SYNTHETIC COGNITIVE APPRENTICESHIP MODEL – POSSIBLE WAY TO ENHANCE STUDENTS' METACOGNITIVE SKILLS

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The article presents the kaleidoscopic view on the concept of metacognition. There are a lot of implications showing the link between metacognitive skills, learning and teaching. Metacognitive skills such as self-direction, self-evaluation, and self-control, as well as orientation, planning, monitoring, testing, diagnosing, repairing, evaluation and reflection play an important role in facilitating the process of transition from teacher-centered environment to autonomous foreign language studies. Synthetic Cognitive Apprenticeship Model is suggested as possible way to help students enhance their metacognitive skills thus becoming more prepared for autonomous foreign language studies.

Keywords: metacognition, metacognitive skills, autonomous studies, Synthetic Cognitive Apprenticeship Model.

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Introduction

The learner autonomy (or self-regulation) in the foreign language learning process has been a dominant theme developed throughout the last 15-20 years. During this period of time the concept 'learner autonomy' has been given a wide interpretation and its ambiguity is still there: it means both the way of learning and the qualitative inclusion of a learner into foreign language studies. In the first case, autonomy means the forms of independence / self-support or purposeful learning with minimal participation of the teacher and learning usually taking place outside the classroom. In the second case, autonomy is more related to the following concepts: knowledge of learning purposes, participation in decision making process and assuming personal responsibility. Lately, closer attention has been devoted to the second interpretation of autonomy. Autonomous student means a learner who has trust in himself and desires to acquire strategies and knowledge to take some (if not all) responsibility for his foreign language learning. The term 'autonomy' is a rather wide concept. It means an individual's desire and ability to carry out, control, evaluate and project his language activity upon mastering the tactics and strategy of autonomous language learning, as well as the basics of its autodidactics (Šernas 2006).

Although the theme is not entirely new in educational research, the relevance of metacognitive skills, however, has not been properly assessed in Lithuania in terms of autonomous foreign language learning and teaching. In order to define metacognitive skills it is necessary to understand the concept of metacognition first. There are quite a few definitions of metacognition. The object of the research is the enhancement of students' metacognitive skills applying Synthetic Cognitive Apprenticeship model.

The aim of the research is to provide prerequisite information on concept of metacognition and to show the importance of metacognitive skills for autonomous foreign language studies.

The **methods of the research** include the in-depth analysis of methodological references in the field of metacognition and metacognitive skills.

The concept of metacognition

Metacognition – is the process of planning, assessing and monitoring one's own thinking; the pinnacle of mental functioning (Cotton 1991). Metacognition – having (cognition) and having understanding control over, and appropriate use of that knowledge (Collins 1994). Metacognition is "awareness of one's own thinking, awareness of the content of one's conceptions, an active monitoring of one's cognitive processes, an attempt to regulate one's cognitive processes in relationship to further learning, and an application of a set of heuristics as an effective device for helping people organize their methods of attack on problems in general" (Hennessey 1999: 3). Metacognition is awareness and management of one's own thought (Kuhn, Dean 2004: 270). Metacognition is the monitoring and control of thought (Martinez 2006: 696). I. Flavell was the first to mention and to define metacognition in the late 70s of the 20th century. Up to now it seems to be the most popular model of metacognition. According to him it is 'thinking about thinking' and is usually divided into two components: metacognitive knowledge and metacognitive skills. Metacognitive knowledge refers to awareness of one's own cognition, which covers declarative knowledge, procedural knowledge, and conditional knowledge. Metacognitive skills are defined as a set of activities, i.e., planning, monitoring, and evaluating, that helps individuals regulate their learning process (Flavell 1979; Flavell et al. 2002; Hartman 2001; McCormick 2003; Nelson 1996; Nelson, Narens 1990, 1994). In Table 1 some of the concepts frequently associated with the metacognition literature are shown.

Concept	Description
Metacognitive knowledge about persons	Includes a person's beliefs about intra-individual differences, inter-indivi- dual differences, and universals of cognition.
Metacognitive knowledge about tasks	The information available to apply to a cognitive activity and an individual's knowledge about the task demands of a given situation.
Metacognitive knowledge about strategies	Awareness of and beliefs about available strategies.
Level of conscious awareness of metacognitive knowledge	Retrieval and construction of metacognitive knowledge can be either conscious or unconscious.
Limits of metacognitive knowledge	Can be accurate or inaccurate, may not be activated when needed, may not have much influence when it is activated, and may not have a benefici- al effect when it is influential.
Duration of metacognitive experiences	Can be momentary or lengthy, as when we are consciously grappling with a challenging problem.
Occurrence of metacognitive experiences	Most likely to occur when one is engaged in intentional, reflective intellec- tual activities such as problem-solving and learning.

