
The relationship of learning styles, learning behaviour and learning outcomes at the romanian students

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Abstract

Prediction and amelioration of academic success represent an ever current issue in the field of academic learning. Finding the factors which influence academic success has strong implications on the research in the psychology of learning field but also on educational policies and implicitly on the students’ learning strategies. The present study proposes to analyze the relation type established among the students’ learning style, learning behavior and academic performance in their theoretical and practical activities. The results of the study indicate significant differences as regards the learning style and the learning behavior, according to the age, experience and academic performance type.

Keywords: learning, learning style, learning behavior, learning outcomes, students.

1. Introduction

The issue of academic success with prevention of academic failure is one of the educational policy issues at national and European level. The preparation of some competitive specialists in the labor market becomes a priority not only European but also international. Extensive studies devoted to the subject (Astin, 1993; Tinto, 1993; Pascarella & Terenzini, 1991) draw attention to the increasing university abandonment and academic low-achievement. The concern from specialists on the prediction of academic success is due to the fact that this issue is

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an indicator of academic quality, and also from the need to determine the factors involved in obtaining the high academic success in order to intervene to its potentiation. Knowledge of the factors influencing academic performance shows strong implications in academic learning in student performance and success.

It is known that cognitive skills are a strong predictor of academic success (Gagne, Pears, 2001; Farsides, Woodfield, 2003; Walberg, 1984). However, with nonintellectual factors (personality factors, motivational, psychosocial, etc.) learning style influences academic achievement of students. Preference for a particular approach to learning tasks, along with strategies for solving them enabled circumscribe the learning style of each student.

This study aims to analyze the relationship between learning style, learning behavior and academic achievement of students in the Romanian academic environment.

2. Theoretical Background

2.1. Learning and academic performance

Academic learning is a type of learning that has superior quality features such as autonomy, intrinsic motivation, self-control, self-direction and self-regulation of the activity of students (Neacșu, 2006). The specificity of this type of learning is translated into goals (Neacșu, 2006), such as "encouraging reflection; active and effective use of product knowledge through formal academic learning, but also non-formal; design expectations at a higher level, especially for practical professional skills for valuing experiences formed outside the university, for increased interdisciplinary transfer; potentiation volitional and motivational mechanisms that allow students to implement higher order capabilities in using the acquired knowledge (Bruer, 1993). Participation in learning is voluntary; adults engage in learning as a result of their own volition. (Brookfield, 1986) "It is important to involve learners in the process of setting their own direction and means of learning and evaluation as a way of facilitating their personal autonomy and self-direction" (Merriam, 1993, p. 19). This creates engaging the learner in learning while reducing production informative instructive role of the teacher.

The academic performance is an directly observable indicator of learning. Academic performance refers to the efficiency resulting from the mobilization of cognitive and emotional-volitional resources of the student when he faces with a certain work task. The performances represent the level of obtained academic results, the quantitative and qualitative changes in academic purchases. Students' learning performance can be predicted and explained with a certain degree of probability if are known the factors that influence them and the way that their effects are distributed.

Prediction students' academic performance consist of the anticipate of certain results in learning on the identification, control and conduct the effects of different factors involved. This process consists of: identifying individual factors, social and contextual learning that affect how their specific way of learning ad their outcomes; analyze the extent to which these factors are responsible for variations in student performance in learning activities; specifying the extent to which, under the control of these factors, we can make predictions about future social and academic performance.

Strictly from pedagogical perspective, academic performance results from from the application and implementation of an instructive action. The basic components of this work are the pedagogical strategy learning routing and pre-formulated educational goals. In the form of some mixed quality combinations, a performance depends functional on the application and guidance method by the teacher on interactions between strategy and educational goal. Practice shows also the interference with other factors: individual psychological particularities, individual engagement in learning, motivational its status etc.

Reported to specific academic learning, the learning style is an important predictor of academic achievement and academic success default.

The Learning style refers to the organization and control of the strategies for learning and knowledge acquisition and it’s configured by the cognitive, affective and personality particularities, of the learner (Negovan, 2010)

Learning style is appreciated as one of the most important resources to cope academia (Glenn-Cowan, 1995) and refers to: how it is approached the task of learning, the enabled learning strategies to fulfill the task, what is stable in the approach to learning tasks, what is characteristic of the individual when they learn (Negovan, 2010).

Required to operationalize the conceptual it is demanded the conceptual delimitation between learning style,
learning strategy and cognitive style. While learning style is described as characteristic cognitive, affective, and psychological behavior that serves as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment (Keefe, 1982; Sims & Sims, 1995), the learning strategy is the way to solve a particular task, and it appears to be centered on the task. It is defined as: "individual differences in intentions and motives when facing a learning situation, and the utilisation of corresponding strategies" (Diseth & Martinsen, 2003, p. 19).

