"BABES - BOLYAI" UNIVERSITY
THE FACULTY OF PSYCHOLOGY AND EDUCATIONAL SCIENCES

Daniela MARA (ROMAN)

LEARNING STYLES AT STUDENTS

- Thesis Summary-

Scientific Coordinator:
Professor Ph.D. NICOLAE JURCĂU

Cluj-Napoca

2010

INTRODUCTION..... 4

CHAPTER I
PERSPECTIVES ON SCHOOL LEARNING..... 8
1.1. The concept of learning..... 8
1.2. A brief history of learning approaches..... 18
1.2.1. The behaviorist perspective..... 19
1.2.2. The cognitive perspective..... 22
1.2.3. The constructivist perspective..... 30

CHAPTER II

2. THE LEARNING STYLE
2.1. Conceptual delimitations..... 36
2.2 Models of learning styles..... 43
2.2.1 The Dunn and Dunn model..... 46
2.2.2 David Kolb's model..... 47
2.2.3 Myers-Briggs model..... 49
2.2.4 Honey and Mumford's model 51
2.2.5 Bernice McCarthy model..... 52
2.2.6. The Felder and Silverman's model..... 54
2.2.7. Biggs's model 55
2.2.8. The Vermunt's learning styles..... 58
2.3. Final remarks on the patterns of learning strategies and styles 65

CHAPTER III
PARADIGM OF STUDENT-CENTERED EDUCATION /LEARNING
3.1. Conceptual specification..... 68
3.2. Specifics ÎECS paradigm in academic environment..... 70
3.2.1 The dimensions of student-centered education..... 72
3.2.1.1 Setting quality standards..... 73
3.2.2.2 Transparency of the instructive-formative learning process..... 78
3.2.2.3 The design of teaching based on students learning needs..... 89
3.2.2.4 The involvement in active and interactive teaching strategies..... 79
3.2.2.5 Encouraging autonomy in learning..... 80
3.2.2.6 Using a variety of methods and self-assessment..... 83
3.2.2.7 Reconsideration of teacher roles..... 87
3.3 Limitations of student-centered education paradigm..... 90
3.4. Principles of psychological student-centered learning..... 92

CHAPTER IV
SCALES VALIDATION STUDIES
4.1. **Adapting the Learning Styles Inventory developed by Vermunt** (1996-1998)..... 97
4.1.1 Theoretical aspects..... 97
4.1.2 The description of the ILS scales..... 101
4.1.3 . Research objectives..... 104
4.1.4. Research methodology..... 105
4.1.4.1 Participants..... 105
4.1.4.2 Measures..... 105
4.1.4.3. Procedure..... 106

4.1.5. Results and interpretation..... 106
4.1.6. Discussions and limitations..... 122

4.2. Adapting the Questionnaire for Studying the Learning Process developed by Biggs, Kember and Leung (2001)
4.2.1 Theoretical aspects..... 125
4.2.2 Description scales..... 126
4.2.3 Research objectives..... 126
4.2.4 Research methodology..... 127
4.2.4.1 Participants..... 127
4.2.4.2 Measures..... 127
4.2.4.3 Procedure 127
4.2.5. Results and interpretation..... 127
4.2.6 Conclusions and limitations..... 132

4.3 Adapting the The Inventory of Teaching Approaches developed by Trigwell and Prosser, 2004
4.3.1Theoretical aspects..... 134
4.3.2 Description of scales..... 136
4.3.3 Research objectives..... 137
4.3.4. Research methodology..... 138
4.3.4.1 Participants..... 138
4.3.4.2 Measures..... 138
4.3.4.3 Procedure..... 138
4.3.5 Results and Interpretation..... 138
4.3.6. Conclusions and limitations..... 144

CHAPTER V
STABILITY AND VARIABILITY IN THE USE OF STRATEGIES AND STYLES IN DIFFERENT CONTEXTS
5.1 Theoretical aspects……..... 146
Study1 152
5.1.1. Objectives 152
5.1.2 Hypotheses and research design..... 152
5.1.3 Method..... 152
5.1.3.1Participants..... 152
5.1.3.2 Measures..... 153
5.1.3.3 Procedure..... 154
5.1.4 Results and interpretation 154
5.1.5 Conclusions and limitations..... 177
Studiul 2
. 5.2.1 Objectives and research hypotheses..... 182
5.2.2 Method..... 182
5.2.2.1 Participants..... 182
5.2.2.2 Measures..... 183
5.2.2.3.Procedure..... 184
5.2.3 Results and interpretation..... 184
5.2.4 Conclusions and discussions 187

CHAPTER VI
A LONGITUDINAL APPROACH OF THE STRATEGIES AND LEARNING STYLES AT STUDENTS

6.1 Theoretical aspects..... 196
6.2 Purpose and objectives..... 202
6.3. The research hypothesis..... 202
6.4 Method..... 202
6.4.1 Participants..... 203
6.4.2 Measures..... 203
6.4.3 Procedure..... 203
6.5 Results and interpretation..... 204
6.6 Conclusions and discussions..... 224

CHAPTER VII
EFFECTIVENESS OF A TRAINING PROGRAM TO ENHANCE LEARNING AT STUDENTS
7.1Theoretical aspects..... 234
7.2 Objectives..... 237
7.3 Research hypotheses..... 237
7.4 Method..... 238
7.4.1 Participants..... 238
7.4.2 Measures..... 238
7.4.3 Procedure..... 238
7.5. Results and interpretation..... 242
7.6 Conclusions and discussions..... 288

CHAPTER VIII
FINAL CONSIDERATIONS..... 298

BIBLIOGRAPHY..... 303

APPENDIX..... 311

Keywords: *learning strategies and styles, approaches to learning, approaches to teaching, education and student-centered education, stability and variability in the use of learning strategies, longitudinal study, the training program.*

INTRODUCTION

This paper addresses the issue of learning styles in the academic environment and advocates the support of student-centered education program to optimize learning among students. Education / Student-centered education (ÎECS) is probably one of the most current issues in the Romanian university discourse. Although this theme is not new, the inclusion by ARACIS as an indicator of quality in the teaching practice prompted a re-approach and its re-conceptualization in terms of global trends in education, the demands of society is in constant change. *Why is ÎECS needed?*

We live in an age where knowledge becomes obsolete more quickly, the more quickly information becomes accessible through computer networks, the more the need to increase lifelong learning and teaching models based on knowledge transmission and storage lose their functionality. Within mainstream education system rigid and often ineffective, students acquire some knowledge / skills just because they are being tested and not because these would be some intrinsic value as educational purposes. However, increasing society demands for new delivery models, which tend to develop students' ability to update their knowledge whenever necessary. Realizing these issues more and more specialists in the field found themselves faced with the urgent need to provide effective and viable alternative. Student-oriented teaching models, focusing on the processes of construction and use of information seem appropriate to meet these new requirements. In particular integrative theories of learning and teaching provide promising opportunities to develop skills, to the the learner in order to learn the processes for self-regulation.

The core of this paper is the concept of learning style, a concept understood as an umbrella, controlling the cognitive and affective processing of subject matter, setting meta-cognitive learning, learning conceptions and orientations to learning are closely linked. In various studies, Vermunt (1998) indicated four styles or forms of learning: learning untargeted, directed towards reproduction, directed towards meaningful and directed towards the application of knowledge. Rigorous studies conducted by Vermunt et al. (1999-2004) over several years and on a considerable number and variety of students indicated that learning styles and strategies are sensitive to contextual and educational influences and can be understood in the context of the development hypothesis (Vermunt and Vermetten, 2004).

