The Role of Learning Strategies in the Development of the Learning-to-learn Competency of 11th Graders from Technical Schools

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Abstract

The interest of education in learning strategies has increased due to the innovative concept of competencies, in fact, the strategies are considered part of the resources that the student should engage in order to put in practice the competences. The learning to learn ability that is to become autonomous, independently in the learning is often valorised in the pedagogy of competencies. Our work aims to be the result of a theoretical and methodological research effort whose premises will become the starting point for formulating the guidelines of design work on improving students' learning activity. Finally, we analyze the results of the research that open wide possibilities for structured pedagogical actions in developing the learning to learn competence, especially in the educational intervention programs to stimulate critical reflection, metacognitive reflection and strategic decisions making for students with learning difficulties.

Keywords: learning strategies; learning to learn competence; metacognition; self-regulated learning.

1. Focus of the paper

Education and training have to secure the learning environment in order for learning to learn competence to be developed for every student, including those that are part of a disadvantaged group. A great emphasis is also put

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on developing this competence in various learning contexts. For contemporary pedagogy “learning defines competence acquisition” (Chiș, V., 2005) in one or more activity fields. “Learning to learn” is one of the desirable competencies proposed by EU citizens. Pedagogy, therefore, that aims to develop competences enhances student's efforts for meaningful experiences by focussing on purpose, active, authentic and collaborative tasks. (Jonassen et al., 2008) It has become clear that contemporary educational systems put competences developed in school in the role of organizers of knowledge. What differentiate them are already practices resulting from the operationalization and contextualization of theoretical approaches. Learning to learn increases student responsibility to accept the role of leader of their own learning. Organizing a supportive educational environment that will enable students to learn from mistakes, to develop gradually self-directed capabilities, learning management, reflection on their own learning, is an essential condition of instruction. Therefore, for the students who have learning difficulties, the development of the learning to learn competence represents an important pedagogical stake.

2. Theoretical framework for the study

The balancing of the relation between declarative, procedural and strategic knowledge of content structure would be a necessary condition for the transition from expository and verbalist education to an actional and applied education, namely education centered on competencies. “Incorporating knowledge in cognitive strategies adjusted emotionally and motivationally would be condition to achieve a strategic education, namely an education centered on strategic knowledge sustained affectively and motivationally.” (Voiculescu, F., 2010) In education, the interest in learning strategies increased with the idea of competences, in fact, the strategies are considered part of the resources that the student should engage in order to put in practice the competences. (Peters and Viola, 2003; Tardif, 2006) A strategy is an approach of learning and it reflects the way in which students use of information. The training of learning strategies regards the actions performed by the more active students determining them how to learn and how to use what they learn in order to be successful. Active and Strategic Teaching favors the acquisition of knowledge by the students of declarative, procedural and strategic knowledge. The last two assume an achievement of higher taxonomic levels of thought and favoring the gaining of autonomy in learning. Strategic Teaching “shapes learning strategies adopted by students and high intrinsic motivation strategies for acquiring a knowledge progressively more complex.” (Bocș, M., Stan, C., Manea, A.D., 2008) We say that learning is strategic when the learners are aware of the learning process and control their efforts in the use of particular skills and strategies. These features of learning are well defined through this concept of strategic learning (Paris, Lipson and Mixson, 1983 apud Vianin, P., 2011)

Traditionally, learning strategies have been conceptualized as a cognitive and metacognitive process combination. However, some studies have suggested a more comprehensive perspective of learning strategies, including not only traditional roles of cognition and metacognition, but also influences of motivation, emotions and behavior. For example, Borkowski and colleagues (1986) studied the motivational constructs (eg, attributing beliefs, self-efficacy, self-regulation), which have emerged as agents of internalization, activation and execution of their own learning strategies. (Schwinger, Steinmayr and Spinath, 2009) In addition, research results have shown that motivational strategies used by students can predict the use of other learning strategies. (Wolters, 1999) What is perhaps more important is the recognition that students need to obtain knowledge and use a number as strategies as well as to become aware of where, when and why such strategies could be used and to experiment and evaluate the impact of strategies on their own individual styles.

