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**SELF-REGULATED LEARNING IN HIGHER EDUCATION: TEACHING  
EXPERIENCE IN TEACHER TRAINING**

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**Abstract:** The concept of lifelong learning (LLL) spread rapidly and gained importance in 21st century. Individuals should learn and acquire knowledge and skills throughout their whole life span. This means that they should be encouraged to develop strategies which involve social cognitive perspectives, information processing perspectives, learner performance perspectives among others. A substantial part of understanding LLL processes lies in the theory of self-regulated learning (SRL) which is broadly used in higher education.

Encouraging learning strategies among university students in the field of education and especially in teacher training is undoubtedly an important academic task. This paper focuses particularly on self-regulated learning (SRL) as a strategy of higher education teaching and learning, its origin, elements, main characteristics. It is compared to self-directed learning (SDL). There are three interactive dimensions of SDL: self-management, (or task control); self-monitoring, (or cognitive responsibility), and motivation, (or maintenance of effort). The model of SDL is compared to the model of SRL with its inherent cognitive strategies of organization, rehearsal, elaboration; metacognitive strategies planning, monitoring, regulating. The socio-cognitive model of SRL is applied to a particular field of knowledge – technology education for university student teachers. Among others, tasks analysis and self-motivation are the two main types of processes involved in SRL for the university students. We used observations and interviews with university students in teacher training courses to outline the main domains of self-regulated learning and its advantages for academic success and further on into students' pre-service practice. Practice and observation of how different elements of SRL work and can be successfully used are shared by us in particular teacher training courses for technology education and methodology of technology education in primary schools. The ability to manage the contexts of learning and information becomes an important indicator of the efficacy of the SRL strategy and their learning success. Motivation and learning strategies are outlined. Fostering the skills of SRL is an intervention that improves the experience of teaching and learning of future teachers in their pre-service education.

**Keywords:** self-regulated learning, learning strategies, teacher training.

**1.INTRODUCTION**

With the growing interest in the quality of education demonstrated by all practitioners, public opinion and the profession itself, the efficiency and the quality of teacher education has become a central topic in the educational discourse [4]. As we are constantly facing future in whatever we do, it is of utmost importance how we understand the proper way of teacher training. Teachers are those subjects who teach the future. Their teaching strategies and teaching styles are directly connected to their learning strategies and styles.

External and internal factors affect particular systems. Most necessary it is to encourage development of internal resources by directing certain learning strategies and styles.

One of the main concepts concerning the learning styles is that of Life Long Learning (LLL) based on the premise that individuals as well as teachers themselves learn throughout their whole life span. If educationalists understand it right, it means to develop from early age social cognitive perspectives in the learners, proper information processing perspectives and learner performance perspectives among others. Those three perspectives lie at the core of self-directed learning and self-regulated learning itself. Both of those strategies belong to the socio-cognitive models in cognitive and educational psychology and their implication for the theory and practice of education have been studied within a comprehensive and holistic approach.

This paper presents the author's research work on the theory of SRL and its practical implications and ideas used in teacher training courses in BA teacher training programmes in the field of Primary school education.

**2.SELF-REGULATED LEARNING: ESSENTIALS**

Self-regulated learning is grounded in the socio-cognitive theory of A. Bandura. The field of interest about SRL has developed significantly since 2001. A sign of that developing evolution is that there are at least two meta-analyses of the effects of SRL: Dignath and Büttner [3], and Sitzmann and Ely [10]. A second indicator is that there are new

SRL models in the educational psychology field. A third aspect of evolution is that there is a variety of established methods to evaluate SRL [11].

It is assumed that self-regulated learning is the learning process in which certain levels of metacognitive, motivational and behavioural activities in one's learning process are active [2].

Learners who actively regulate their process of learning and the outcome of the learning use different cognitive and metacognitive strategies which are systematically directed towards achievement of their learning goals [5, 7]. Other sources are recognized to have been used in learning strategies such as organization of time and adaptation of certain aspects of the environment – physical environment and the environment of interaction (both learning and teaching environment). Effort control is connected to the learning difficulties [8, 1]. Students who self-regulate their learning have been recognized of having higher levels of self-efficacy. They express confidence in their abilities (positive attributions) and are more internally motivated (emotional-affective aspects) [8].

Self-regulation also refers to learners' planning, monitoring and regulating their own cognitive actions and actual behaviour while learners set goals for the process of learning and implement it. Monitoring includes ability to control attention, to self-check the understanding of the content and to manage time by keeping track of its availability [6, 9].

Different models of self-regulated learning have been outlined and reviewed especially for educational purposes [11].

As socio-cognitive models are more comprehensive and easy to understand and apply, their emotional and motivational aspects step back as it comes to teacher training and metacognitive aspects due to increased performance of cognitively demanding tasks in which it is necessary to use more specific strategies [3].

SRL and SDL by their nature are very close to each other.

In the realm of educational thinking especially in higher education it is the nature of an adult learner who is independent, autonomous and self-directed in their learning efforts and setting goals. The process of SDL begins with the learner's initiative, diagnosing the learning needs, formulating the learning goals, identifying all types of resources [6]. Implementation of different learning strategies and evaluating outcomes are those two components which make SRL and SDL very close in nature distinguishing performance as visible behaviour. Most often SDL contains a linear mode of presentation of stages/steps:

- Learning needs are diagnosed;
- Learning needs are formulated;
- Resources for learning are identified;
- Learning strategies are chosen and implemented;
- Learning outcomes are evaluated [6].