Based on research in this area, the present analysis is intended at a theoretical level of the methodological and empirical concepts of strategy and learning style in academia. More specifically, the implications, which differentiation strategies and learning styles, guided by observation of the individual needs of students have in the educational practice in terms of ÎECS.

CHAPTER I. PERSPECTIVES OF LEARNING IN SCHOOL

Learning has been and remains a central issue for psychology and psychological research standing, because of the complexity and importance of this process for the evolution of society. The interest which accrued among theorists of various guidelines was huge, as learning issues have been addressed in time by the current major theoretical schools of psychology, being linked to the entire existence of human beings and considered one of the most significant individual and social processes and phenomena.

Viewed broadly as a universal phenomenon in the life-like organisms is the process of acquiring learning experience with the purposeful behavior of individual adaptation (Bonchiş, 2004). Thus, learning occurs as a multidimensional plurilevel phenomenon and with its own structures, which exerts a strong influence on the development and standing inserts on adaptive behavior. The literature abounds with attempts to define learning. The complexity of high interest to the theme entailed a variety of approaches and definitions and conflicting views of learning exegetes. It is quite difficult to formulate a universally accepted definition of learning. Deciphering learning and understanding the role of learning in human life- Golu mentioned (2001) - are the operations that depend to a large extent on the specific psychological theories of learning "variables introduced in the experiment and how to experience theoretical concepts basic positions of the schools which was the interpretation of data "(p. 25).

At the human level, learning reveals their never-ending, informative and formative meanings. Thus, the term can be understood as an attitude of both the knowledge and attitudes towards life, placing emphasis on human initiative, the purpose of acquiring new skills to better adapt to environmental changes that occur. At this level, the concept gets a psycho-pedagogical connotation and circumscribes an activity that acquires knowledge and builds intellectual skills (Jurcău, 2000). In addition, in humans this way is fundamentally new storage and transmission of experience, which is the social way. Thus, we can say that learning through content, leads to a change in behavior and conditioned by personal experience that includes, on the one hand, a purely cognitive side totaling knowledge, the development of cognitive functions, the capacity of understanding and assimilation of rules, and on the other hand which practice learning refers to schemes operated, the abilities and skills training to acquire social behavior patterns, etc. (Lowe, 1978, apud Bonchiş, 2004).

There are a number of explanatory theories of learning, whose data and conclusions are taken, embedded in teaching, type of stimulus-response theory to theories humanities, social, cognitive and constructivist learning. Mayers (1996) points out that educational psychology has made so far with three metaphors or paradigms: associative metaphor, the metaphor of information processing and constructivist metaphor. In the present study are recovered the last two approaches, in particular the constructivist (Jonassen, 1991). Paradigm of learning as a knowledge building was designed, from 80-90 years, as a result of cognitivist desire to study cognition in the context of real existence. This is due to the fact that a broader set of learning mechanisms, this paradigm, select and reiterates a theoretical framework consistent ideas or principles that have proved their usefulness in education many decades ago. Among these we remind the active teaching student-centered teaching. In other words, the constructivist perspective has demonstrated practical value in promoting new teaching methods (student-centered investigation, anchored learning, cooperative learning, etc.). A huge advantage of this perspective in teaching is the valorization of information processing technology, seen as a perspective that complements and furthers the idea of building knowledge through internal resources of the individual. Radical constructivism constructivist theory

by theorists, join this principle a conceptual reformulation of learning, defining learning as an adaptive process of knowledge construction. Thus, constructivists posit the idea that knowledge is always a construction and reconstruction. In view of current constructivist (dialectical constructivism, cognitive constructivism and social constructivism, Woolfolk, 1998), emphasis is placed on the importance of teaching and student learning. As such, this paradigm encourages taking control of the student during learning, encourages self-monitoring process of building knowledge and anchoring experience authentic learning situations, real life. Constructivist perspective is meant to be integrative learning both within and in the evaluation. One of the central assumptions of this paradigm posits contextual nature of cognition and knowledge construction. Develop conceptual maps play the role of learning strategies that facilitate the construction of meanings of the individual by understanding the link between the two sides, theoretical and practical. In other words, truth is replaced by "utility" or "sustainability."

In this view, differentiation is seen as a process of identifying and valuing individual differences, adapting to different learning styles of students and to encourage lifelong learning.

CHAPTER II LEARNING STYLE

In the past twenty years, the study on learning styles, both theoretical and applied, simultaneously sparked a strong interest, but also a whole controversy of opinion among both academic experts and among those who learn independently. Much of the research and practice went forward "in the face of significant difficulties in the confusion of definitions surrounding the conceptualization disturbing cognitive styles and learning styles (Coffield et.al, 2004). The concept of "style" is introduced in psychology by Adler (apud Kramar, 2001) in the phrase "life style", but the question of style becomes a concern, especially in current scientific psychology in the second half of the twentieth century. Currently, the literature abounds with theoretical models and experimental studies designed to lead to a better understanding of how strategies can be deciphered and learning styles. The large number of models and theories is justified, since the theoretical premises that generate their authors are different. Moreover, a growing number of psychologists have embraced the idea that learning styles have a substantial cognitive component, a personal side, and a contextual one. The premise from which they started is that the explanation of the student's choice of a particular learning strategy is at the intersection of two areas: the context and individual peculiarities. A very important contribution to progress in knowledge of learning styles have been brought by classified studies in cognitive and constructivist paradigms. They have allowed the development of a highly prolific line of research that led to a better understanding of this concept, which led to the development and implementation of effective tools and techniques of intellectual work. The two theoretical approaches trying to explain the cognitive learning process and to propose methods of knowledge and skills training / skills. The cognitive paradigm researchers are trying to extract regularities of functioning of various components of cognitive-behavioral processes, generally valid for all individuals, regardless of context. On the other hand, constructivists agree that the subjective interpretation of the requirements of the task, quality content and personal significance of context are factors that influence the quality of cognitive and meta-cognitive strategies involved in learning.

The diversification of research methodology and the growing accumulation of empirical data were the basis for formulating meta-analytical studies on this issue. A large study, a critical analysis of learning styles is performed by Coffield, Moseley, Hall and Ecclestone (2004, *"Should We Be Using Learning Styles?)* Starting from theoretical contributions to the field, the authors

conducted a review of the most influential theoretical models of learning styles and instruments with an emphasis on supporting the validity and practical application.

The models considered by the authors as relevant models have been classified into five large "family", providing a clear image on the main approaches to learning styles.

Research on learning styles is prolific with studies conducted by Dutch psychologist Vermunt. The author has conducted the first studies in this area in the mid 80s. Vermunt (1998) proposed a model of learning styles, based on modern views; the constructivist model explicitly sought to provide a more comprehensive and integrated learning. In his view, the characteristics of the learning environment and learning experiences influence the development of student learning styles. They interact with environmental conditions which determine the selection of different approaches to learning by the individual. These styles interact with stable environmental conditions leading to selection of specific approaches to individual learning (Entwistle, 2000). As a result, approaches to learning can be considered a bridge between learning environment and learning styles.

The problem of learning styles are turning less on appearance, which is carried out and insist on how they learn at school. This approach, to investigate on how students learn and seek the appropriate means of learning skills is needed for effective training and is absolutely necessary in the light of current trends in education.

2.3 Final remarks on models of learning styles

As Coffield, Moseley, Hall and Ecclestone (2004) showed, none of the models considered is perfect or complete, each of them managed to capture and shape the issues and less satisfactorily some others. Each theory has its explanatory value, strengths and weaknesses, the images offered as complementary. In order to provide explanations for learning styles, which are known to be the result of several factors, should rather specify how the constellation of relevant factors rather than to calculate the percentage due to each factor individually, that however pales before the assigned interaction of these factors.