Despite the important role of strategies, researchers show that teachers do not expect very much of their students, focusing their teaching on knowledge and procedures. This phenomenon is paradoxically encountered in the teenage students’ classes when even teachers and parents expect them to become self-directed learners. For example, in text comprehension meta-analyzes of Dignath and Büttner (2008) and Dignath, Büttner and Langfeldt (2008) on students in primary and secondary school cycles concluded that trainings for learning cognitive and
metacognitive strategies are effective, especially when they are coupled with meta-knowledge learning regarding the terms of using strategies and with metacognitive reflection requested by among students. Students who have nonspecific learning difficulties don’t show specific disturbance but are slower, less strategic, they generalize less knowledge and have many difficulties to make connections between tasks: it would be as a consequence of the fact that they don’t transfer strategies learning. (Bosson, M., 2010) Some researchers (Borkowski & al., 2000) also argue that this lack of transfer is generated by the students’ low motivational level. In general, these students are not aware that they have the means to develop strategies that enable them to achieve success in solving school tasks. Limited or ineffective use of strategy and the lack of transfer of strategies to new situations are important characteristics of students with learning difficulties (Swanson, 2000; Fuchs & al., 2003; Reid, R., Lienemann, T.O., 2006). Indeed, the efficient use of the strategy requires a certain degree of metacognitive knowledge (Björklund, 2005), what are the strategies from the student’s repertoire and in what situations should be applied. Thus, metacognition plays an important role in learning.

Self-regulation is a field of study that has grown enormously in recent decades and now there is a proliferation of research on this subject. Zimmerman and Schunk (2001) believe that the growing popularity of self-regulated learning is directly related to the primary objective of education: teaching students to effectively use learning strategies independently. Many researchers of self-regulated learning agree that it is a self-initiated action involving goal setting and adjusting behavior to achieve these goals. These cognitions and behaviors are regulated by metacognition, supported by intrinsic and extrinsic motivation and measured continuously through a process of self-monitoring and evaluation. The distinction between self-regulation and metacognition is sometimes unclear in the literature and there is no consensus on the nature of the relationship between these two terms. Today, many researchers designing self-regulation as a broader term and define it as a set of knowledge and metacognitive skills (Boekaerts & Corno, 2005). Self-regulation is considered as exceeding metacognition, because it includes affective/emotional, motivational and behavioral monitoring and self-control processes. A comprehensive definition of self-regulated learning adopted by several authors (Boekaerts & Corno, 2005; Butler & Winne, 1995; Winne & Perry, 2000; Zimmerman, 1990) is the learning guided by metacognition, by strategic action, by motivation to learn. Self-regulated learning can be defined as an active and constructive process, through which individuals monitor, regulate and control cognition, motivation, behavior, guided by their own goals and contextual characteristics of the learning environment (Pintrich, 2000). Students who have self-regulated capacities are active participants in terms of metacognitive, motivational and behavioral in their own learning (Zimmerman, 2000) and thus succeed in school learning. (Roger & Swan, 2004)

3. Methodology

Our work aims to be the result of a theoretical and methodological research effort whose premises will become the starting point for formulating guidelines for the design activity on improving students' learning activity. The aim of explorative approach described in this paper was to investigate and outline the situation at the educational reality, regarding the general opinion of teachers and students on frequency of manifestation of learning strategies to 11th grade students and the possibilities of optimizing their relation to specific educational practices that support learners to practice self-regulation of learning. Therefore, the conducted preliminary investigations aimed to gather relevant data in order to configure the premises which were the basis for the design and organization of future formative experimental intervention. During the planning of our investigative and observational research as well as of work research instruments, we operated with the following general aim of the observational stage: identifying among teachers and 11th grade students from technical high schools and colleges the degree of awareness and regulation of learning strategies.

