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# METACOGNITION IN BULGARIAN UNIVERSITY STUDENTS' METHODOLOGICAL PREPARATION AND PRE-SERVICE TRAINING

**Abstract:** The article focuses briefly on the complex psychological concept of metacognition in educational context, and suggests how metacognitive strategies can be applied in the process of university students' preparation and pre-service teaching practice of Bulgarian students doing their bachelor degree program in English studies and Applied linguistics, more particularly those who opted for teacher qualification.
The purpose of implementing metacognitive strategies in the different stages of pre-service teacher training is to help university students prepare and plan their lessons, monitor their work during the lessons, and evaluate them more effectively in order to improve their teaching skills and performance.

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In the last several decades metacognition and metacognitive strategies as specific psychological phenomena, have gained greater significance and have begun playing a more important role in many areas of life and human knowledge research. Education is one of the spheres in which cognitive and educational psychology have a growing impact on improving the quality and results of instructional activities in all educational aspects. Despite the rich body of scientific works and over 40 years of extensive research on metacognition it is still not a popular concept in Bulgaria.

The term was introduced and elaborated on in 1970s in the works by American developmental psychologist J. Flavell, and it has been thoroughly examined and analyzed from different perspectives since then. There are several models of metacognition that have been presented through the years of study by prominent researchers such as A. Brown (Brown, 1987), T. Nelson and L. Narens (Nelson & Narens, 1994), S. Tobias and H. Everson (Tobias & Everson, 2002). The definition J. Flavell broadly offers is "cognition about cognitive phenomena". He describes a model of cognitive monitoring which consists of four groups of phenomena: a) metacognitive knowledge; b) metacognitive experience; c) goals (or tasks), d) actions (or strategies) (Flavell, 1979).

Metacognitive knowledge can be specified as universal knowledge and beliefs about human mind and the way it functions, as well as self-attributions about one's own cognitive abilities. This knowledge enhances through experience and information stored in long-term memory. Although there is still not a universal definition of the concept, most researchers outline and distinguish the two major components of metacognition - knowledge about cognition and regulation of cognition. Knowledge about cognition refers to the general knowledge about learning processes and one's learning processes in particular. Knowledge about cognition includes three kinds of awareness - declarative, procedural and conditional knowledge. Declarative knowledge refers to knowledge "about" things, procedural knowledge refers to knowing "how" to do things, and conditional knowledge which refers to knowing "when" and "why" to use various cognitive actions and strategies, actually means applying declarative and procedural knowledge in certain conditions.

Regulation of cognition includes metacognitive control processes that are used during a task performance. G. Schraw and D. Moshman refer regulation of cognition to metacognitive activities which assist monitoring of individual thinking and learning. Both researchers specify three basic regulatory abilities and they can be viewed as universal: planning, monitoring and evaluation (Schraw & Moshman, 1995). These regulatory processes can be applied in a wide range of cognitive activities – reading, writing, problem-solving, etc. at school, as well as in university students' studies as part of their theoretical and methodological preparation and practice. The mere way the preparation is carried out in practical aspect is a reflection of the regulatory processes of cognition.

The basic factors which J. Flavell determines as "variables" and which influence cognitive processes and their results are *person, task* and *strategy*. The variable *person* refers to individual characteristics and differences, the beliefs in one's own and other individuals' features and skills, associated with learning, as well as to universal beliefs about learning and memory. *Tasks* are another variable. The nature of a task determines an individual's approach to it based on their knowledge. The last variable *strategy* requires a selection of a strategy depending on the individual's intention. Metacognitive knowledge encompasses these factors and the way they interact in possible combinations (Flavell, 1979, 1987).

Metacognitive experiences are another group of phenomena in J. Flavell's model of metacognitive monitoring. According to its definition a metacognitive experience can be any conscious cognitive or affective experience which is directly involved in the performance of a current cognitive activity or situation (Flavell, 1979, 1987).

E. Papaleontiou-Louca points out that metacognitive experiences can have a very important impact on cognitive goals and tasks, metacognitive knowledge and cognitive actions and strategies. First, metacognitive experiences can cause a change and revision of goals. Second, they can add new information to metacognitive knowledge, delete information or revise it. And finally, they can trigger strategies directed to achieving both cognitive and metacognitive goals (Papaleontiou-Louca, 2003).

Every person (future teachers including) possesses some metacognitive knowledge since early childhood, and this type of knowledge continues to enhance and automatize later in their development. This cognition is displayed on subconscious level, and the act of revealing and realizing its nature and significance is a complex process which is necessary for more efficient monitoring and control of cognitive skills. In A. Brown's words in the course of the realization "invisible becomes visible" (Brown, 1980). D. Kuhn states that metacognition develops along with individual development and becomes more effective when it is under individual's conscious control (Kuhn, 2000).

