Metacognitive strategies of the university students with respect to their perceived self-confidence levels about learning

Ibrahim Kisac a *, Yusuf Budak b

a Ibrahim Kisac, Gazi Universitesi Gazi Egitim Fakultesi, Felsefe Grubu Egitimi Bolumu, Teknikokullar, Ankara, Turkey
b Yusuf Budak, Gazi Universitesi Gazi Egitim Fakultesi, Egitim Bilimleri Bolumu, Teknikokullar, Ankara, Turkey

Abstract

The purpose of this study is to investigate metacognitive skills or strategies of the university students according to their perceived self-confidence levels about learning. Study group of this research consist of 400 university students. The students were randomly chosen from different schools and departments of Gazi University, Turkey in 2012. Managing Metacognition Inventory was used to collect data. One way anova was applied to analyze data. The students who have higher self-confidence more use the strategies of note taking, summarizing, reflecting, reciting and reviewing what they learned to things they have already know.

© 2013 The Authors. Published by Elsevier Ltd. All rights reserved
Selection and peer review under the responsibility of Prof. Dr. Servet Bayram

Keywords: Metacognitive strategies, self-confidence, learning, university students;

1. Introduction

The term metacognition is usually defined as knowledge and cognition about cognitive objects or about how to learn (Slavin, 2009; Fetsco and McClure, 2005; Schraw, 1998; Ormrod, 1990; Brown, 1987; Flavell, 1987; Weinert & Kluwe, 1987). Metacognition refers to higher order thinking which involves active control over the cognitive processes engaged in learning (Livingston, 1997). Thinking skills and study skills are examples of metacognitive skills (Slavin, 2009). Metacognition is also an ability to use that knowledge to self-regulate one’s own learning (Fetsco and McClure, 2005). It involves three kinds of knowledge: (1) declarative knowledge that influence one’s learning and memory, and the skills, strategies, and resources needed to perform a task; (2) procedural knowledge or knowing how to use strategies; and (3) self-regulatory knowledge to ensure the completion of the task (Woolfolk, 2013; Schunk, 2012; Schraw & Moshman, 1995; Kluwe, 1987). Self-regulating involves setting appropriate goals, selecting effective learning approaches, and monitoring progress toward these goals (Fetsco and McClure, 2005; Schraw & Moshman, 1995).

Metacognition regulates thinking and learning. There are three essential skills: planning, monitoring and evaluating (Woolfolk, 2013; Schraw, 1998). Planning is the selection of appropriate strategies and allocation of cognitive resources before the task. It includes deciding how much time to give a task, which strategies to use, how to start, which resources to gather, what order to follow, what to skim and what to give intense attention to, and so forth. Monitoring is the real time awareness of “how I am doing.” Monitoring is the awareness of understanding
and performance during the task. It is asking, “Is this making sense? Am I trying to go too fast? Have I studied enough?” Evaluating is the appraisal of performance after task completion. It involves making judgements about processes and outcomes of thinking and learning. “Should I change strategies? Get help? Give up for now?” (Woolfolk, 2013; Kleitman & Stankov, 2007).

Note taking, underlining or highlighting, summarizing, finding main ideas, writing to learn, self-questioning, outlining, mapping, previewing, reflecting, reciting and reviewing are most common metacognition strategies (Woolfolk, 2013; Slavin, 2009; Ormrod, 1990). For example, note taking can be effective for certain types of material because it can require mental processing of main ideas as one makes decisions about what to write (Slavin, 2009). Another most common study strategy is summarizing. Summarizing involves writing brief statements that represent the main ideas of the information being read. Outlining presents the main points of the material in a hierarchical format. In networking and mapping, students identify main ideas and then diagram connections between them. Reflecting, reciting and reviewing are important study techniques for helping students understand and remember what they read. Reflecting can be defined trying to understand and make meaningful the existing information by relating it to things that already know. Reciting is to practice remembering the information by stating points out loud and asking and answering questions. Reviewing is actively to review one’s learning about a subject by focusing on asking himself questions, and repeating his learning (Slavin, 2009).

Positive relationship with teachers has a positive influence on the learning habits and the academic aspirations of children (Kleitman & Gibson, 2011). Studies have shown that metacognitive skills are improved during the school years (Kreps & Roebers, 2012). Teaching metacognitive strategies to students helps to learn how to know when they don’t understand in reading. Students can be taught strategies for assessing their own understanding, figuring out how much time they will need to study something, and choosing an effective plan of attack to study or solve problems (McCormick, 2003; as cited in Slavin, 2009).