There are in the literature several classifications of learning strategy, but one to which reference is most often made by Diseth & Martinsen (2003): surface learning strategy (involves intentions to memorise and reproduce the material only); deep learning strategy (involves organisation, elaboration and critical thinking); metacognitive learning strategy (students aimed towards top achievement and performance by managing, planning and organising their time and intellectual resources to reach this goal).

2.2. The experiential learning developed by Kolb

Of the many explanatory models of learning academic type present in the literature (Entwistle, 1988; Ramsden, 1992; Duff, Boyle, Ferguson & Dunleavy, Kolb, 1984) in our study we report the experiential learning model - Kolb (1984) because it seems more suitable for specific learning activity of students in the academic program - Preschool and primary pedagogy. The model proposed by Kolb conceptualize learning as an interactive and reflective activity that involves the construction of competent, attitudes and skills.

Based on Piaget's theory, Rogers and Jung, Kolb starts in his theoretical model construction from the assumption that learning is an ongoing process in which knowledge and skills are shaped and developed by the nature of experiences in wich the person is involved. Learning is a cyclical process involving the four stages: concrete (direct interaction with the environment), reflective observation (examination and analysis of lived experience), abstract conceptualization (individual forms his own ideas and integrate the new knowledge in the context of previously acquired) and experimentation active (requires decisions on ways of action and concrete problem solving and knowledge transfer is done). Learning thus stems from their living experience which combines reflection and active experimentation at different levels, using previously acquired purchases.

According to Kolb (1999 Negovan 2010), learning style is not a stable trait, but a preference for learning preference that is slowly changing from one situation to another. Compared to the model described, Wolf & Kolb (1984) describe four learning styles of students according to preference for a particular approach to tasks and active strategies to resolve them. The first dimension describes the perception of thinking (concrete or abstract) and the second dimension describes information processing (active or reflective). Based on these two dimensions are inventoried learning styles (Kolb, 1999):

a. divergent style revolves around creativity and originality. People who prefer this style of learning are reflective, concrete, effective, concrete in experience and reflective observation; are imaginative, aware of meanings and values things, are oriented on feelings and interpersonal relationships, preferring social actions. Most often tend to overly analyze problems, act slowly and sometimes omit opportunities;

b. convergent style it's actional and rational. This persons are active, abstract, effective in problem solving, in making decisions, in seeking information practical utility; always focuses on searching and solving problems, and not focus on interpersonal relationships. Sometimes tend to take hasty decisions without testing them in advance;

c. assimilator style is the observation and rational style. People oriented on such a style are effective in understanding a variety of information and placing them in a logical and concise form; for these people is more important to have an idea or theory logically coherent than a practical value. The idealism characteristic of this style often becomes a disadvantage and an obstacle to solving practical situations;

d. accommodate style is the style of those who prefer to learn emotional and actional. People who adopt this style are tangible assets that learn from practical experiences. They tend to act on spontaneous emotions and less on logical analysis. They prefer to do the practical things, to get involved in as many experiences as possible, to adapt to variable circumstances, solving problematic situations mainly by trial and error method. When deciding rely more on people than on technical analysis of the task. The difficulties they are facing are especially by not develop practical plans, waste their time with petty and sometimes become impatient and pressure.

Learning styles have been found to have a positive relationship with academic performance and overall success.
in higher education (Graham, Garton, and Gowdy, 2001; Garton, Spain, Lamberson, and Spiers 1999).

3. Study aims and hypotheses

Study objectives relate to analyze the type of relationship that is established between learning style, learning behavior and academic performance of students, both theoretical work and practical activities.

The main questions of the survey refer to:
1. What is the distribution of learning style scores or learning strategies of students in pedagogical education and preschool during the three years?
2. Are there differences between learning styles and achievement in theoretical and practical activities activities?
3. Is there a relationship between learning strategy and learning style from students?

4. Method

4.1. Participants

Participants in the study were 55 female students, aged between 19 and 49 years, students in the program of study Pedagogy education and preschool. The group of subjects was divided into two categories: 43 are participants who doesn’t have professional experience and 12 students with professional experience in pedagogical education and preschool (age 5-30 years), students in the first year - 15 students, year II – 20, third year students - 25.

4.2. Measures

4.2.1. Kolb Learning Styles (Honey & Mumford, 2006): was used to measure individuals’ learning styles in both educational settings and everyday life settings. Based on participants’ rank ordered responses to twelve items, they are categorized as having one predominant learning style out of the four that are possible in the Kolb model.

4.2.2. Learning Strategies Survey (Young, 2005): Learning strategies were measured using a self-regulated learning strategies index developed by Young. The instrument shows 17 items that measure the surface (rehearsal), deep (organization, elaboration, critical thinking) and metacognitive (planning, monitoring, regulating) learning strategies. All items scored on a 5 point scale ranging from 1 – never to 5 – always.

4.2.3. Academic performance was measured from both theoretical and practical. At a theoretical level student performance was measured using the average grades in the subjects of the second semester of the academic year 2013-2014.

