate a significant relationship between MALQ scores and actual listening behavior. To make the items easy to understand, the researcher translated the questionnaire into Persian and it was back-translated by an expert in the field. The translated version was piloted with thirty students. The Cronbach alpha reliability index turned out to be 0.82.

3. The Academic Motivation Scale
The third data collection instrument was the Academic Motivation Scale (AMS) developed by Vallerand et al. (1992). It is based on the tenets of self-determination theory and composed of 28 items subdivided into seven sub-scales, assessing three types of intrinsic motivation (intrinsic motivation to know, to accomplish things, and to experience stimulation), three types of extrinsic motivation (external, introjected, and identified regulation), and amotivation. It contains 28 items (4 items per subscale) assessed on a 7-point scale. Items 2, 9, 16, 23 correspond to intrinsic motivation- toward know. Items 6, 13, 20, 27 correspond to intrinsic motivation- toward accomplishment. Items 4, 11, 18, 25 correspond to intrinsic motivation-to experience stimulation. Items 3, 10, 17, 24 correspond to extrinsic motivation-identified regulation. Items 7, 14, 21, 28 correspond to extrinsic motivation-introjected regulation. Items 1, 8, 15, 22 correspond to extrinsic motivation- external regulation. Items 5, 12, 9, 26 correspond to amotivation. The questionnaire was translated and used by Salehi (2001). Cronbach alpha reliability index turned out to be 0.94.

C. Procedure

At first, the translated version of the MALQ was piloted with a similar sample of students and the Cronbach alpha reliability index was calculated using the SPSS. The first session, the researcher met the participants, talked with them about the study for a few minutes and made them aware of the processes they were supposed to go through. To investigate the relationship among listening performance, metacognitive strategy use and motivation, the listening section of the TOEFL was administrated to the participants. The researcher attempted to provide them with a calm environment while removing any possible distractions. It took 35 minutes to finish answering the questions. Immediately following the administration of the test, the participants filled in the MALQ and the AMS. Before administration of the questionnaires, the participants were given a brief explanation about how to complete them.

1. Investigating Research Question (1)
The first research question sought to explore the relationship between listening performance and metacognitive strategy use. In order to answer this question, Pearson-product moment correlation was used, which turned out to be 0.320. According to the obtained result, the first research question is answered in the positive; therefore, there is a relationship between listening performance and use of metacognitive strategies by students.

<table>
<thead>
<tr>
<th>N</th>
<th>r</th>
<th>sig</th>
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</thead>
<tbody>
<tr>
<td>72</td>
<td>0.320*</td>
<td>0.007</td>
</tr>
</tbody>
</table>

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

2. Investigating Research Question (2)
The second research question sought to examine the relationship between listening performance and orientations related to motivation. To this end, another correlational analysis was performed. As shown in Table 2, there is a significant relationship between listening performance and intrinsic orientation to motivation. The correlation between listening performance and extrinsic motivation was low and not significant. So there was no significant relationship between listening performance and extrinsic motivation. Table 2 reveals that there is a significant negative correlation between listening performance and amotivation.
3. Investigating Research Question (3)

To seek an answer to the last research question, which investigated the relationship between the motivation orientations and metacognitive strategy use, a correlational analysis was run. As Table 3 shows a positive and significant correlation was arrived at between intrinsic motivation, and metacognitive strategy use. The correlation between extrinsic motivation and metacognitive strategy use was positive and significant, too. Thus, there is no relationship between amotivation and metacognitive strategy use.

### Table 2. Correlation Between Listening Performance and Motivation Types

<table>
<thead>
<tr>
<th>Listening performance</th>
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<tbody>
<tr>
<td>Intrin</td>
<td>0.236*</td>
</tr>
<tr>
<td>Extrain</td>
<td>0.123</td>
</tr>
<tr>
<td>Amotiv</td>
<td>-0.282*</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (two-tailed)

### Table 3. Correlation Between Metacognitive Strategy Use and Motivation Types

<table>
<thead>
<tr>
<th>Metacognitive strategy use</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrin</td>
<td>0.308**</td>
</tr>
<tr>
<td>Extrain</td>
<td>0.244*</td>
</tr>
<tr>
<td>Amotiv</td>
<td>0.06</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (two-tailed)
** Correlation is significant at the 0.01 level (two-tailed)