Among experts there is a broad consensus concerning the association of self-regulation learning, with the power of individuals to learn independently and efficiently with the maturity and efficiency attributes of cognitive, motivational, affective and volitional, strategies and learning style.

Although there are substantial differences between the claims, methods and results of different studies, all have in common a dichotomy between deep and superficial approach to learning. The distinction between the two approaches is obvious if we consider that each approach has a specific type of motivation and a type of processing strategy.

An important step in this area is to introduce guidelines and learning concepts in the definition of learning style. Thus, learning style is to organize and control strategies for learning and knowledge acquisition, which are influenced by conceptions of student learning. As a result, learning styles are flexible structures and not immutable.

Many theories of learning styles manage each of them only partially explain this process, but no theory has provided a system invulnerable to criticism. Building a learning theory seems totally satisfactory but that is still an issue for the future.

Coffield, Moseley, Hall and Ecclestone (2004) considers that the issue of learning styles, a simple task at first glance, is actually a complex and varied. At the same time, the authors stress the importance of continuing research on learning styles and support the theory formulated by Vermunt

(1998). This model enjoys a solid empirical support, is an integrative theory of learning responsible for the current prospects and reserves can be exploited without the student-centered education.

CHAPTER III. THE PARADIGM OF STUDENT-CENTERED EDUCATION

Global political revival of learning, widening towards combining learning content influences with intentional socialization training activities, set up new models of learning. Learning is increasingly seen as knowledge construction process in accordance with existing structures in the external world. In this respect, Jurcău (2002) indicated very significant "learning not to learn, learn to build, to showcase our skills and create all the options and plans available to us" (p.47).

With approaching twenty-first century, universities began to take a serious look the focus of their research. Researches in this area have found unlikely the design of better educational realities in the absence of a suitable theoretical approach. These shortcomings stem so far, the treatment is exclusively only one of the key dimensions of the process, either from excessive focusing on the work of teachers, ignoring other aspects. This approach is part of the overall restructuring process of the educational process, restructuring justified by the desire to increase its quality. An effective education, adapted to focus on contemporary issues in a way to study integrative model of instruction and moreover, requires the imposition of a new training concept of the place and role in the economy overall student learning process

The steps taken in this respect a wide range of expressions known, varying from partial update of the classic elements belonging views and proposals of their total replacement. Thus, although we can not speak of a unit of opinion on the restructuring of the traditional system can still see the manifestation of a certain convergence of ideas in this regard. Learning is increasingly seen as a process of knowledge construction, self-regulating, and teaching and assessment models to replace the self-evaluation approaches / perspectives, taking the process of learning as a starting point. In this regard, theoretical arguments and experimental insights have been developed with ÎECS. Bernat and Chiș (2003) identify the following elements of student-centered teaching: setting quality standards of teaching, learning and assessment, instruction and formative process transparency, the design of teaching based on students' learning needs, training in teaching active and interactive strategies, encouraging autonomy in learning, using a variety of methods and self-assessment, teacher roles reconsideration. Education aims at the formation of individuals with high intellectual skills, able to adapt knowledge to different situations in the face of stimuli with a greater degree of ambiguity and selectors not prefabricated passive responses. The effective adaptation to the situation, the use of students' knowledge relative to the whole complex of factors that characterizes a particular context, is possible by designing the main dimensions of the educational process: teaching, learning, self-evaluation based on quality standards.

Unlike traditional techniques, commonly characterized by the use of transmission as the main form of instruction, the reproduction as the main form of learning and teaching evaluation after massive information units, is now accredited more than the idea of conceptual change, building self-regulated learning, continuous assessment of student skills.

The connection to the teaching process, the objectives and the evolution, allowing, on the one hand, the teacher to effectively use information obtained in this way in designing the next steps of teaching, and on the other hand facilitates the student's approach self-assessing invoice. In this paper issues strategies and learning styles are investigated from the perspective of this paradigm.

CHAPTER IV. SCALES VALIDATION STUDIES

In this chapter we present three validation studies on the Romanian population of the following instruments: ***The Inventory of Learning*** **Styles (**ILS, Vermunt 1994-1998), ***Study Process Questionnaire Revised*** (R-SPQ-Biggs, Kember and Leung, 2001), ***Aproaches to Teaching Inventory*** (ATI, Trigwell and Prosser, 2004).

For the validation study of the ILS, a short five step response scale was used, for pragmatic reasons for its future use. The test measures strategies and learning styles of students. To test the model proposed by Vermunt learning styles, we used exploratory factor analysis (EFA).

Parallel analysis, also known as parallel analysis of Humphrey-Ilgen is recommended as the best method to assess the actual number of factors (Velicer, Eaton, and Fava, 2000: 67; Lance, Butts, and Michels, 2006, apud Garson, http://faculty.chass.ncsu.edu/garson/pa765/statnote.htm accessed).

So, the solution offered is the model of four latent factors corresponding styles "deep processing", "processing area", "concrete processing" and "Learning out of focus." Extraction of four factors is observed, giving values of eigenvectors. In order to examine the reliability and validity of items that are used in four areas of ILS on the current sample (N = 514) were calculated internal consistency coefficients for the ILS scales. To examine the degree of loading of items on the four areas, following the model proposed by Vermunt, separate tests were conducted at the item for each scale of the four fields. It was made a standard in five classes on the Romanian population normalized for ILS.

A similar approach was taken for validating the following two scales included in the study: ***Study Process Questionnaire Revised*** (R-SPQ- Biggs, Kember and Leung, 2001) and ***Aproaches to Teaching Inventory*** (ATI, Trigwell and Prosser, 2004).

The contributions that we bring to these studies are numerous and relevant. First we use the following scales ILS studies to investigate how students have stability or variability in the use of learning strategies and styles in different contexts: specific academic courses or different specializations. Another aspect of harnessed in this study refers to the formulation of a longitudinal perspective on learning strategies and styles during the years of university studies. Finally, the instrument is valued as a starting point in formulating an opinion on the efficiency of a training program in terms of academic learning, in terms of ÎECS.

On the other hand, the three instruments can enter the repertoire of any teacher who wants to better know their students. They allow the teacher to identify weaknesses and strengths (at the cognitive, meta-cognitive and motivational) of the students and try to modify ineffective strategies through the design and organization of the entire teaching approach. In this way, the results become topics for discussion between teacher and student in which both sides benefit - the student will learn how to develop study skills, the teacher will try to reflect and rethink their repertoire of practices promote skills training and skills, not just transferring knowledge.

CHAPTER V. STABILITY AND VARIABILITY IN THE USE OF STRATEGIES AND LEARNING STYLES IN DIFFERENT CONTEXTS

The perspective that is taken into account when we evaluate the learning processes varies from very specific contexts (like reading a text) to very general contexts (general ways of student learning). Three separate studies of specific levels of context were discussed: the department / academic specialization, specific learning tasks and academic courses (Vermetten, Vermunt and Lodewijks, 1999). The present study investigated two approaches: contextual specialization and specific university courses.

Study 1

Research Objectives

The study aims to identify strategies and learning styles of students and to highlight differences in the levels of these two variables, from the perspective of five different specializations. The primary objective of this study is to determine the degree of variability in the use of learning strategies by students from different specializations. The starting point is the results of previous research which raised the question of stability versus instability and proposed strategies and learning styles. A second objective was to determine whether the strategies and learning styles are activated differently between a number of university academic programs.