The sample of subjects included within the observational research consisted of a number of 186 teachers and 560 students in the 11th grade from eight technical high schools and colleges. The realistic and rigorous nature of information collected was provided, in a complementary manner, by data collected using the survey method (as
extensive research method) and the questionnaires - as research tools. Teaching and Learning Strategies Questionnaire (TLSQ) designed by Abrami P.C., Aslan O. & Nicolaidou I., 2007 was translated and adapted by us for teachers from technical high schools and colleges, having previously got agreement authors for use. The authors designed the questionnaire as a way for teachers to describe the use of self-regulated learning strategies and processes for the use of electronic portfolio in classes. This tool was developed on the basis of Zimmerman’s research (2000) and of the recent scientific literature analysis regarding the self-regulated learning process. TLSQ contains several open-ended questions and 73 close-ended questions on Likert scale. The questionnaire is divided into four sections: students’ learning strategies, approach to teaching, portfolio use and technology experience. From this questionnaire we have selected the scale of students’ learning strategies and the scale of approach to teaching, in which the teachers would have to express their approval regarding the affirmations on a Likert scale rated from 1 to 5 (1-strongly disagree, 5-strongly agree). In parallel, the students answered The Student Learning Strategies Questionnaire (SLSQ) designed by to Abrami P.C. & Aslan O., 2007, which was translated and adapted by us. The items were designed to match the ones from the students’ learning strategy scale in the teachers’ questionnaire. Both questionnaires were piloted in observational stage. After analyzing the reliability of the whole TLSQ we have obtained a Cronbach alpha internal consistency coefficient value of 0.91, indicating a good reliability of the questionnaire. For learning strategies scale we have achieved a Cronbach alpha coefficient of internal consistency of $\alpha = 0.93$, and for approach to teaching scale a coefficient of $\alpha = 0.85$, signifying a very good fidelity. For the whole SLSQ we have obtained an internal consistency coefficient Cronbach alpha $\alpha = 0.82$, meaning that for a very good fidelity. By comparing the results obtained in the pilot study with those from the proper research, we noticed a decrease in the values of coefficients of internal consistency, but to an insignificant degree. The results express a good reliability, which allows us to consider that the research instruments are appropriate for assessing the learning strategies and the manner of teaching these.

4. Sample data and results

As regards the scale for Approach to teaching self-regulated learning strategies we asked teachers to reflect whether they can make proof of some of the teaching behaviours that challenge and support the students’ metacognitive regulation of learning.

Chart no. 1. Opinions of teachers and students on learning strategies
We observe in these behaviors current educational practices that are present at a frequency quite large in the teachers’ repertoire. The teachers’ awareness of the formative roles assigned to these practices in the direction of transferring towards students of responsibility for learning control, would be likely to increase the frequency of these behaviors and to optimize their formative exploitation. We obtained slightly below average for reflecting behaviors on students' learning strategies to achieve goals (48.9%) and for making a list of learning strategies that they can use when students solve learning tasks (46.2%).

At the level of students and teachers, assessment relating to the use the self-regulated learning strategies was possible based on comparative analysis of the response data to learning strategies scale in both questionnaires. (Chart no. 1) Thus, we selected from this scale only the agreement and strong agreement regarding the learning strategies used by students in the self-regulation of their own learning. A histogram representation of the subjects’ responses eloquently illustrates a situation almost reversed regarding teachers' responses compared with those of students. Thus, the high frequency responses given by students had in the case of teachers much lower frequencies on most items. Lower frequencies in the use of learning strategies obtained from both teachers and pupils responses are recorded at listing the strategies when students work on task (teachers - 11.83%, students - 38.39%), reflecting on learning strategies (teachers - 21.51%, students - 48.21%), reviewing versions of student work (teachers - 26.88%, students - 63.04%) and monitoring progress (teachers - 27.96%, students - 61.07%). It is interesting to observe the scoring by both subjects of similar frequencies for using feedback from teachers, using feedback from peers, attribution of success to their own efforts and work well with other students, which shows the unanimous recognition of the importance of self-evaluation, causal attribution of results, teamwork in future learning regulation.