### III. DISCUSSION

The first research question investigated the relationship between listening performance and metacognitive strategy use by the participants. The result of the statistical analysis indicated a significant relationship between these two variables. The results confirm those of Goh (1997, 2000, 2002), and Vandergrift (2002, 2003, 2006). These studies have shown that students have metacognitive knowledge about listening process, and this knowledge is linked to listening ability. While performing on different listening tasks, students make use of an extensive variety of listening strategies to improve their performance and have a better understanding of the task at hand. They are aware of the processes involved in comprehending the message.

The second research question sought to examine the relationship between listening performance and orientations to motivation. There was a significant relationship between listening performance and intrinsic motivation. It is in line with the findings of Noels, Clement, and Pelletier’s (2001) study. It has been argued that the learners who are intrinsically motivated are more interested in the second or foreign language. As Deci and Ryan (1985) state, when people are intrinsically motivated, they engage in activities that interest them, and they do so with a full sense of volition and without the necessity of material rewards or constraints. When students learn materials for pleasure and enjoyment, they exert more effort and are highly motivated to perform in the second language. It can be concluded that students with higher intrinsic motivation spend more time, create more opportunities and pay more attention to developing and enhancing their English listening comprehension. Thus, they are more capable of understanding or guessing the main ideas and points of the content they are listening to and as a result they obtain higher scores on their listening comprehension test. As Table 2 indicates, there was no significant relationship between listening performance and extrinsic motivation. The finding is congruent with the results found by Noels, Clement, and Pelletier (2001) and Vandergrift (2005). An explanation which can be given for this is that learning a language for material rewards or because of an external factor or pressure cannot result in eventual competence. As expected, the result of the Pearson correlation for amotivation and listening performance demonstrated that there was a negative relationship between these two variables. This finding is consistent with that of Schmidt and Watanbe (2001) and Vandergrift (2005). Amotivation is the state in which there is no incentive or motivation to engage in any activity at all or on the part of the learner. Amotivated individuals perceive no relation between outcomes and their own actions and lack self confidence and self efficacy, so they experience the feeling of incompetence.

Finally, the last research question examined the relationship between metacognitive strategy use and orientations to motivation. A positive and significant correlation was found between metacognitive strategy use and intrinsic/extrinsic
motivation. The finding corresponds to that of Vandergrift (2005) and Oxford and Ehrman (1995). The use of metacognitive strategies or self-regulating strategies is an important aspect of self-regulated learning. It appears that students who engage in self-regulating are more interested and value the tasks they are working on. Therefore, students’ intrinsic motivation plays an important role in their use of different metacognitive strategies. Self-regulated learning requires persistence and effort and learners must invest time and energy to use metacognitive strategies; therefore, learners should be motivated and willing to learn and apply the metacognitive strategies involved in self-regulated learning.

IV. CONCLUSION AND IMPLICATIONS

There exists a meaningful and positive correlation between listening performance and metacognitive strategy use. Using metacognitive listening strategies improves the listening performance of the students, so metacognitive knowledge is linked to the listening ability. There is a significant and positive correlation between intrinsic motivation and listening scores, which means intrinsic motivation affects listening performance positively. Learners who enjoy doing tasks and activities and learn for internal satisfaction will perform better. There is no relationship between extrinsic motivation and listening performance. Moreover, it was revealed that there is a negative relationship between amotivation and listening performance. Besides, there is a meaningful and positive correlation between both intrinsic and extrinsic orientations and metacognitive strategy use. Motivation, especially intrinsic motivation, leads to metacognitive strategy use with higher frequency, and ultimately results in the process of self-regulated learning.

Teachers should consider a number of variables including the use of metacognition and motivation when working with students who wish to improve their performance on different tasks. Students approach their learning task with skills and attitudes which promote academic success when the focus is on mentioned variables. Teachers should lay emphasis on increasing students’ intrinsic motivation since the study has revealed that intrinsic motivation plays an important role in improving performance and using more metacognitive strategies. Therefore, it is important for teachers to look for teaching activities and techniques that foster students’ interest so as to increase their intrinsic motivation.

REFERENCES


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