Hypothesis and design

There are significant differences between different specializations in terms of the degree to which strategies and learning styles are used.

The study is the comparison type (cvasiexperimental), the independent variable is the type classifying, targeted specialties are: Psychology, Biology, Geography, Pedagogy of Primary and Preschool Education (PPPE) and Economics. Strategies and learning styles were operationalized by scores on subscales and scales of ILS.

Method

Participants

The experiment involved a total of 479 students (447 participating women and 32 men), as follows: 211 students - Year I and II at the Faculty of Social Sciences and Human-psychology, 47 participants specializing Sciences Education, P.P.P.E. 52 students Faculty of Biology, 109 students at the Faculty of Geography and History, 60 students at the Faculty of Economics, University of Oradea.

Measures

Inventory of Learning Styles (Vermunt, 1996, 1998).

Procedure

The questionnaires were applied in the classroom, paper and pencil format. Participation was voluntary and verbal consent was required of participants. Participants were assured of confidentiality of results and the possibility to ask personal outcomes to the researcher. All students participating in the research informed their consent in accordance with the general aim of this approach.

Results and discussions

Hypothesis aimed to verify the existence of significant differences regarding the development of strategies and learning styles for students from five academic majors. The obtained results support the hypothesis for most of the strategies and learning styles. We can therefore say that the study shows that the use of individual learning strategies vary by academic departments, as well as preference in the use of learning styles. The specifics of the disciplines and skills, skills required of them, lead to differences between students of these majors.

But there are dimensions that have proved resilient in the context of specialized subjects. These include cooperative learning [F (4.474) = 1.583, p> .05], the reproduction directed to learning style F (4.474) = 1.926, p> .05] and untargeted learning style [F (4.474) = 1.074, p> .05].

How do personal and contextual factors relate to students' learning patterns? Studies show that contextual factors influence the student's orientation, either to acquire expertise in the study, or to achieve a specific performance or high grades in exams. In the contextual factors involved in teaching in academia that could explain differences obtained in this study we can mention several aspects. A first issue concerns the type of learning tasks, tasks that vary from one department to another or which are required in varying proportions depending on the departments. It is well known that theoretical and decontextualised tasks lead to getting a private performance, while the applied loads and current activities related to students are more attractive and easier to acquire expertise and guidance not only to achieve a particular performance. Another important aspect may be the time to learn a task. Thus, a time too short given learning tends to de-motivate and lead students to memorize.

Although we know little about the relationship between disciplines and aspects of teaching approaches, there are studies that have focused on differences in academic interdisciplinary (Becher, 1989, Neumann et al 2002, apud Ylänne and Lindblom, 2006). Thus, Becher (1989) identified four subjects: "purely real", "pure humanities", "real applied sciences" and "applied humanities" based on cultural and epistemological differences. According to Neumann and collaboratores (2002), knowledge "purely real" can be described as the cumulative nature. If purely realistic science students are expected to learn facts, the actual application of science is desirable for students in order to develop their skills and abilities of the application of theoretical ideas in different professional contexts. Finally, in the applied humanities, knowledge is accumulated in a reiterative process. Teaching methods are similar to those in purely humanistic disciplines. The emphasis is on personal development and broadening of intellectual horizons, as confirmed by the results of this study

Of course no relation teacher - student can be omitted from this framework in explaining the differences found. The autocratic relationship, the requirements for learning determine extrinsic motivation and a perception arguably ambivalent about their own competence and on self-efficiency, while democratic relationship, autonomy in learning and intrinsic motivation leads to a positive perception of their own learning skills). Entwistle (2000) in his studies on the influence of context on learning has shown that our approach is deeply related to what students call "good teaching" and, "Freedom in learning, while the matter "a lot" is associated with surface approach.

Furthermore, formal and informal use of reinforcements and rewards can boost student to take responsibility for their own learning and to adjust learning processes. In this respect, it is recognized that specific performance is a rewarding role in short-term motivator, while reward power has a strong motivational role in the long term. The learning achievement of self-regulation has an important role in self-efficiency expectations about task. When the student is perceived as

ineffective in learning tasks, this will cause him to avoid difficult tasks or engage less in this kind of task.

Finally, we indicate how to assess and self-assess. Various authors criticize the higher education that focus solely on assessment, neglecting aspects of teaching. The self-evaluation and assessment of teaching must be to support students and thus task performance constructed in a manner as close to reality. Orientation determines the power of formative assessments of learning motivation high, compared with the orientation towards performance.

Vermunt (2003) believes that the perception of students on teaching and assessment procedures, rather than the method itself is affecting students learning directly. All the issues mentioned could explain differences obtained in this study.

Of course, it is expected, according to the model that Vermunt (1998) proposed, that learning strategies provide less stability than the mental models and learning orientations. This was not confirmed in our study, whereas learning strategies varied in the same way the conceptions and learning orientations. The lowest level of stability was recorded for mental models of learning. Cross-sectional studies (Vermetten, Vermunt and Lodewijks, 1999) showed a similar practice as learning reported.

It was demonstrated that the use of learning strategies differ depending on the degree programs of academic study of variability. To more thoroughly investigate the learning strategies variables prescribed by the context variables, it is necessary to carry out larger studies. For example, intervention studies in which contextual variables are deliberately manipulated may provide a clearer overview of the contextual factors that influence the use of learning strategies (Vermunt 1998). The measurement in which the learning environment was produced, as perceived by students (a subjective description of the context) is also an important factor in terms of a future study on this issue.

Effects of various forms of teaching and assessment have led researchers to investigate the differences in how teachers describe their teaching methods. These results are valuable in explaining both the problems related to low levels of development strategies and learning styles and to design strategies to enhance training programs based on meaningful and constructive change in mental models. There are also differences in terms of intercultural learning. In this connection, it may be mentioned the study conducted by Petrus-Vancea, Secui and Roman (2009); significant differences are obtained in terms of learning strategies and concepts between Romanian students and students from Moldova.

Undoubtedly, this study has limitations. Number of participants could be broadened and at the same time the number of specialties included in the study could be extended. It would also be interesting to see if there are differences in the form of education: full time or part-time. Moreover, it would be to measure perceived learning environment and approaches involved in teaching and in assessment by teachers, which would lead to the hypothesis of contextual nuances.

Despite these shortcomings, the present study emerges the importance of learning environment, learning strategies adopted by students and reinforces the idea that the problem of stability versus instability strategies and learning styles is not a singular response. The next study will pursue these issues in terms of specific academic courses.

Study 2

Objectives and hypotheses

This study aims to identify the strategies of students learning psychology and highlight differences in using these strategies in terms of two specific university courses: Fundamentals of Psychology and Experimental Psychology. To this end, we pursued a study with cross design, dynamic strategies based on two university courses, studied by students of the Faculty of Social and Human Sciences, Psychology specialization.

There are significant differences in the degree to which learning strategies are used depending on the discipline concerned.

The design of the research is of unifactorial the group type. Learning strategies used in this study are operationalized through scales and subscales scores on the ILS, targeting specific courses.

Method

Participants

The cvasiexperiments were attended by 206 students - freshmen, Faculty of Social and Human Sciences, psychology, University of Oradea.

Age range of participants is between 19 and 40 years. Distribution of participants by gender is as follows: 81 female participants and 15 male participants. Participation was voluntary, the study participants were selected randomly, were given details concerning the purpose and were guaranteed the research results confidential. At the same time, teachers of two subjects completed the instrument on the discipline's approach. In this way it became apparent the relationship between student learning approach to teaching approach by the teacher.