5. Discussions

The teachers’ (who teach in technical high schools and colleges) feedback analysis reveals that some students lack awareness and regulation metacognitive skills, they are difficulties in setting their own learning goals, in identifying, modifying and adapting learning strategies in monitoring their progress, they have limited reflective capacities on the strategies, all of which generate learning difficulties in one or more disciplines. The teachers’ concern for improving the students’ learning difficulties by stimulating metacognition and by activating metacognitive regulation of learning requires the necessity of planning certain intervention programs in order to develop students' responsibility for their own learning, to determine students to adopt an active role in the learning process, to stimulate processing in-depth of information and self-reflective capacities and abilities to make optimal decisions regarding the efficient learning strategies. Strategic training should integrate the information about how to use some strategies, in which conditions these strategies are most effective and, also, how the benefits of their use are illustrated. Beyond the training of several types of strategies, students should acquire knowledge about how, when, why and where to apply these learning strategies. At high school these interventions should build on strategic repertoire that students have already acquired so far.

Regarding the views of 11th grade students we found significant differences from those of teachers in terms of planning, monitoring, evaluation of learning, meaning favorable assessment of transferable skills involved in performing autonomously of learning activities. Students who prove self-regulation capabilities use a variety of learning strategies, they have responsibility for their own learning by identifying, implementing and monitoring the strategies that help them in learning. However, there are students whose academic or social difficulties may occur due to problems in self-regulation of strategic behavior. Comparable differences in responses between teachers and 11th grade students leads us to consider that when students were self-evaluated on self-regulated learning components, they overestimated abilities as a self-protective factor in order to compensate for their learning difficulties and to diminish the effects of school failure in previous years. Students with learning difficulties have repeatedly experienced by definition the school failure. They think they can not learn, do not
want to be engaged in difficult tasks, use fewer learning strategies and attribute success to luck rather than their own efforts. In addition, the results of this category of students highlighted in the literature indicate that students with learning difficulties assessed themselves as being weaker on self-regulated learning components compared to peers who don’t have these difficulties, in the case of comparable classifications between students with and without learning difficulties. Characteristics of people with a high level of self-regulation are similar to those of students with high performance, as opposed to those with low performance or learning difficulties, showing a deficit in their use. With an appropriate instruction on these dimensions, every student can improve the degree of learning control and performance. So, many difficulties encountered especially by low-performing students can be eliminated.

The obvious conclusion from the analysis of responses to this scale of TLSQ provided by teachers from technical high schools/colleges is that although a number of practices with potential for empowering students in the sense of metacognitive self-regulation of their own learning is in the teacher’s repertoire, frequency of their use is average and above average. This supports the need for explicit involvement of teachers to explore in more depth the students’ metacognitive development. The role of teachers in helping students to develop learning to learn competence seems to be creating an appropriate learning environment that integrates and explore students' learning experiences acquired both in the formal, non-formal and informal environment.

6. Conclusions

The reduced spontaneity seeking optimal solutions to improve the skills of learning activity, poor awareness of their importance and necessity are issues on which the pedagogical intervention can focus in order to provide instruments to students in need and to create prerequisites for success at school. Teachers can intervene on these issues by creating effective learning opportunities to stimulate students' reflective capacities, to exploit their metacognitive strategies through explicit teaching in various particular contexts and through supporting their application, interiorization and transfer to learners, decreasing considerably negative effects of difficulties in the school field.

A secure learning environment in terms of free expression, a stimulating and interactive environment, where students feel encouraged represents a niche as regards the proper development of their formative influence.

References