Metacognitive processes are crucial for adequate comprehension of the text. Not only in text comprehension, but also in learning of procedural tasks and verbal learning tasks, metacognition processes play a role (Bruin & VanGog, 2012). Many studies report significant improvement in learning when regulatory skills an understanding of how to use these skills are as a part of classroom instruction. Consequently, metacognition is essential to successful learning because it enables individuals to better manage their cognitive skills (Schraw, 1998). The students who have effective metacognitive skills can learn more easily and effectively. Also, they are more motivated and have more self-confidence about learning. Metacognitive experiences include judgements, feelings and thoughts people make during on task performance. They contain the feeling of confidence (Kleitman & Gibson, 2011). Therefore, the purpose of this study is to investigate metacognitive skills or strategies of the university students according to their perceived self-confidence levels about learning. Metacognitive skills in this research are those skills such as note taking, summarizing, outlining, reflecting, reciting and reviewing.

2. Method

Study group of this research consist of 400 university students. The students were randomly chosen from different schools and departments of Gazi University, Turkey in 2012. Managing Metacognition Inventory was used to collect data. Six items which are related with the most common study strategies were chosen from this inventory. Also, items are selected based on three essential skills: planning, monitoring and evaluating, and PQ4R study method. These items of the scale were analyzed according to purpose of the study. For instance, the item about note taking is as “I regularly and systematically note take in the class.” Items are 5 point degree scale. If score is high, it refers that student have had more the strategy.

Perceived four self-confidence levels of the students are determined by a question which asks them whether they rely on themselves about learning. These levels are 1: Low, 2: Middle, 3: High, 4: Very high. One way anova was applied to analyze data. Tukey HSD post hoc test was used to determine the difference among groups.
3. Findings and results

Findings of the study about using metacognitive strategies of the students according to their perceived self-confidence levels are presented in below table.

| Metacognitive strategies | CL* | n   | Mean | SD  | F    | p     | Tukey HSD |
|--------------------------|-----|-----|------|-----|------|-------|-----------|
| Note taking              | 1   | 19  | 3.26 | 1.48| 5.008| .002  | 2-4 (p=.002) |
|                          | 2   | 41  | 2.85 | 1.21|      |       |           |
|                          | 3   | 164 | 3.31 | 1.25|      |       |           |
|                          | 4   | 176 | 3.63 | 1.21|      |       |           |
| Summarizing              | 1   | 19  | 3.32 | 1.33| 11.106| .000 | 1-4 (p=.001) |
|                          | 2   | 41  | 3.39 | 1.02|      |       | 2-3 (p=.014) |
|                          | 3   | 164 | 3.90 |  .96|      |       | 2-4 (p=.000) |
|                          | 4   | 176 | 4.18 |  .88|      |       | 3-4 (p=.031) |
| Outlining                | 1   | 19  | 3.58 | 1.42| 4.825| .003  | 2-4 (p=.002) |
|                          | 2   | 41  | 3.12 | 1.16|      |       |           |
|                          | 3   | 164 | 3.55 | 1.09|      |       |           |
|                          | 4   | 175 | 3.82 | 1.08|      |       |           |
| Reflecting               | 1   | 19  | 3.26 | 1.28| 6.165| .000  | 1-3 (p=.023) |
|                          | 2   | 41  | 3.83 |  .94|      |       | 1-4 (p=.001) |
|                          | 3   | 164 | 3.94 |  .93|      |       |           |
|                          | 4   | 176 | 4.18 |  .98|      |       |           |
| Reciting                 | 1   | 18  | 2.67 | 1.02| 8.263| .000  | 2-4 (p=.000) |
|                          | 2   | 40  | 2.53 | 1.01|      |       | 3-4 (p=.002) |
|                          | 3   | 162 | 2.85 | 1.04|      |       |           |
|                          | 4   | 176 | 3.27 | 1.06|      |       |           |
| Reviewing                | 1   | 19  | 2.68 | 1.00| 7.504| .000  | 2-4 (p=.000) |
|                          | 2   | 41  | 2.10 |  .94|      |       | 3-4 (p=.002) |
|                          | 3   | 163 | 2.43 |  .99|      |       |           |
|                          | 4   | 174 | 2.86 | 1.22|      |       |           |

*CL: Confidence levels of the students, 1: Low, 2: Middle, 3: High, 4: Very high

As it is seen in the table, findings indicated that there are significant differences among self-confidence levels of the students and their cognition skills on note taking, summarizing, outlining, reflecting, reciting and reviewing. The students who have higher self-confidence more use the strategies of note taking, summarizing, reflecting, reciting and reviewing what they learned to things they have already know. For example, on summarizing, the more students have high confidence level, the more they use summarizing metacognition skills. Especially, Tukey test indicates that very high self-confidence level students more significantly use summarizing skill than the other students do.