Measures

1. The Inventory of Learning Styles - specific courses (ILS, Vermunt, 1996, 1998).
2. Approaches to Teaching Inventory (ATI, Trigwell and Prosser, 2004).

Procedure

All students have completed the two samples. The questionnaires were done in the classroom. Application was made collectively, without limit of time, with the participants. The condition imposed by the experimenter was that participants be familiar with the two disciplines and have minimum five appearances in courses and examinations for the two disciplines. Testing approaches to teaching with the support of teachers responsible for two subjects (who completed the questionnaire ATI, each for its own discipline), under the ÎECS.

Results and discussions

The results obtained in this case confirm that there is instability and a high stability in the use of learning strategies in the two university courses. It should be noted that the learning strategies covered in this study are: processing strategies, cognitive control strategies, meta-cognitive.

In the care of processing strategies: concrete processing, sequential processing, critical thinking, ANOVA reveals significant differences. These three factors belonging to strategies targeted understanding (critical processing) on reproduction (sequential processing) and

implementation (concrete processing) showed the same pattern with regard to variations between courses. Untargeted factor showed a different pattern, it does not vary by school. The fact that these three independent factors vary simultaneously raises questions directed to the person or context variables that seem to evoke these strategies. Going deeper into the analysis, however, we realized that the effects are small for the first two strategies, which means that we can not rule out these differences, there is a very low probability that these two strategies to be used differently depending on the two courses. .

In contrast, in the case of *critical processing*, students registered significant changes in the extent to which this strategy is used for the two classes critical thinking ($z = -2.160$, $p < .05$, $d = 0.36$). This dimension involves the adoption of a critical attitude towards the text, comparisons with their own personal opinions and drawing conclusions based on facts and arguments, priority acceptance of what is written or said. Under this discipline, students are probably more often asked to provide explanations, with on mental processes and seek submissions made by various authors in this respect, giving them the different perspectives of analysis. Moreover, they are asked to determine whether there is consistency between the findings and opinions of others and their actions or opinions. Thus up their opinions and personal interpretations and build their own costs on the accuracy of the information. This dimension of cognitive processing is stimulated and therefore more frequently used in this discipline.

But first year students can not appreciate the usefulness of each course for professional development and learning strategies involve external guide. Analyzing the results we find significant differences for external control strategy process [$t(205) = -4.065$, $p < .01$, $d = 0.59$] external control strategy results ($z = -5.014$, $p < .01$, $d = 0.36$), but also in the composite score of control strategies [$t(205) = -3.387$, $p < .01$, $d = 0.50$]. We can say that for students involved in the present study, the strategy of external adjustment process is handled in a different way when we talk about learning from the two disciplines. Students meet certain requirements only if the teacher who teaches this course requires. In addition, teacher control can only be defined as activity. This includes control exercised by the course / seminar, teaching materials, teaching tools, computer systems and other regulating elements of the learning environment. In addition, accurate estimation of the degree of difficulty of the task plays a decisive role in mobilizing the best available potentials of the student. Vermetten, Lodewijks and Vermunt (1999) conducted a study on consistency and variability of learning strategies in different university courses and have found that students adopt different strategies when it comes to different courses. This indicates the presence of context-sensitive components in the strategy, but all the authors listed have identified that there is some variability between the different strategies that students adopt in different courses. So it seems question of stability versus instability, results of studies can not make an exact answer. For example, Marton and Booth (1997) considered that effective teaching depends on the subject created by the teacher. Effective teaching - according to those researchers - depends on how the teacher makes knowledge in ways that students can understand. The same skill depends on empathic awareness of what students know and what you can learn: "The essential feature on which pedagogy is that the teacher is put in place disciple. The teacher focuses on student experience in learning the subject. In this case, we can talk about what we thought contact '(Marton and Booth, 1997 p.179, apud Entwistle, 2000, p.7).

It was found that the relationship between study approaches and clearer perception of the courses are consistent with successful students, but sometimes inconsistent with students who have few results.

The conclusion seems to be that these specific variables are a consequence of the learning environment, taking a lesser extent in personal style or habitual methods of learning. However, a precaution must be taken to generalize in this case, given the specific characteristics present in our study courses, which may explain the variability of these strategies. The first course is mainly theoretical; the second is a practical course.

Further studies are needed on the use of individual learning strategies, involving much more contextual variables, carried out in several moments of the school career in order to clarify this issue. To generalize the results one should include more subjects and more teachers (and even the same teacher for different subjects that it teaches the same students).

The discovery that students adopt learning strategies depending on specific courses reinforces the idea that they are likely to determine context. This result is important in terms of instructional design practice and teaching. In the present study we found differences especially in the critical thinking and strategies to foreign control. To add yet another piece in the puzzle of academic learning will follow next study the dynamics of student learning during the academic route (undergraduate studies).

CHAPTER VI. A LONGITUDINAL APPROACH STRATEGIES AND LEARNING STYLES IN UNIVERSITY EDUCATION

An important purpose of higher education to students is to develop ways of learning academically and independently. The theory states that as the students filed in training, they gain greater expertise in terms of effective learning approaches. A number of studies in this area (Vermetten, Vermunt and Lodewijks, 1999, Alexander et al., 1997, Lindblom-Ylanne and Lonka, 1996, Entwistle and McCune, 2004), show that students in the last years meet a higher level of processing in deep self learning strategies, critical thinking and higher levels compared with those of novices. And studies by Entwistle (2000), advance the same situation. From interviews with students during the first years of study, the author discovered that they initially saw learning mainly as a matter of memorization and reproduction of knowledge in ways outlined by the teacher. During the academic years, students gradually began to understand that learning was more effective when they understand the information and critical process. The starting point of this study is therefore the investigation in this field, investigation that supports the hypothesis of the development of learning throughout the academic route.

Purpose and research objectives

Based on the results of studies undertaken by Vermetten, Vermunt and Lodewijks (1999) - which state that advanced students than those in the first year show a deeper level of processing, self-regulated learning and high levels of critical thinking - the study aims to capture the dynamics of learning strategies and styles, more precisely to identify changes in the use of strategies and learning styles of students during the university years, assuming that they develop strategies and learning styles targeted understanding.

Hypotheses and research design

Hypothesis 1: There are significant differences in the number of years of studies on learning strategies and styles during the academic route (three years of undergraduate studies).

The study is longitudinal type, identifying strategies and learning styles in three different times every year.

Hypothesis 2: There are significant differences in terms betwen student approaches to learning during the first year of study.

Longitudinal type study is identifying the strategies, motives and approaches to learning in two different times every semester.

Method

Participants

Our study aimed to issues referred from the data collected from the 120 participants, students from the Faculty of Social and Human Sciences, University of Oradea. Participants in the study were randomly selected, were given details concerning the purpose of ensuring research - they - the confidentiality of results.

Measures

Inventory of Learning Styles (Vermunt, 1994-1998);

Study Process Questionnaire (Biggs, Kember, Leung, 2001)

Procedure

Participants in the study group completed both instruments in the classroom. The ILS has been applied in three times as follows: moment I, when testing students in the first year of study, moment II, when is testing the second year of study and moment III is testing time since the third year of study. The allegations contained in the inventory are valued on a scale from 1 to 5, where 1-all against the 5 - totally agree. The score for each subscale is done by adding the numerical scores obtained as shown in the description in Chapter 4. R-SPQ-has been applied to a number of 35 students in first and second half of the first year of study. Testing was done in the classroom and the second instrument, the conditions of participation following the rules of ethics, informed consent.