Theoretically the academic performance measurement using the average grades in the subjects covered is a common measure, often used (Soh, 2011);

Students work on a practical level was measured by reference to the following criteria: lesson preparation (scientific and methodical documentation); formulating the operational objectives of teaching activity (correlation between objectives, contents, means and methods of education, organizational forms of learning, assessment methods); achieving the scientific content of the lesson (ensuring scientific rigor and timeliness of knowledge; accessibility of content) methodological aspects of the lesson (lesson synchronization with the pace of deployment rates of student learning), the strategy elaboration based on the objectives, contents, the specificities of the different categories of classmates; appropriate use of assessment forms, methods and techniques of traditional and alternative assessment);the behavior of the student in teaching practice (teaching style suitability to different learning situations and organization; classroom management concerns for emotional climate).

5. Results and discussions

The gathered data by applying statistical tools have undergone specific analysis and have obtained the following results:
- descriptive analysis of data collected reveals that in terms of preferred learning style of the students it has the following distribution: divergent style 38.2%, 12.7% convergent style, assimilator style 32.7% and accommodate
style 16.4%. Regarding the distribution of subjects according to the teaching experience shows that there are statistical differences (t test) according to the learning style variable (t = 2.14, df = 53, p≤0.05). Regarding the distribution of scores according to year of study are significant differences in terms of preferred learning style (ANOVA, F (2) = 6.61, p = 0.000). Post hoc analysis reveals that our group finds significant differences in terms of learning style between year 1 and 2 (t = 1.13, p = 0.000) and between 2nd and 3rd year (t = 1.00, p = 0.000).

- in terms of learning strategy, descriptive analysis reveals the following distribution: 23.6% use surface learning strategies, 43.6% use deep strategy and 32.7% use metacognitive strategy. There are no significant differences in terms of type of learning strategies and professional experience (t = 1.27, p = 0.09), but there are significant differences between study participants according to year of study (ANOVA, F (2) = 5.08, p = 0.000). Post hoc intergroup analysis reveals that there are differences between year 1 and year 2 or year 3 of study (t = 0.65, p = 0.027, respectively t = 0.70, p = 0.015) and between year 2 and year 3 of study there are no significant differences (t= 0.05, p = 1.00).

- the analysis of learning styles and performance at theoretical activities or practical activities by ANOVA method found significant relationships F (3) = 5.19, p = 0.000, respectively F (3) = 7.60, p = 0.000.

- in terms of the relationship between learning style and learning strategy results are presented in Table. 1 were we find associations between variables, but the intensity is slightly moderate to low...

Table 1. Correlation Person matrix among the variables: learning style and strategy learning

<table>
<thead>
<tr>
<th>Variables</th>
<th>surface learning strategy</th>
<th>deep learning strategy</th>
<th>metacognitive learning strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. diverging</td>
<td>.457**</td>
<td>-.222*</td>
<td>-.448*</td>
</tr>
<tr>
<td>2. converging</td>
<td>.555**</td>
<td>-.125*</td>
<td>-.325*</td>
</tr>
<tr>
<td>3. assimilating</td>
<td>-.253*</td>
<td>.624**</td>
<td>.622**</td>
</tr>
<tr>
<td>4. accommodating</td>
<td>-.274*</td>
<td>.654**</td>
<td>.478*</td>
</tr>
</tbody>
</table>

* p< .05, ** p< .01, N = 55

The pilot study reveals some interesting data:
- to the learning styles level we identify all the styles described by Kolb ; we found significant associations between learning style and learning strategies; future studies can be developed to determine the predictive relationship between learning style and learning strategy;
- first year students use especially surface learning strategies and have the preference for assimilation and accommodation style, but those who have teaching experience use especially metacognitive strategies and the style that prevails is the divergent one; III year students prefer divergent and accommodation style and the learning strategies use the deep learning strategy. At the students with work experience the use of metacognitive learning strategies is associated with divergent style.
- in terms of the relationship between learning style and academic performance results are differentiated so metacognitive performance is associated with theoretical and practical experience at students with work experience and deep learning strategy is associated with high performance at the theoretical activities to students who do not have professional experience.

6. Conclusions

This present pilot study confirms that at the students level we can identify different learning styles: the divergent style, convergent style, assimilation style and accommodation style, and, also, the relationship that is established between learning style, learning behavior and academic performance of the students. It reveals differences between the learning behavior and the type of learning activities in which the student is involved (theoretical or practical).

The study limits mainly refers to the number of subjects, to the low validity of the measuring instruments. Last but not least we believe that academic performance is influenced also by other factors like- personality factors, cognitive factors, motivational- emotional factors which were not considered in this study.

We believe that providing an explanation of the factors influencing academic performance - learning style and learning behavior, this study represents a milestone for education practitioners to design appropriate instructional
strategies that meet students’ needs and preferences. By identifying learning styles in the educational context, and behaviors in their learning, teachers use instructional strategies differentiation in relation to the type of learning (mainly theoretical and/or practical). Flexibility in training leads to academic success, to the formation of specific skills for the study program that students follow, and having as a final goal a good insertion in the labor market.

References

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