DEVELOPING METACOGNITIVE SKILLS AS A FOUNDATION OF LEARNING A FOREIGN LANGUAGE

RAMONA HENTER

University of Bucharest,
Faculty of Psychology and Educational Sciences
Department of Doctoral School

Abstract

Metacognition is seen as what people know about cognition in general and about their own cognitive processes, in particular, as well as how they use this knowledge to adjust their informational processes and behaviour to specific situations. Metacognition, with its two dimensions: knowledge about cognition and regulation of cognition, has been regarded as one of the factors that can influence performance in learning a foreign language. Previous research also shows that students’ metacognitive awareness can be raised by offering them the strategies that promote thinking about the learning process. So, we proposed a metacognitive training programme, implemented during a university semester, in order to test the effectiveness of such metacognitive methods in learning a foreign language by students who do not major in languages. The results obtained in the analysed group show that metacognitive skills for language learning can be successfully developed in students. The experimental approach of this topic offered the possibility to identify the most appropriate modalities for intervention in terms of duration of the program, of the strategies presented and used actively during English classes so that the programme is effective.

Cuvinte cheie: metacogniţie, strategii metacognitve, învăţarea limbilor străine.

Keywords: metacognition, metacognitive strategies, foreign language learning.

*Autor corespondent: Ramona Henter
Email: ramona.henter@unitbv.ro
1. THEORETICAL FRAMEWORK

1.1. PSYCHOLOGY OF LANGUAGE LEARNING

The main issues addressed in theories of language learning can be grouped around the following major themes (MacIntyre et al., 2006): explaining the variations in success in learning a foreign language, explaining the differences between implicit learning and explicit incidental, and explaining the differences in learning a foreign language between children and adults. Robinson (2005) argues that the explanation of learning a foreign language requires two complementary theories: the transition theory and the property theory. The transition theory refers to the relationship between cognitive abilities, learning processes and mechanisms used in transferring knowledge from point A to point B. The property theory aims at transferring knowledge from point A to point B. Inter-individual differences in language learning play an important role in the transition theory and seem to have attracted most researchers’ attention. Snow (cited in Robinson, 2005) suggests an interactionist approach of the inter-individual differences, namely the relevant aspects of the person and the situation in which the correlations between cognitive variables and outcomes are examined in relation to information and processing requirements of various contexts of exposure. Researchers have attempted a classification of these variables, many (Olivares Cuhat, 2010) agreeing with the following categories: cognitive factors (language skills, learning strategies), affective factors (attitudes, motivation, and anxiety), metacognitive factors, and demographic factors.

For this research, we chose to take into consideration only the metacognitive factors and their influence on performance in learning any foreign language.

1.2. METACOGNITION

Metacognition refers to what people know about cognition in general and about their own cognitive processes, in particular, as well as how they use this knowledge to adjust their informational processes and behaviour (Koriat, 2007). At the core of metacognitive training lies the concept of metacognition, introduced by John Flavell in 1976 to define the awareness of thought process: what we think, how we think when facing a certain task or situation and why we think in a certain way. Metacognition includes the ability to monitor these processes (Goh, 2008).

The research raised by Flavell's model of metacognition revealed the existence of two dimensions of metacognition: knowledge about cognition and regulation of cognition (Brown cited by Iwai, 2011). Knowledge about cognition can be grouped into three factors: declarative knowledge ("knowing that"), procedural knowledge ("knowing how" - learning strategies are a part of this
knowledge), and conditional knowledge (knowing when, where and why a person uses a particular strategy). The regulation of cognition includes: planning (which involves selecting appropriate strategies and allocation of resources necessary to perform the task), monitoring (aimed at awareness about the level of understanding and solving the task during performing that task), testing (implementing a strategy), reviewing and evaluation of strategies (includes assessment of the methods used, as well as of the objectives and results) (Schraw & Moshman, 1995).