Results and discussions

As the results of studies in this area mentioned and how we can deduce from this study and record students' learning progress due to the academic route, which is reflected in the training progress of learning strategies that differ in content and effectiveness of those used in first year of study. Quantitative analysis of data shows that there were significant changes for some of the strategies and learning styles of students during the academic route.

As we developed the study, students use a specific way of processing more apparent when the 2nd test in the sense that they establish links between knowledge and reality, the world around [$t(79) = -2.169$, $p < .05$, $d = 0.50$]. Understanding abstract concepts is only carried out if they can find their concrete examples, examples taken from their knowledge and experiences of everyday life. These students have assimilated the knowledge during the first year of study and try to seek

opportunities for their application. In particular, they prefer information they can apply in a practical way.

Although the score is probably a strategy that has crystallized during high school years (results of studies supported by Vermetten, Vermunt and Lodewijks, 1999), however, when our students show a significant decrease [t (42) = 2.838, p < .01, d = 0.88]. Moreover, if the first year, according to study respondents indicated learning materials supplied or offered by the teacher, towards the end of the third year there is a decrease in preference for this mode of regulation. It's about external control strategy of adjusting results in a lowering of the time when three of the test statistically significant [t (42) = 1.963, p <.05, d = 0.64].

Mental models involved in this study, for which there were significant differences are: the accumulation of knowledge, absorbing knowledge, and stimulating teaching a trend in the use of knowledge. For cooperative learning there were not significant differences (in the previous survey, the present study, students in Psychology have obtained the lowest values of the average for this size compared with students of other majors).

A mental model of learning that shows a statistically confirmed increase in the present study is to gain knowledge [t (42) = -2.275, p <.05, d = 0.71]. According to this model, students have an ideology based learning knowledge, building models by searching the existing relations between matter and other sources by searching on their own initiative and direction based on individual activities and reflective materials in the literature consulted. Moreover, if the first year of study students consider the teacher should encourage them to be able to think about the relationship between the material taught and reality, in the last year stimulating study teaching is no longer located in the most popular with students, they are able to train these strategies without teacher support. Thus, stimulating teaching is the next dimension on which to record significant changes [t (42) = 2.258, p <.05, d = 0.71].

This is supported by a significant decrease in preference for absorbing knowledge subscale [t (42) = 2.860, p <.01, d = 0.91]. This model assumes the practical learning of the facts presented in books, a series of storage and reproduction.

The idea supported by Vermetten, Vermunt and Lodewijks (1999) shows that Dutch students more rarely approved of the idea of learning as acquisition / absorption of knowledge after the third semester (d =. 21). Instead, they have not experienced changes in teaching seen as a building or a use of knowledge and in the idea of incentives and cooperative education.

Orientation to cover the field of student motivation and learning includes a wide spectrum of goals, intentions, attitudes, concerns, doubts, to study. Subscales for which there were significant differences are: personal interest-oriented certification oriented profession and skills testing. Ambivalence does not seem to register significant changes. This means that students still doubt over the education they receive today, show a low confidence in the capabilities of their study because they are aware that they are studying subjects that require a special effort and specialization chosen is quite likely difficult.

There is a decrease in learning-oriented certification [t (42) = 5.180, p <.01, d = 1.59], the purposes of the study is confined only to pass exams and gain credits.

In the first year of study students are strongly oriented profession. Thus his choice of subjects and courses with the intention of gaining a further qualification,-faculty is regarded as a necessary step to that profession or other further studies needed for the profession concerned. It undergoes a significant change over time [t (42) = 3.227, p <.01, d = 0.99]. In the third year, students are interested in personal development, and accumulating as much knowledge.

Three subscales of orientation to learning have been changed over time in the study of Dutch psychologists. Orientation degree decreased between the first and third semester (d =. 12), while the vocational orientation and personal interests have increased (d =. 17 d =. 14). Ambivalence and self-orientation remained the same. Strategies learning style indicates a targeted breeding, reproduction-related clear preferences for information, showed a significant decrease [t (42) = 4.428, p <.01, d = 1.37]. At the same time, learning style cartel targeted an increase during the academic route, especially in the late years of education [t (42) = -0.567, p <.01, d = 0.47]. As support and other research (Hamilton and Ghatala, 1994, apud Negovan, 2001) focused on understanding learning occurs in meaningful learning tasks for the individual, those related to real life, involving effort and active engagement and a fair assessment successes and failures. The tasks are more important, how have personal relevance, are exciting and appropriate experience, knowledge, level of development, but also preferences for a particular way to teach the student. This can be explained by the change in mental models. In this respect, Vermunt and Vermetten (2004) note that mental models of learning are key factors for choosing particular learning strategies, developing models that explain such a part of the development of academic learning (memorizing and understanding the two issues are independent). Untargeted learning style does not record significant changes during the years of education [t (42) = 1.611, p> .05].

Results indicate significant differences between the two semesters in terms of motives, strategies and approaches in depth. Instead, in what concerns the surface [t (34) = 3.838, p <.01, d = 1.33], surface strategies [t (34) = 2.207, p <.05, d = 0, 75] and surface approaches [t (34) = 3.463, p <.01, d = 1.17], the results show that these dimensions of learning are involved significantly less by students in the second half. Surface approach is to plea to avoid educational failure, earning accolades and external rewards. The most common strategies are: saving, minimizing the effort of study and assessment exams anticipation. Instead, strategies and approaches in depth do not seem to suffer significant changes within the first year of study (these dimensions will become visible after exchange student involvement in program trainings, which will be presented in the following chapter).

This change can be explained on the one hand, by the student-centered academic environment that discourages learning style and focuses on and encourages reproduction as a way of learning focused on building knowledge.

It was expected, according to the model proposed by Vermunt (1998), ILS's subordinate model, learning strategies provide less stability than mental models and learning orientations. This was not confirmed in our study, whereas learning strategies had the highest level of stability, especially meta-cognitive regulating. The lowest level of stability was recorded for learning guidelines, but also for mental models (mental models showing the most dynamic in the study by Dutch psychologists Vermetten, Vermunt and Lodewijks, 1999).

The present study results can be understood taking into account both the context and the hypothesis development. After the second year, students are assessed a lesser extent sequential processing activities, which recorded a significant decrease during the third year. Moreover, one can observe an increase in activities of realizing the initial testing at the second test. These results indicate that there has been an increase in their educational activities. Bamps, Greek and Buelens (1998) obtained similar results indicating that "broad support directed to students working is more common in higher levels than the lowest of university education" (p. 8).

With regard to staff development model, we mention the mental model of knowledge accumulation that records significant progress in our study. Another dimension, acquisition /

absorption of knowledge of students is reported as occurring less frequently, so the preference for clear and accurate information and reduced reproduction.

The changes identified in terms of mental models of learning and learning orientations approaching the results of other studies in the literature (Perry, 1970 and Lindblom-Ylanne Lonka 1996, Alexander et al., 1997).

A series of cross-studies (Busato, Prins, Elshout and Hamaker, 1998) have reported an improvement in the quality of learning. Based on data obtained and the results of studies conducted by the authors mentioned, we can formulate a hypothesis that development means that when students progress in education, the structure factors underlying their learning strategies, mental models and learning guidelines will become more focused on learning and networking will reveal more powerful. Students' interpretation regarding the context affects students 'learning process' teachers' expectations and the workload is considered excessive. There are other studies that support the hypothesis development (Christopoulos, Rohwer and Thomas, 1987).

Regarding the fact that mental models have shown a strong dynamics that is probably due to the different nature of the items on the variables that influenced the results. The more general and abstract items could be more difficult to answer, leading to varying results. Qian and Alvermann (1995, apud Vermunt, 2003), who found the small internal inconsistency in the epistemological beliefs scales, suggested that the concept of epistemological beliefs can not be easily investigated empirically.