 Table 1. Metacognition concepts (adapted from T. L. Dawson, 2008)
 Concepts
 Concepts

Continued Table 1

Concept	Description
Effects of metacognitive experiences	Can lead one to establish new goals and to revise or abandon old ones, can cause one to add to one's existing metacognitive knowledge base, and can activate strategies that would otherwise have remained inactivated.
Memory-monitoring, selfregulation, meta-reasoning, consciousness / awa- reness, and autoconsciousness / self- awareness	Other terms for metacognition.
Transfer	Using a metacognitive skill learned in one context to solve a problem in another context.
Cognition	A general term for thinking, sometimes distinguished from metacogniti- on, which is thinking about thinking.
Ill-structured problems	Ill-structured problems are open-ended, with unclear goals, multiple solu- tions, and no "right" answers — like many of the problems we face in the workplace.
Double- loop learning	Learning how the way one defines and solves problems can be a source of problems. (Argyris 1991).

Metacognitive skills

There are a lot of findings proving that there between metacognitive skills, is a link learning and teaching. (Borkowski et al. 1987; Bransford et al. 1986; Byars-Winston, Fouad 2006; Cromley 2000; Garner 1990; Hascher, Oser 1995; Holton, Clarke 2006). University teachers imply that the majority of students come to a university with already acquired metacognitive skills at school or on their own, though there is a substantial number of students who failed to do so. The number of students who lack metacognitive skills in learning ESP at university is both surprising and disappointing. That means their learning process used to be totally controlled and guided by their teachers at school; as a result when they become university students they are unable to plan their foreign language learning process efficiently, i.e. they are not autonomous learners at all. This leads to the conclusion that learners do not have the basics of autonomy studies and would therefore encounter difficulties in developing independently their tactics and strategy for foreign language enrichment. Teachers rely too

much on textbooks and hardly allot any time to the training in metacognitive skills, nor do they increase students' capabilities of self-direction, self-evaluation, and self-control, as well as orientation, planning, monitoring, testing, diagnosing, repairing, evaluation and reflection. By acting synergetically, these skills would ensure effective autonomous foreign language studies. Students must by themselves acquire the basics of autonomous studies which are relevant for them and develop learning strategy and tactics of any language, along with their own autodidactics in picking up metacognitive skills in the learning process. Individually applied methods, without an integrated strategy and tactics, only allow an application of partly acquired learning techniques, so it is necessary to aggregate all these strategies and tactics, and synthesise all the gained knowledge into the language activity learning paradigm.

How can foreign language teachers help the learners to become autonomous? Different authors try to do it in a variety of ways. There exist different methods as well techniques and

strategies (Hartman 1990, 1993; Rings, Sheets 1991; Condravy 1995; Enos et al. 2003), direct explanation of metacognitive strategies (Rings, Sheets 1991; O'Malley et al. 1985), problem-based learning (Sungur, Tekkaya 2006), concept maps (Daley 2002), such methods as portfolio, reciprocal (Palincsar, Brown 1984), cooperative / collaborative (Artzt, Armour-Thomas 1992), Scaffolding (Vygotsky 1978; Holton, Clarke 2006), etc. There are still debates whether metacognitive skills are general or domain-specific. Though studies showed contraversial results, still Veenman et al. (Veenman et al. 1997, 2003, 2004) obtained strong support for the generality of metacognitive skills. It means that no matter what the subject is where metacognitive skills are enhanced it will be possible to apply them in any area of studies.

Teaching methods

Now we are going to discuss briefly two teaching methods (mixed and syllabus-based) widely used by university foreign language teachers and to suggest a Synthetic Cognitive Apprenticeship model as a tool for fostering metacognitive skills in students. The three methods are chosen with a view to explaining their efficiency in autonomous foreign language activity enrichment.