Monitoring of cognitive processes and effective use of individual cognitive abilities aims at decreasing efforts and improving results of cognitive activity. Metacognition allows using knowledge strategically for the most effective performance of a task (Gourgey, 2002).

The idea behind introducing metacognition in learning is to provide explicit metacognitive strategy instruction with the goal of turning students into independent learners. For the purpose of applying metacognitive strategies in educational setting and context, teachers should be well aware of the theoretical framework of the concept of metacognition. This could be done in two ways: 1) through organizing and conducting specialized qualification courses for in-service teachers; and 2) through introducing the metacognitive theory in university students' methodology and pedagogy course of instruction.

Bulgarian university students who can become teachers of English usually do a bachelor's, master's, or another post-graduate program in English Studies or Applied linguistics and acquire their teacher qualification simultaneously with their main studies or after their graduation. At present teacher training curriculum consists of theoretical part and practice. The Core curriculum for EFL teacher training includes: Pedagogy (theory of education and didactics) planned for 60 contact hours; Psychology (general, developmental and pedagogical) – 60 hours; Audio-visual and information technology in education – 30 hours; Methodology of teaching – 90 hours; Observation and analysis – 30 hours; Continuous teaching practice – 60 hours; Final (school-based) teaching practice – 90 hours.

Incorporating metacognition into the future teachers' theoretical course of preparation can be a fairly important stage of realizing the importance of metacognitive knowledge and strategies. Once they start their pre-service teacher training in school setting student teachers can put into practice what they have learned. Their practical application would improve the quality and effectiveness of their teaching to a significant extent. This would help university students grow into independent teachers for a shorter time, and this by itself could affect students' progress both directly and indirectly. The direct influence might lead to their advancement, while the indirect impact reflects the way students take their teacher as a role model in a learning setting. Once they have received theoretical instruction and have started using metacognitive strategies in their own studies, preparation and teaching practice, future teachers could gradually incorporate the strategies into their work with school students. Thus, school students could be encouraged and helped to become more self-reliant and active in their studies and get better results from their learning endeavors. Successful students do best when they are aware of their strengths and weaknesses, as well as have access to their own "repertoire" of learning strategies (Brown, 1997).

Every lesson preparation starts with defining the aims and objectives, planning (a lesson plan), monitoring (controlling the performance of the planned activities and their sequence, and solving particular problems in the course of the lesson, should any occur), and finally, evaluation of the completed work (a discussion of the taught lesson with a methodologist and/or mentor who has observed the lesson). This model represents applied metacognition. According to H. Hartman metacognition in teaching involves a rich set of instruction strategies which offer specific guidelines for the time, reason and way to use these strategies. Moreover, H. Hartman emphasizes the double role of metacognition in teaching as *teaching with metacognition*, i.e. considering the goals, students' individual characteristics and differences, curriculum, classroom setting, etc., and *teaching for metacognition* i.e. focusing on ways of activating and developing students' metacognitive thinking (Hartman, 2002).

Outlining the aims and objectives of the lesson is the initial stage, preceding the work on its planning. Student teachers are acquainted in advance with various versions and formats of lesson plans and the way to proceed for devising one for their lesson. They are also well aware of the importance of a plan in order to end up with a successful lesson. Good planning is a guarantee, or at least a necessary condition, for success. While planning strategic metacognitive thinking and knowledge of different instructional approaches facilitate the right choice of method that is the most suitable for the lesson content and necessary for accomplishing its immediate objectives.

The following stage is putting the preliminary plan into action in the course of the lesson. Monitoring or self-observation and self-control while teaching, appears to be one of the most difficult metacognitive activities for the inexperienced teacher. It is hard enough even for teachers with years of experience, and that is why twice harder for novice teachers.

Difficulties arise due to several reasons: 1) student teachers are closely dependent on the plan they have to stick to; 2) they find it challenging to distribute rationally the time that has been set both for the separate parts of the lesson according to the plan and for each planned activity (presentation, exercises, discussions, group work or pair work), and 3) in this initial stage of their teaching practice student teachers have not yet obtained the pedagogical and methodological flexibility to quickly come up with solutions to possible problems that might appear in the classroom work and are often not foreseen in the planning stage.

Self-observation is a synonym of self-monitoring of one's own activity (Ellis & Zimmerman, 2000). During the good self-monitoring teacher trainees have to mind their performance, the conditions that surround this performance and the effect it produces (Zimmerman & Paulsen, 1995). In their effort to keep to the plan of the lesson, student teachers happen to be in a situation which requires their attention to many lesson aspects at the same time - they have to follow the stages of the plan, mind the timing, be aware of their posture and body movements, try to establish rapport with the students, and maintain order in the classroom ("discipline" is a word I would not prefer to use). For these reasons self-observation appears to be very difficult to master. However, empirical research shows that the ability for self-monitoring improves with practice (Schraw & Moshman, 1995).

