METHODS OF ASSESSING STUDENTS' SELF-REGULATED LEARNING SKILLS

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Abstract: Self-regulated learning (SRL) skills are important in the learning process. The first aim of the study is to explore the concept of SRL and itvalue in the educational process. Another aim is to identify methods and instruments for assessing SRL skills and to adopt one of them in practice. Self-regulated Learning Perception Scale developed by Turan (2009) was used to determine SRL skills of 102 first year students at the Institute of Psychology and Education of Kazan Federal University. The results showed that the average score for motivation and action to learning was 21.83 when maximum score was 35. The average score for planning and goal setting was 24.13 when maximum score was 40. The average score for strategies for learning and assessment was 57.02 when maximum score was 95. The average score for lack of self-directedness was 20.33 when maximum score was 35. The current study is descriptive in nature and does not attempt to explain a cause and effect relationship.

Keywords: self-regulated learning, methods of assessment, university student.

1 Introduction

The concept of self-regulated learning refers to "the process for learners taking the initiative to adjust the cognition, emotion and behavior in order to enhance the learning effect and achieve learning goals" (Zimmerman,1990).

Central to this concept are the autonomy and responsibility of students to take charge of their own learning (Carneiro R. et al,2011).

Self-regulated learning "can help describe the ways that people approach problems, apply strategies, monitor their performance, and interpret the outcomes of their efforts" (Schunk et al, 2008).

Zimmerman and Schunk (2008) in their research point out that in comparison to poor self-regulators, good self-regulators "set better learning goals, implement more effective learning strategies, monitor and assess their goal progress better, establish a more productive environment for learning, seek assistance more often when it is needed, expend effort and persist better, adjust strategies better, and set more effective new goals when present ones are completed" (Zimmerman and Schunk ,2008).

"Students can be described as self-regulated to the degree that they are metacognitively, motivationally, and behaviourally active participants in their own learning process" (Zimmerman, B.J. (1998a)).

Self-regulation involves several components: "self-regulation involves *cognitive, affective*, *motivational* and *behavioural* components that provide the individual with the capacity to adjust his or her actions and goals to achieve the desired results in light of changing environmental conditions" (Zeidner et al, 2000).

Zimmerman (1998b) developed a model which describes how university students who aim at improving their performance self-regulate their learning. According to this model, a cycle in self-regulated learning consists of four steps: (1) self-evaluation and monitoring, (2) goal setting and strategic planning, (3) strategy implementation and monitoring and (4) strategic outcome monitoring (Zimmerman ,1998b).

Zimmerman (1998c, 2000) also suggested a social cognitive model of selfregulated learning which is richer with respect to the processes which are considered at each stage. According to this model, self-regulation is achieved in cycles consisting of (1) forethought, (2) performance or volitional control, and (3) self-reflection. Zimmerman (1998c, 2000) describes the stages as follows (Zimmerman, 1998c ; Zimmerman, 2000).

- *Forethought*. In the forethought phase, task analysis and self-motivation beliefs are important. Task analysis refers to planning processes like goal setting and strategic planning. Self-motivational beliefs comprise a student's self-efficacy beliefs, his outcome expectations, intrinsic interest and goal orientation. In the forethought phase, learners can ask when and where they will write, how they will start, and what will help them to write.
- *Performance or volitional control*. In this phase, the chosen strategy is implemented and monitored by the student. Zimmerman distinguishes between self-control and self-observation. Self-control refers to regulatory processes like self-instruction, imagery, attention focusing and task strategies. Self-observation includes monitoring strategies like self-recording and self-experimentation. In the performance phase, learners can try to find answer to the questions whether they accomplished the aim of the assignment, whether it is taking more time than the planned time, whether they can be encouraged to keep going, and what will help them.
- *Self-reflection*. In the self-reflection phase, the student tries to evaluate the outcome of his efforts. In the self-reflection phase, the questions "whether the students did a good job, how they kept on task, what helped them, whether they gave enough time to complete the assignment, whether they chose the right study strategies, whether they set rewards and consequences for themselves, and whether the students followed their plans" are asked.

The value of SRL is in its emphasis on the individual as a pivotal agent in defining learning goals and strategies, recognizing as it does how that individual's perceptions of him or herself alongside learning-task characteristics influence the quality of learning that emerges (Fahrutdinova et al, 2015; Fakhrutdinov et al, 2016).