Mixed method is teacher-centred method used by the majority of university foreign language teachers. It means that a foreign language teacher uses a variety of methods, the difference is in the percentage of the applied techniques. The common thing is that almost all varieties of the mixed method have elements of the Direct instruction method. The reasons why teachers choose this method are diverse. One of the main reasons usually is that they lack metacognitive skills (e.g. self-regulation, self-assessment, monitoring) themselves, therefore for teaching metacognitively, i.e. to transit from teachercentred teaching to learner-centred teaching they have to be retrained which is hard to do

for financial reasons. Another reason is that such method is effective for the introduction and application of a new material. Students can demonstrate higher exam scores. But the main disadvantage of the Mixed method is that it is explicit, teacher-based method, which can familiarise learners with a range of autonomous learning techniques but this will not foster the skills related to cognitive control of the learning process. Eventually, students will not be able to apply the above mentioned techniques efficiently and cannot presuppose their active involvement onto autonomous foreign language learning process. The Traditional (syllable**based**) **method** is a method where a teacher delivers instructional material, learning tasks as well as classroom techniques according to an institution syllabus. Teachers working according to this method choose and apply the techniques only from their professional list. A successful combination of the applied techniques depends on the goals, anticipated results and on the personality of a teacher (autocratic, democratic, motivated, not motivated, etc). The last method mentioned in this article is Synthetic Cognitive Apprenticeship model, which roots from Cognitive apprenticeship model (Collins et al. 1989) which includes three main elements: modelling, coaching and scaffolding. The Synthetic Cognitive Apprenticeship model is a model which consists of four dimensions: content, methods (modelling, coaching, scaffolding, fading, articulation, reflection, exploration), sequence as well as social factors. The main difference between Synthetic Cognitive Apprenticeship model and Cognitive Apprenticeship model is that that the first one takes into the account the philological, cultural and personal experience of a learner as well as well his / her learning style.

It is seen from the scheme (Fig. 1) that the teacher performs the leading role at the first two stages. By enhancing students' existing knowledge the teacher provokes brainstorming on a certain topic. The teacher is an expert at this stage, his task is to be able to externalize cognitive processes taking place in his head. He



Fig. 1. Stages of the enhancement of metacognitive skills

models the problem solving himself, thinking loudly, gives several possible variants, imagines unforeseen problems at the same time using the new lexical material of the lecture in different sentences and contexts. He does it without emphasizing that they are 'NEW' words and models the situation in such a way that students would imitate the teacher and then they would do the task themselves including the new words. Then the situation changes and a student's role becomes as important as that of the teacher. Now the role of the latter is to monitor that the task would be performed as closer to 'ideal' model as possible: the teacher advises, corrects mistakes, suggests other variants of solving a problem, i.e. he applies scaffolding. Learners prepare to do a task. To do so they have to evaluate its complexity, to choose certain techniques for doing it. After that they discuss the best decisions in small groups or in pairs with possible teacher's support. At these two stages learners acquire self-regulation as well selfcontrol skills which are the core elements in teacher's withdrawal from scaffolding. Students perform the tasks on their own and monitor others. They compare variants, correct and assess themselves. The conclusion is reached that in order to become autonomous, learners have to master metacognitive skills covering self-direction, self-control and self-evaluation, which are further subdivided into such skills as monitoring, testing, diagnosing, repairing, evaluation, and reflection.

Conclusions

The challenge in foreign language teaching is to educate at present and for the future. This means to facilitate the learning of knowledge that can provide metacognitive thinking skills for becoming automous foreign language learners. As majority researchers proved that metacognitive skills are domain general that means it will be possible to transfer the acquired metacognitive skills to other areas of studies. Metacognition is not often coherently developed in the curriculum. The key to enhancing metacognitive skills lies in the professional development of teachers as well as the development and use of support materials. Teaching and learning should be designed so that students are active learners who can research and construct knowledge. Synthetic Cognitive Apprenticeship model is suggested as a recommended model for preparing students to become autonomous.

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SINTETINIS SĄMONINGO MOKYMOSI MODELIS – STUDENTŲ METAKOGNITYVIŲJŲ ĮGŪDŽIŲ UGDYMO BŪDAS

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Straipsnyje pateikiama įvairiapusė metakognicijos sąvokos apžvalga. Pastarųjų tyrimų rezultatai rodo, kad egzistuoja ryšys tarp metakognityviųjų įgūdžių, mokymo ir mokymosi. Metakognityvieji įgūdžiai, tokie kaip vadovavimas sau, savęs vertinimas bei savęs kontroliavimas, orientavimas, planavimas, stebėsena, testavimas, diagnozavimas ir refleksija atlieka svarbų vaidmenį siekiant palengvinti perėjimo procesą nuo mokymosi, kurio centre yra dėstytojas, prie autonominių užsienio kalbos studijų, kurių centre – studentas. Sintetinis sąmoningo mokymosi modelis siūlomas kaip vienas iš būdų padėti studentams ugdyti jų metakognityviuosius įgūdžius ir taip pasiruošti autonominėms užsienio kalbų studijoms.

Reikšminiai žodžiai: metakognicija, metakognityvieji įgūdžiai, autonominės studijos, sintetinis sąmoningo mokymosi modelis.

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