The last part is the evaluation of the lesson. Feedback is of great significance for the novice teachers. The discussion of the conducted lesson with a mentor and/or methodologist is a direct approach

of receiving constructive feedback, which aims at analyzing the way the lesson was taught, whether or not the objectives were fulfilled, the way the lesson plan was implemented, and possible problems and drawbacks of the selection of teaching methods and techniques. The model in foreign language teaching methodology that has been adopted to hold discussions about a lesson offers particular questions which the methodologist asks the student teacher in order to encourage them to review and self-evaluate their performance during the lesson. This could set the beginning of the discussion and the questions can be:

*What do you think about the lesson? Are you satisfied or not with it?*
*How do you feel about it?*
*Do you think it was a good lesson? If not, why?*
*What do you think was good? What do you think didn't go well?*
*What could you have done differently? What could you change in a similar situation in the future?*

The goal of the discussion with the help of such questions is that the student teacher reflects on their work, which is an example of a metacognitive approach. This type of approach helps them make a more objective evaluation of their own performance. This is a model of a metacognitive situation associated with affect (a feeling of satisfaction or dissatisfaction) in which the student teacher, with the assistance of their mentor/methodologist, can draw useful conclusions about their work. These conclusions themselves can influence the student teacher's future development.

The mentor/methodologist's part is not that of a critic who would spot and put an accent on the controversial or negative aspects of the lesson along with the positive ones but rather a witness, who points out what they have observed. This model focuses on the aspiration for objectivity of judgement on behalf of the mentor/methodologist, and not just pointing the problematic elements of the lesson, but finding the reasons for which it hasn't been as it was planned.

Another way to receive feedback is through a video recording of the lesson. After reviewing the recording the student teacher can make a thorough retrospective analysis of his/her performance with the help of a self-evaluation questionnaire, made and provided by the methodologist/mentor. The video tape can be of use for the discussion not only of the main parts and aspects of the lesson, but also the student teacher's body language, their movement in the classroom, the proper use of teaching materials and facilities, the way they monitor students' work, etc.

There has been a growing interest in studying English language in Bulgaria, and it is included in the curriculum as a subject that is studied in all grades of K-12 in Bulgaria. In some schools children start learning it in 1st grade in a verbal-only course of instruction while in most schools they begin in 2nd grade and continue studying it until 12th grade. Such a long period of language learning is beneficial for introducing metacognitive strategy instruction into a language course along with its content. These strategies can be divided into two groups - general strategies and domain-specific strategies. Planning, monitoring and evaluation are universal skills through which learners manage, direct, regulate and guide their learning while an example of domain-specific strategies is the comprehension strategies one can use while reading a text. Metacognitive strategies could be integrated gradually and in view of students' age and maturity.

There are several reasons for such possible educational intervention. First, acquiring and regularly applying metacognitive skills in one's studies is a long process and has been proven to need and take a lot of time. Second, English language is one of the few school subjects that is studied for such a long time along with Bulgarian language and Math. Third, most scientific research has been done in English, so teachers of English can get access to scientific literature and get acquainted with the concept of metacognition even if they haven't had prior specific instruction in it. If we assume that once developed, even to a certain extent, metacognitive skills are used in language learning, they can be transferred to other knowledge domains, so students can apply them in writing and mathematics, for example.

Teachers' role is still viewed as very important, or even crucial. It is assumed that metacognitive or self-regulated learners are better learners because they have had metacognitive teachers. Teachers can help students become aware of their attributive beliefs (some of which wrong) about their attitude to learning in general and their own learning, their strong and weak sides as learners, their learning styles

(visual, auditory, kinesthetic); by providing students with regular feedback on their performance teachers can help students find out the reasons for their difficulties and failures so that they would change their approach to learning.

In educational setting metacognition is generally important for adopting skills that are essential for students no matter what knowledge domain they focus their efforts on. Such skills are reflective thinking, problem-solving, decision-making and critical thinking.

Although acquiring metacognitive and regulatory abilities is a long process, numerous research results show that metacognitive instruction helps students improve their performance, realize their our cognitive potential, have more active part in the learning process. It also boosts their self-confidence and motivation to learn, become independent and successful learners and thus take responsibility for their own learning and academic achievement.

In view of the above mentioned arguments it can be concluded that if a change in student instruction is ever needed it should be started with changes and innovative methods in teachers' preparation and approach to both teaching and learning.

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