Students usually have higher means about note taking, summarizing, outlining and reflecting. That means most of the students use note taking, summarizing, outlining and reflecting strategies when they are learning. On the other hand, the student’s reciting and reviewing means are around averages even though there is a significant difference according to self-confidence levels. This indicates that students usually prefer less recalling and repeating what they learned.

4. Conclusions and recommendations

People with higher self-confidence in their capabilities approach complicated tasks as challenges to be mastered. Having a positive outlook and feeling of self-confidence helps to foster an intrinsic interest and deep fixation in activities (Shannon, 2008). In this study, it is found that level of self-confidence of the students about learning is effective on their cognition skills. High self-confidence level students use more metacognition skills such as note taking, summarizing, outlining, reciting and reviewing. This founding could be interpreted in two ways. First, students have higher self-confidence use more effective metacognitive skills. Second, using more metacognitive strategies makes students higher self-confidence level because of being more successful. Studies have shown that
there is a relationship between self-confidence and cognitive abilities (Kleitman & Stankov, 2007; Stankov, 2000). For instance, Kleitman & Gibson (2011) found that metacognitive beliefs serve as a key predictor of self-confidence in sixth grade children.

As a result, for successful learning, students’ metacognitive knowledge and skills could be learned and promoted (Woolfolk, 2013; Schraw, 1998). Promoting metacognition begins with building an awareness among learners that metacognition exists, differs from cognition, and increases academic success. The next step is to teach metacognitive strategies and help the students when and where to use strategies (Schraw, 1998). Because metacognition plays an important role in successful learning, it is essential to study metacognitive activity and development to determine how students can be taught to better apply their cognitive resources through metacognitive control (Livingston, 1997).

References

Brown, A. (1987). Metacognition, executive control, self-regulation, and other more mysterious mechanisms. In F. E. Weinert & R. H. Kluwe (Eds.), Metacognition, motivation, and understanding (pp. 65-116). New Jersey: Lawrence Erlbaum Associates, Inc.

Bruin, A. B.H & VanGog, T. (2012). Improving self-monitoring and self-regulation: From cognitive psychology to the classroom. Learning and Instruction, 22, 245-252.

Fetsco, T. & McClure, J. (2005). Educational psychology: An integrated approach to classroom decisions. Boston: Pearson Education, Inc.

Flavell, J. H. (1987). Speculations about the nature and development of metacognition. In F. E. Weinert & R. H. Kluwe (Eds.), Metacognition, motivation, and understanding (pp. 21-29). New Jersey: Lawrence Erlbaum Associates, Inc.

Kluwe, R. H. (1987). Executive decisions and regulation of problem solving behavior. In F. E. Weinert & R. H. Kluwe (Eds.), Metacognition, motivation, and understanding (pp. 31-64). New Jersey: Lawrence Erlbaum Associates, Inc.

Keps, S.S. & Roebers, C. M. (2012). The impact of retrieval processes, age, general achievement level, test scoring schema for children’s metacognitive monitoring and controlling. Metacognition Learning, 7, 75-90.

Kleitman, S. & Gibson, J. (2011). Metacognitive beliefs, self-confidence and primary learning environment of sixth grade students. Learning and Individual Differences, 21, 728-735.

Kleitman, S. & Stankov, L. (2007). Self-confidence and metacognitive processes. Learning and Individual Differences, 17, 161-173.

Livingston, J. A. (1997). Metacognition: An overview. Retrieved December, 27, 2012 from http://gse.buffalo.edu/fas/shuell/cep564/metacog.htm

Ormrod, J. E. (1990). Human learning: Theories, principles and educational applications. Columbus, Ohio: Merrill Publishing Company.

Schraw, G. (1998). Promoting general metacognitive awareness. Instructional Science, 26, 113-125.

Schraw, G. & Moshman, D. (1995). Metacognitive theories. Educational Psychology Review, 7 (4), 351-371.

Schunk, D. H. (2011). Öğrenme teorileri: Eğitimsel bir bakış. (Çeviri Ed. Muzaffer Şahin), Ankara: Nobel Akademik Yayıncılık.

Shannon, S. V. (2008). Using metacognitive strategies and learning styles to create self-directed learners. Institute for Learning Styles Journal, 1, 14-28.

Slavin, R. E. (2009). Educational psychology: Theory and practice. New Jersey: Pearson Education, Inc.

Stankov, L. (2000). Complexity, metacognition, and fluid intelligence. Intelligence, 28 (2), 121-143.

Weinert, F. E. & Kluwe, R. H. (1987). Metacognition, motivation, and understanding. New Jersey: Lawrence Erlbaum Associates, Inc.

Woolfolk, A. (2013). Educational psychology.(20th ed.). New Jersey: Pearson Education Inc.