Metacognition’s huge potential in language learning performance was first reported in 1987 by Wenden (cited in Goh, 2008), and since then there have been many different interpretations of metacognition and many metacognitive models that tried to explain the link between metacognition and language learning. Those who are successful in language learning are those who are aware of the learning process and use learning strategies (including metacognitive ones) flexibly and efficiently (Huang, 2005). Teachers can help students to think about what happens during the process of learning a foreign language, which will build better learning skills (Anderson, 2002). Teaching metacognitive strategies should be a lasting process (Çubukçu, 2008, Veenman et al, 2006, Patry, 2004, Singhal, 2001). Basic metacognitive strategies can and are used by students regardless of age, level of education or subject matter. They go beyond simply teaching discipline and can be applied in similar situations (Papaleontiou - Louca, 2003). Training on the use of metacognitive strategies can target the following aspects: improving learning performance, learning new strategies to facilitate content assimilation, increasing self-confidence, increasing effectiveness in terms of time spent and expected results (Jimenez et al, 2009).

The specialty literature shows the researchers’ main preference for investigating metacognition in relation to only one of the four language skills (reading, writing, speaking, and listening). We decided to take into account all four skills, the training being focused on one skill at a time and at the end of the distinct training, we had a summarizing lecture, on how to combine these strategies according to the task to be solved.

Beyond supporting the effectiveness of using metacognitive language learning methods, researchers have divergent views on how to teach them (El-Koumy, 2004). Teaching metacognitive strategies explicitly, separately from the actual content of learning is the key of success, say some researchers (Iwai, 2011). The steps to be followed are: identification of the strategy to be used in a certain situation, presentation of how to implement the strategy, clarification about under what conditions the strategy is effective and why that strategy is important). Other research supports teaching metacognitive awareness during authentic learning activities using strategies such as reciprocal teaching strategies, SQ4R techniques (fast reading, questioning, reading, recalling, reviewing, writing) and RAP (reading, ask, summarize).
Also, research has revealed the effectiveness of a summative approach of the two directions (Schumaker & Deshler, 2009, Beckman, 2002).

2. OBJECTIVES AND HYPOTHESES

2.1. OBJECTIVES

The general objective of this study was to use metacognitive strategies for learning English in order to test the effectiveness of specific methods of increasing metacognitive awareness in learning a foreign language and to assess the impact of these strategies on the performance in English.

2.2. HYPOTHESES

- **Hypothesis 1.** There are statistically significant differences in terms of performance in learning English between students who use effective metacognitive strategies and those who use metacognitive strategies ineffectively or do not use metacognitive strategies.
- **Hypothesis 2.** We assume that students will use more cognitive and metacognitive strategies when learning a foreign language if they are familiar with the techniques and learning methods that appeal to a high level of metacognition.
- **Hypothesis 3.** We assume that the completion of a program for the development of metacognitive skills will optimize performances in English language tests.

3. METHOD

3.1. PARTICIPANTS/SUBJECTS

In the research, there were involved 94 students of Transilvania University of Brasov, who attend mandatory courses in English, divided into three groups according to their university groups (two groups of 61 students together were distributed in the experimental group and the third group, consisting of 33 students, was the control group). There were only female subjects in this study, due to the natural composition of these groups.

3.2. INSTRUMENTS

We used the following instruments in the pre-test and post-test phases: Metacognitive Awareness Inventory (MAI), an English language test, a demographics questionnaire.

*The Metacognitive Awareness Inventory (MAI)* is a scale established by Schraw and Dennison (Schraw & Dennison, 1994) to assess various aspects of
meta-cognition. Participants assess each item concerning how they study a foreign language with true or false. The foundation of this scale is Flavell’s metacognitive theory and the two scale factors correspond to his two dimensions of metacognition: knowledge and regulation of cognition. At a similar level to that reported by the authors, the internal consistency of this scale is .76.

The English language test was built in collaboration with a professor of English and aimed at the performance for the four basic skills: speaking, writing, reading, and listening in English. The items were adapted from Oxford Placement Test - online version. We tried to establish the knowledge of English within the European language knowledge framework that places users from the weakest level - A1 to C2 level – native-like language user.