In terms of epistemological perspective on learning, we summarized several issues raised by various studies. The processes that form mental models of learning and the underlying mechanisms of learning refer to multiple and diverse sources of information. A pattern directed towards reproductive learning is supported by a dualistic conception of knowledge, where knowledge and information are designed as true or false (Lonka, Olkinuora and Mäkinen, 2004). Instead, Rosendaal (2001 apud Vermunt and Vermetten, 2004) found that students knowledge in a more relativistic had higher scores on scales representing ILS learning directed towards meaning, which is an orientation that involves deep processing, self-regulation, knowledge building and learning as the concept of personal interest. Students' knowledge in a more absolutist perspective, showed aspects of learning directed towards reproductive pattern (processing step, external adjustment, assessment of knowledge, certainty orientation) and a learning pattern untargeted (lack of adjustment ambivalent and cooperative orientation).

We conclude that the hypothesis remains valid in the general development for students who are progressing in a certain type of education, but if the context is to explain the different structures of different types of educational factors.

The results of studies in literature and the results obtained during previous studies of this paper indicate the importance of attention to the learning processes of the students who enter a new kind of education, whereas during this period certain changes occur. Since there are possible clues that enabled educational activities, guidelines and concrete evokes deep level learning, in the next chapter we proposed a training program to optimize learning, modeled after the principles ÎECS.

CHAPTER VII. THE EFFECTIVENESS OF A TRAINING PROGRAMME ON LEARNING

According to Vermunt (1998) teaching and learning are interrelated processes that can adjust to each other, by adapting the teaching strategies used by the teacher on how students adjust their learning activities. Teaching is thus, guiding students in the choice of learning strategies that

allow the construction, modification and use of knowledge. Such teaching is oriented to student learning processes and thus, because it focuses on the processes by which knowledge is constructed and then applied in practice. Most commonly, studies that have addressed this issue have found an increase of understanding, meta-cognition and self-regulation (Vermunt, 1995, Theophilides 1997, Vermunt 2003).). Furthermore, studies show that learning-oriented sense is positively associated with efficiency indicators of the study, even if the scores obtained in tests contain factual questions. Learning-oriented reproductive systems showed negative correlations with measurement results. Untargeted learning showed the strongest negative relationship with performance in examinations, while in most cases directed towards learning application showed no relationship to academic success. In addition, regular examinations of the first years of higher education hardly build students' ability to use processing strategies critical, analytical and practical (Vermunt and Vermetten, 2004). *Can you change students' conceptions of learning in a constructive way?* The answers that emerge from the literature support the possibility of such changes. This question will be analyzed in this study.

Objectives

The objective of this study is to consider whether an intervention program to optimize learning can lead to changes in students' opinions and conceptions about learning in a constructive way. Another objective is to verify whether it derived from such an impact on increasing training strategies and learning styles targeted toward understanding self-regulated learning.

Hypothesis and design

Hypothesis: *Training to optimize learning strategies focused on growing the meaning and application of knowledge*

Mixed research design (pretest-posttest-folllow-up, with control group and the placebo group).

Method

Participants

The experiment involved a total of 60 students (20 per group) - Year of the Faculty of Social and Human Sciences, Psychology Specialization at the University of Oradea. Age range of subjects is between 19 and 45 years. Lot consists of 11 boys and 49 girls. Participation in the experiment was voluntary; participants are informed of the general purpose of the whole endeavor.

Measures

To assess the effectiveness of intervention were used the following measures:

a. Inventory of Learning Styles (Vermunt, 1994-1998;
b. Study Process Questionnaire (Biggs, Kember, Leung, 2001)

Procedure

Pre-testing for all three groups was held at the beginning of March of the academic year. The two questionnaires were applied in the same set, pencil-paper, having passed the appropriate instructions. The tools have been applied before the intervention program, program completion and every 6 months after training. The first of those ILS instruments, was measuring strategies and learning styles and the second R-SPQ measured motives, strategies and approaches to learning of students.

A sample application was made to counterbalance or to eliminate error due to testing order. Testing was done in the classroom, respecting the conditions of participation in ethical standards for informed consent. The intervention for both experimental group and the placebo group, was conducted over a period of 8 weeks, meeting 2 hours per week. Meetings were held during the hours of specialty practice.

They were deployed a total of eight activities covering the area of learning strategies and styles: "Strategies and learning styles," Information Management "," Planning and management learning "," Reading / study effectively, "Take notes" " Conceptual Map, "" Cooperative Learning "and" learning techniques for examination".

For the placebo group, the program was to engage in activities on issues related to self-knowledge: "Who am I?", "Self-assessment of their skills," I mirror "image of self and other," "Self-esteem and conflicts "," I'm entitled to say what they think, "Let's quit hard words", "Managing emotions".

Results and discussions

The data collected support the hypothesis formulated with a few exceptions. To summarize, quantitative analysis allows us to make the following inferences. Students belonging to the experimental group on learning progress, resulted in a targeted way of understanding learning materials (which have the structure processing strategy and identification of relationships between the concepts taught, as a strategy of regulation - regulation of the internal learning processes, self-regulation processes that have views about learning which contributes to the accumulation of knowledge through a vision and scope relative to the responsibility to learn). The same effect is found if the application is directed learning style knowledge. The effect is significantly higher for students who are in the experimental group compared with participants undergoing a self-awareness program for students belonging to the control group. Students belonging to the control group appear to be eager to test the skills and maintain the orientation degree compared to students belonging to the experimental group.

The results could be explained by the fact that most activities in the program focused on deep processing activities: reading / study effective ways of drawing up a concept map, learning exam techniques, techniques that help them to become independent this process, be able to self-esteem, teaching students how to learn effectively. Participants understood the importance of concrete processing [$F(2.38) = 7.955$, $p < .05$ ($d = 0.98$ - pretest-posttest, $d = 0.64$ posttest- follow-up)], to assume responsibility and involvement in carrying out the study. As these messages played over many activities, the obtained result seems yo produce natural changes.

Another issue concerning the training program, was the fact that most activities in the program have pursued the achievement gap between memory and learning. In this way, the students have understood the importance of depth processing, networking and *structuring of information* [F

(1,25) = 5.893, p <.05, d = 0.95 pretest-posttest, posttest-follow-up d = 1, 17]. Both variables show a change in the media, that is a result of the trainings, students belonging to the experimental group used more frequently constructive processing strategies and self-strategy and reduced the use of strategies based on reproduction.

The program led to changes in *meta-cognitive regulating strategies*. To this end, activities were conducted in which students were placed in contact with information related to learning management. They were taught to plan learning activities, to diagnose gaps. Thus, reflecting on the material, students were encouraged to formulate questions the personal opinions motivated, to integrate new knowledge within the already existing ones. This has encouraged its own mode of operation to reflect on how this knowledge, which therefore led to the development of meta-cognition self-regulation knowledge. The program has also resulted in a transfer effect reflected in obtaining higher marks in the examinations held in other disciplines. We can say that teaching students how, where and when to use some specific strategy (meta-cognitive knowledge) led to a significant increase in the efficiency of these strategies.