Mooij (2007) suggested that in order to encourage students to develop their skills for self-regulated learning, self-regulation should benefit from the selection of learning tasks and the coaching and assessment of learning. These three activities may be learner-controlled, but they may also be assisted by teachers (Mooij,2007).

When learners become self-directed, personal influences are mobilized to strategically regulate behavior and the immediate learning environment. Self-directed learners are assumed to understand the impact of the environment on them during acquisition and to know how to improve that environment through the use of various strategies.

Bandura (1986) ascribed much importance to a learner's use of self-regulation strategies. In his view, strategy applications provide a learner with valuable self-efficacy knowledge. This knowledge, in turn, is assumed to determine subsequent strategy selections and enactments; "such representation knowledge is put to heavy use in forming judgments and in constructing and selecting courses of actions" (Bandura,1986).

Zimmerman and Martinez-Pons (1986) relied on interviews with high school students about self-reported strategies used in a

variety of common learning contexts and they found evidence of students' use of 14 types of self-regulated learning strategies (Zimmerman,1986). See table 1.

Table 1. Self-regulated learning strategies.

	Categories/Strategies	Definitions
1	Self-evaluating	Statements indicating student-initiated evaluations of the quality or progress of their work; e.g., “I check over my work to make sure I did it right”
2	Organizing and trans-forming	Statements indicating student-initiated overt or covert rearrangement of instructional materials to improve learning; "I make an outline before I write my paper."
3	Goal-setting and planning	Statements indicating students’ setting of educational goals or subgoals and planning for sequencing, timing, and completing activities related to those goals; e g.. “First, I start studying two weeks before exams, and I pace myself."
4	Seeking information	Statements indicating student-initiated efforts to secure further task information from nonsocial sources when undertaking an assignment; e-g., "Before beginning to write the paper, I go to the library to get as much information as possible concerning the topic.'"
5	Keeping records and monitoring	Statements indicating student-initiated efforts to record events or results: e.g., “I look notes of the class discussions"; "I kept a list of the words I got wrong."
6	Environmental struc-turing	Statements indicating student-initiated efforts to select or arrange the physical setting to make learning easier; e.g.. “I isolate myself from anything that distracts me"; “I turned off the radio so I can concentrate on what I am doing."
7	Self-consequating	Statements indicating student arrangement or imagination of rewards or punishment for success or failure; e.g, "If I do well on a test, I treat myself to a movie."
8	Rehearsing and memorizing	Statements indicating student-initiated efforts to memorize material by overt or coven practice; e.g. “In preparing for a math test, I keep writing the formula down until I remember it."
9-11	Seeking social assistance	Statements indicating student-initiated efforts to solicit help from *peers* (9), *teachers* (10), and *adults* (11); e.g., “If I have problems with math assignments. I ask a friend to help.”
12-14	Reviewing records	Statements indicating student-initiated efforts to reread notes (12), *tests* (13), or *textbooks* (14) to prepare for class or further testing.

The main methods and instruments of SRL measurement described in literature are self-report tests mostly. Although there are many ways to capture data on learner’s self-regulation (e.g. think-aloud protocols, error detection, observations and trace methodologies), self-report measures have still stayed dominant so far. Among them are SDLRS (Self-Directed Learning Readiness Scale) and OCLI (Oddi Continuing Learning Inventory) developed by Lucy M. Guglielmino, PRO-SDLS, developed by Brockett and Hiemstra, LASSI (Learning and Strategies Study Inventory by Weinstein, Schulte and Palmer in 1987) and MSLQ (Motivated Strategies for Learning Questionnaire by Pintrich, Smith, Garcia and McKearchie in 1991), MAI (Metacognitive awareness inventory by Schraw and Dennison in 1994), SRLPS (Self-regulated Learning Perception Scale by Turan in 2009), Self-regulation Questianary by Osnitsky (1991).

2 Methods

The participants in this study were 102 first year university students at the Kazan Federal University, Institute of Psychology and Education. Self-regulated learning perception scale (SRLPS) by Turan was used to measure SRL skills of the students.

The Self-regulated Learning Perception Scale (Turan, 2009) consists of 41 items representing four dimensions: *motivation and action to learning*: seven items, the minimum possible score is seven and the maximum possible score is 35; *planning and goal setting:* eight items, the minimum possible score is eight and the maximum possible score is 40; *strategies for learning and assessment*: nineteen items, the minimum possible score is 19 and the maximum possible score is 95; and *lack of self-directedness*: seven items, the minimum possible score is seven and the maximum possible score is 35. The items were answered through a five-point Likert scale and assigned a value from one to five. Item scores were summed and averaged to obtain average level of SRL of first year students.