The demographics questionnaire aimed to obtain information such as: age, gender, and years of studying English. There were also required their academic results in English language examinations to be correlated with English language test results.

3.3. PROCEDURE

The students were divided into three groups according to their university groups, one of the groups was randomly chosen as the control group and the students from the other two were distributed in the experimental group. They had similar levels of English knowledge and we preserved the composition of the groups of students so as not to induce changes in student - student relations. Only the experimental group was subjected to a training programme aimed to develop the ability to use consciously the metacognitive strategies involved in learning a foreign language. Teaching metacognitive strategies can be done during courses separated from the English language lessons, during teaching foreign language or one can choose a combined version. In this experiment, we chose the last way of teaching metacognitive strategies, thus emphasizing the advantages of both approaches, as shown by other researchers (Schumaker & Deshler, 2009, Beckman 2002). The English teacher was instructed to use some of metacognitive strategies during teaching; there were held distinct meetings with students, who were presented the metacognitive strategies.

The objectives of the intervention programme were: acquiring metacognitive knowledge about using metacognition in the development of the four fundamental language skills, getting familiar with strategies and stages of learning in terms of metacognition, exercising effective metacognitive skills specific for learning each fundamental skills, developing the ability to use metacognitive strategies in learning a foreign language.

The metacognitive strategies for teaching, learning and assessment used in the experimental programme were modelling (Goh, 2008, Papaleontiou - Louca, 2003), reflective journals (Goh, 1997, Papaleontiou - Louca, 2003, Huang, 2005,
One of the most important skills is the ability to combine metacognitive strategies subsumed achieving a goal. Those who perform in language learning tend to select strategies that blend well to the tasks and can explain what strategies use and why (Rasekh & Ranjbari, 2003). Some strategies appear to be more effective for one or the other of the basic language skills (Rasekh & Ranjbari, 2003): strategies aimed at planning, self-monitoring, deduction and substitution are effective during writing; speech requires metacognitive strategies for risk assessment, self-monitoring and self-evaluation; during listening there are involved: selective hearing and self-monitoring; reading aloud, guessing, deduction, and summarizing are effective during reading. However, evaluating the effectiveness of the metacognitive strategies used (Rasekh & Ranjbari, 2003) through methods such as the reflexive journal, interviews, self-questioning, checklists of strategies used by students to reflect on their own learning cycle, becomes itself a meta-method.

3.4. EXPERIMENTAL DESIGN

We used an experimental design with a pre-test and a post-test phase, between which we applied a program for the development of metacognitive skills for learning English, during a semester in the English language courses in the first university year. The dependent variable was the performance in English language tests and the independent variables were the metacognitive strategies presented to the students during the training programme.

4. RESULTS

After the initial testing of the two groups and establishing their equivalence, the experimental group was subjected to treatment, as presented above. At the end of the sessions of training in using metacognitive strategies, an English language test was performed. Students were also questioned about their metacognitive awareness while learning English and they answered the Metacognitive Awareness Inventory. We established the differences between the averages of the two groups, for pre-test – post-test phases.

The results, presented in Table no. 1, show that there are statistically significant differences between the metacognitive awareness and English language
test results between the two phases of the experiment in the experimental group, whereas there were not registered any statistically significant differences the control group, which demonstrates the effectiveness of the proposed training program. Also, the size of the effect is significant in the results obtained.

Students in the experimental group know more about their own cognition and how to regulate it than those in the control group.

Table no. 1. T-test for differences between means for pre-test – post-test phases