On the surface of SDL is the learner's control over the objectives of learning and the means for learning. SDL is not dependent on the teaching strategies and methods. It is independent on the subject matter. Self-directedness is a personality trait which is a result of the following interacting dimensions:

- ✓ Self-management (task analysis with the processes of organization and elaboration);
- ✓ Self-monitoring (cognitive responsibility for the ability to observe and regulate own behavior);
- ✓ Self-motivation (maintenance of effort in achieving goals) [6].

More focused on learning in various types of situations (formal, non-formal, informal) SDL is seen as a general characteristic of an adult learner. Comparing to it, SRL is situational in its nature. It focuses on how learners organize all types of conditions in a learning process, physical and psychological, and what strategies they use to achieve learning goals in learning contexts.

Both SDL and SRL are important as they are concepts predominantly in adult education. Similarities can be found in: The dimensions of the bipolar correlation - internal (personality) and external (process);

- Both drive goal-directed behavior;
- Both require active participation in the learning process;
- Both develop metacognition and intrinsic motivation.

The main difference outlined is the level of the constructs themselves. While SDL is a broader macro-level construct, SRL is a narrower micro-level construct. The self-directed learner is assumed to initiate the learning task. The self-regulated learner usually has the task set by the teacher.

### **3. TEACHER TRAINING AND SELF-REGULATION IN LEARNING**

Teacher training or teacher education aims at preparing learners for a professional role as reflective practitioners.

Teacher education in Bulgaria is based on knowledge and experience. Professional competence is built up and acquired when both of them are successfully linked. The demands are complex and they have to simultaneously cope with the growing number of competences including the one connected to their own learning styles.

It is important to create learning activities that fit capacity and self-concept, demanding to work on these tasks in an elaborated way to foster university student teachers in their professional development. They need to show learning-oriented motives and use appropriate learning strategies to reach the relevant goals of specific training courses. The context of their preparation involves requirement and knowledge, challenges, copying and individual resources, development and effects outcomes. This is a complex task. What educational practice teaches us is that we as educators in higher education have to be aware of the importance of our own attitude towards the responsibility of future teachers to the regulation of the learning and the learning styles of students at school.

To pursue worthy academic goals and effective professional development, pre-service teachers need the complex competence to effectively balance affect (how they feel), behavior (what they actually do), and cognition (how they actually think). During the pre-service stage of their teacher education students are challenged by requirements to their own learning styles.

This emphasis in teacher education we use in two courses in Primary teacher education which deal with the Foundations of technology and entrepreneurship education and Methodology of primary technology education and entrepreneurship education. The courses are subject, knowledge and skills-oriented.

The main learning goals of the courses concern student teachers' competences in the following teaching (competence-based) areas:

- ✓ Be prepared and ready to get themselves involved in the thinking and learning processes about the material world of primary school students (according to their age and phase of development);
- ✓ Be ready to monitor and foster primary school students during their learning activities – learning by experience and learning by doing;
- ✓ Know well and successfully use methods of teaching technology education to foster students in the development of basic lines of educational process: skills to use and skills to learn;
- ✓ Be professional in creating problem-based learning and project-based learning situations for students in order to apply a wide range of learning strategies;
- ✓ Recognize and manage different learning strategies preferred in the learning activities of students;
- ✓ Be able to analyze and evaluate their own professional actions as teachers, referring to their own learning process as well as the needs of the students.

In our experience four important lines of teaching are the following:

- Skills learning;
- Tutor learning;
- Self-directed learning;
- Self-regulated learning.

The intensity of learning activities of student teachers, their effective use of learning strategies and specific individual resources have an impact on the extent of the learning outcomes. We use observations and interviews on the basis of elements of two educational tools for evaluating the level of pre-service teachers self-regulated learning: Motivated Strategies for Learning Questionnaire (MSLK) [7] and a combination of tools for tasks analysis (effort, time, organization, rehearsal, elaboration and self-motivation). According to the theoretical framework, composed in the theory base of the study presented in this text, the evaluation of student teachers' SRL strategy focuses on the impact of the quality of their development as teachers, the investigation and learning commitment of the student teachers and their individual resources to deal with problem-based and project-based tasks on their learning outcomes, evaluated by the achievement of the objectives of the courses. We have elaborated our own interview tool which we use in the task analysis.

Examples of items that are used to assess the level and the efficacy of SRL strategy of student teachers may include:

How well have you reached your goals?

How do you evaluate the quality of the process and the goal?

How much have you yourself contributed to your learning success?

How strong was your engagement? (in case of a team work)

Did you think what you really needed to learn before you began the task?

Did you look for concrete examples of specific learning content?

How did you motivate yourself in the task completion?

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Did you try to elaborate new knowledge and new things? etc.

The long term learning needs in teaching profession support initiative that address many factors in SRL during pre-service teacher training. Such initiatives are needed to assist perceptions of success in in-depth learning strategies.

#### 4.CONCLUSION

SRL is an important aspect in education with a special attention to teacher education. It builds on an important task of education: developing lifelong learning skills. Self-regulatory competence becomes relevant in long-term learning projects what actually constitutes the teaching profession.

By effectively using the SRL strategy in teacher training during problem-based and project-based tasks we as educators help pre-service teachers relate to their ability to understand and control inner and outer learning environments effectively.

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