3 Results

The average score for motivation and action to learning was 21.83 when maximum score was 35. The average score for planning and goal setting was 24.13 when maximum score was 40. The average score for strategies for learning and assessment was 57.02 when maximum score was 95. The average score for lack of self-directedness was 20.33 when maximum score was 35. See figure 1.

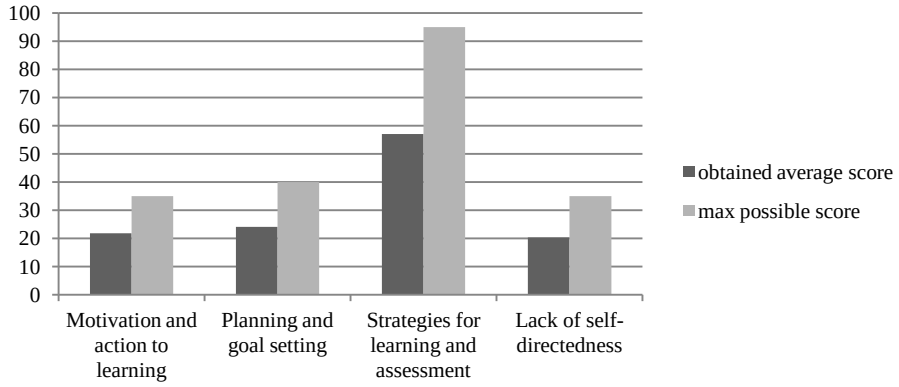

figure 1. Scores of self-regulated learning perception.

4 Discussion

Motivation and action to learning dimension measures students' general attitudes toward learning and their general motivation for succeeding in learning. The degree to which students accept responsibility for studying and for their performance is reflected in the everyday behaviors they exhibit related to school and school tasks. These behaviors include reading the textbook, preparing for class, finishing assignments on time, and being diligent in studying, even if the topic is not particularly interesting to them (or even trying to figure out ways to make it more interesting). Students' scores on this scale measure the degree to which they accept responsibility for performing specific tasks related to learning success. Students who score low on this measure need to work on their motivation and their responsibility to learning. Accepting more responsibility for studying and achievement outcomes requires that students learn to attribute much of what happens to them in school to their own efforts rather than to outside forces such as luck or poor teachers, or to uncontrollable forces such as innate ability. Accepting more responsibility and attributing success to one's efforts results in more effective studying and school performance.

Planning and goal setting dimension measures students' ability to plan the process of learning, to set and achieve learning goals. Goals involve setting and modifying task-specific goals that serve as criteria against which to gauge progress. Goal orientations are the reasons learners engage in tasks; for example, why they want to earn a high grade in a course or perform their best during a semester. Students who score high on this measure are able to self-generate thoughts, feelings and actions to attain personal goals. Students who score low on this measure need to work on goal setting, specifically on individual tasks and assignments.

Strategies for learning and assessment dimension measures students' use of strategies and their ability to assess personal learning progress. Students who score low on this measure may need to learn more about how to self-regulate, how to create a plan of learning goals achievement, the characteristics of different types of strategies for learning goals achievement, and how to self-assess. Knowing learning strategies and how to use them helps students target their study activities, set up useful study goals, implement an effective study plan, and demonstrate their knowledge and skill acquisition so it can be accurately evaluated.

Lack of self-directedness dimension measures students' ability to study effectively without teacher's guidance. Students who score low on this measure need to be taught to use or create study aids that support and increase meaningful learning. They may need to learn more about the types of study aids provided in educational materials and classes and how they can create their own aids. Using and creating study aids improves both the effectiveness and the efficiency of learning.

5 Conclusion

The findings of this study show that the first year students at the Institute of Psychology and Education of Kazan Federal University have average scores in SRL. The quantitative evaluation of the scores has shown that self-regulated learning skills need improvement.

The aim of this form of assessment was also to enable students to individualize and personalize their learning by supporting and encouraging active participation, taking responsibility of one's own learning, observation and reflection of learning by students.

The most important limitation of the current study is that it was descriptive in nature and did not attempt to explain a cause and effect relationship. Nevertheless, this study provides a hint as to where to start investigating and indicates those methods that appear more promising for achieving improvement of self-regulated learning skills.

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