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test – Post-test</th>
<th>Mean differences</th>
<th>Standard deviation</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>d</th>
<th>Cohen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Knowledge about cognition</td>
<td>-0.04</td>
<td>5.26</td>
<td>-0.07</td>
<td>60</td>
<td>.942</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regulation of cognition</td>
<td>0.37</td>
<td>3.78</td>
<td>0.77</td>
<td>60</td>
<td>.439</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cognitive and metacognitive strategies</td>
<td>0.54</td>
<td>17.80</td>
<td>0.23</td>
<td>60</td>
<td>.813</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>English language test</td>
<td>0.51</td>
<td>16.7</td>
<td>0.21</td>
<td>60</td>
<td>.343</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Exp</td>
<td>Knowledge about cognition</td>
<td>-3.03</td>
<td>4.96</td>
<td>-4.96</td>
<td>65</td>
<td>.000</td>
<td>.61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regulation of cognition</td>
<td>-6.21</td>
<td>6.79</td>
<td>-7.42</td>
<td>65</td>
<td>.000</td>
<td>.91</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cognitive and metacognitive strategies</td>
<td>-15.34</td>
<td>16.12</td>
<td>-7.73</td>
<td>65</td>
<td>.000</td>
<td>.95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>English language test</td>
<td>-16.32</td>
<td>16.77</td>
<td>-7.87</td>
<td>65</td>
<td>.000</td>
<td>.95</td>
<td></td>
</tr>
</tbody>
</table>

As concerning the second hypothesis, it was also confirmed: in the pre-test phase, the metacognitive awareness was low in both groups, but it grew in the post-test phase only for the experimental group, thus proving that our intervention was effective, probably because the students did not know metacognitive strategies and they were not used to applying them in learning situations.

Performances in English language tests were better for the students in the experimental group than in the control group, fact suggesting that the metacognitive strategies do have an influence on learning a foreign language.

5. CONCLUSIONS

This research aimed at highlighting the effects of using metacognitive strategies on performance in learning English. These methods and techniques have been presented during the intervention program in order get students more familiar with metacognitive strategies that can be transferred to other subject matters, mainly the strategies aimed at metacognition during reading and writing. We cannot rule out that some students were already using metacognitive strategies intuitively, but the overall level of metacognition rose in all students.

The results obtained in the analysed group show that metacognitive skills in language learning can be successfully developed in students. The experimental approach of this topic offered the possibility to identify the most appropriate
modalities for intervention in terms of duration of the program, of the strategies presented and used actively during English classes. For the population of students who major in Humanities, an intervention programme lasting 14 weeks, with weekly meetings focused on strategies to improve their knowledge about cognition and the strategies of regulating their cognitive activity has proven effective.

Particular attention should be paid to how the proven effectiveness of this programme could be implemented in teaching, by presenting these didactic strategies combined (both purely theoretical presentation of the strategies and practical use during English language courses of those presented in the theoretical part).

But metacognition can be taught only by teachers who practice metacognition and only if it is supported by those who decide on the curriculum of various subjects. Thus, we believe that metacognition is the essential skill that teachers should develop both in themselves and their students (Anderson, 2005). Therefore, metacognition should be first learned and used by teachers and applied in teaching and learning methods and in writing textbooks and practiced every day, in all subjects.

REFERENCES


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REZUMAT

Metacogniția este văzută ca ceea ce oamenii știu despre cunoaștere, în general, și cu privire la propriile procease cognitive, în special, precum și modul în care utilizează aceste cunoștințe pentru a ajusta procesele de informare și de comportament pentru situații specifice. Metacogniție, cu cele două dimensiuni: cunoștințe despre cunoaștere și reglementare a cunoașterii, a fost considerat ca fiind unul dintre factorii care pot influența performanța în învățarea unei limbi străine. De cercetare anterioară arată, de asemenea, că gradul de conștientizare metacognitive elevilor poate fi ridicată de către oferindu-le strategiile care promovează gândire cu privire la procesul de învățare. Deci, ne-am propus un program de training metacognitiv, implementat în timpul unui semestru universitar, în scopul de a testa eficiența acestor metode metacognitive în învățarea unei limbi străine de către elevii care nu majoră în limbi. Rezultatele obținute în grupul analizat arată că abilitățile metacognitive în învățarea limbilor străine poate fi dezvoltat cu succes în studenți. Abordarea experimentală a acestui subiect a oferit posibilitatea de a identifica modalitățile cele mai adecvate de intervenție în ceea ce privește durata programului, a strategiilor prezentate și utilizate în mod activ în timpul orelor de limba engleză, astfel că programul este eficient.