Thus, similarly to how the teacher can control the learning process, students are able to *self-regulate learning processes* [F (2.38) = 2.590, p =. 058, d = 0.72, pretest-posttest] and these skills can be represented on a continuum ranging from very least, intermediate and very long. If at the beginning of the program, they did not select appropriate learning strategies, during their use statements appropriate learning activities were chosen. Furthermore, there were situations where students have proved that they are able to achieve a specific learning activity and to enforce its own initiative. The constructivist *model of knowledge accumulation* [F (1.20) = 10.132, p <.05: d = 1.45, pretest and posttest: d = 1.49 - posttest and follow-up] becomes visible. And learning style directed toward understanding increases as a result of student participation in training program [F (1.24) = 7.520, p <.01]. Results comparisons are statistically significant both between pretest and posttest phase (d = 1.07) and between posttest and follow-up (d = 1.35) effect sizes were large. Also, the results of comparisons in the style of learning targeted application of knowledge are statistically significant for participants included in the experimental group [F (2, 38) = 16.456, p <.01], meaning that these students use more frequently this way learning from pretest to posttest (d = 1.71), which is maintained and when follow-up (d = 0.55).

If memory strategies recorded a decrease, but targeted for style reproduction of information have not been significant changes and reduce the size as would be expected. Strategies surface were significantly reduced in the experimental group following the intervention phase and maintained in follow-up [F (1.22) = 7.866, p <.01, d = 1.42].

No significant changes were noticed in surface level strategies in terms of the placebo group and the control group. Reduction strategies can be considered surface for the experimental group was possible because of activities in which students were advised to obtain information about strategies and styles, from various sources, either through interviews with specialists, or by consulting the resources listed on the Internet. They have not asked store but the selection, integration of various information, and structuring their relationship.

Also, we are witnessing a decline in *approaches between the pretest and posttest surface* [F (1.26) = 7.571, p <.01 d = 1.27], with a large effect size, but why not register changes in surface significant. Avoiding failure of education, descriptions and obtaining external rewards are still issues that first year students are considered more important than the reasons in depth, and the reasons do not change overnight. This confirms once again that students understand why learning is a puzzle with many pieces.

This is supported by studies by Vermunt (2003), indicating independence between the two modes of learning, learning styles are two contrary (oriented towards understanding the material-oriented versus memorizing information).

As it emerged from the discussions that we had with students, we believe that an important role in the changes made due to the presence of learning-related information. The information they thought important at the beginning of training, were on obtaining high grades in exams and information about qualifying, so a learning model aimed at absorbing knowledge. Based on that information evaluating their chances and decide what strategies to adopt in learning. Towards the end of the program, however, these issues have passed the background, students using domain-specific knowledge in a greater extent than at the beginning of [$F(1.28) = 4.888$, $p < .05$, $d = 1.42$].

As I said in the first study, many researchers believe that ultimately it is about the individual perception of learning environment to the learner, which makes the student to use that particular approach to learning and not necessarily in the context of his itself. This may be one explanation of why the students gave positive evaluations of individual techniques, but they charged cooperative learning, more generally, as an ineffective motivator for the study, results supported by other studies (Phipps et al., 2001).

Briefly, a student-centered approach -it has been shown- is associated with the fact that students tend to improve their in-depth approach to learning and strive to improve the quality of learning outcomes. Learning models are quite stable within an educational context constant, but can be simultaneously modified. Such a change, however, takes time to work (can not happen from one day to another), and for ensuring the success of such changes, interventions should occur in all parts of learning, not only in the strategies.

However, to date, few studies have been performed in this field and have still remained to be done. It is necessary, the completion of larger studies in which, the gradual transition from external regulation to self regulation learning process to be implemented in the usual schedule, with a careful analysis of the effects and results of this innovation of learning processes (Vermunt, 2003).

One of the most important practical contribution is the discovery that there are different learning models and some models are more effective than others in terms of level of knowledge to which they lead and which they provide training for developing the skills of sustainable learning. Through an assessment of learning patterns characteristic of their own students, teachers, faculties or institutions might be able to observe the dominant models of student learning.

Gradually, people are becoming increasingly dissatisfied with traditional teaching and thus the need to introduce innovative teaching methods arises, which emphasizes active learning, constructive and self-regulating.

Conclusions and implications

The theoretical framework described in this work can be used as support in developing student-oriented teaching programs that encourage students to develop learning models, and application-oriented sense. These models are exactly where they will need after graduation, will face a long lasting learning, self-oriented model. As Vermunt and Vemetten suggested (2004), future research and development of this theory should be geared towards further integration of the various conceptualizations of learning in higher education specifically. In developing this theory, we consider it important to include emotional and social components of learning in a more obvious way. In this way, it will be possible to develop a third generation of conceptualizations of learning among students. Future research should also focus on the interaction between self and external

regulation of learning. For example, how different degrees of self-regulation and external regulation of learning work against each other and if this happens differently in different educational environments are just some of the important aspects that should be taken into account in future research. They should also be directed to the concrete that could be done to promote positive learning models in different types of educational backgrounds.

Directions to modernize teaching assessment strategies must also follow this trend. Such assessment is necessary connecting students to benefit the social context in which they occur, or more accurately, the social contextualization of the task. The aim in this direction, promoting those types of teaching evaluation in a position to provide support for self deliberate processes, giving students the opportunity to appreciate the performance, to establish individual standards and develop their own strategies for achieving them (Morrison, 1995, apud Stan, 2000). This paradigm shift is required by default centering on student and student-centered academic environment.

We believe that teachers should give more importance and attention to different learning styles of students in that it should identify the styles, to encourage students to reflect on and to focus their interventions around them. A student, before you try to learn new ways of learning, needs to realistically perceive their own abilities and strengths. Thus, a proper understanding will enhance the confidence and support that effort, targeted leads to success. Students will be more motivated to learn if they know more about their strengths and weaknesses as well as people studying. In addition, student learning will be effective if you manage to capture the relationships between concepts, if you realize that thinking can be practiced, but this practice calls for regular practice. Sometimes it is necessary to redefine the way we see things. Finally, in learning, just like in real life, performance, success does not appear on the first attempt, so it takes perseverance. Also, the student who prioritizes construction of knowledge through their own efforts and by consulting other sources of information than the teacher, will be able to monitor, regulate, and learning to use the main learning activities of processing activities depth. Moreover, changing the perspective from which to learning, teachers will be able to review their teaching approaches in order to adapt to the current education system and society requirements.

Studies are needed to specifically address these two ways of assimilation of learning content: focus on reproduction versus understanding (constructivist) and how the interaction between these two variables affects learning.

The results of this study showed that the training program succeeded in promoting deeper understanding and meta-cognition and that students had a positive assessment of the learning process: they appreciated the diversity and originality of learning activities, have approved participation in the process and training and have increased feelings of self-realization.

CHAPTER VIII FINAL CONSIDERATIONS

Understanding academic learning problems remains a puzzle with many pieces, which we tried to reconstruct, through the present research and we argue the need to change the perspective from which we see this entirety. Some of these tracks have been laid out in the relevant theoretical approaches over time on learning and we recall here the behaviorist perspective, the perspective of cognitive and constructivist perspective. Each orientation was eventually able to complete this puzzle, but the evolution of society has always changed the perspective from which to be seen this very complex phenomenon.

Thus, one of the solutions offered by experts in the field of education is student-centered paradigm. This paradigm, which we argued over the pages of this book, brings a change of

perspective. In this sense, it prioritizes the student learning stressing both the complexity and importance of building a relationship with the other component is the educational process. Increased attention that this perspective gives a student is part of the overall restructuring process of the educational process, restructuring justified by the desire to increase the quality of the explanatory and predictive capacity in the field, better anchoring and educational reality in most practical approach.

We are fully aware that the path must go through a student with his teacher to get the knowledge and understanding of learning is not a straight and smooth one. This involves acquiring a language specialized for a certain type of discourse that is based on facts, but equally, and to capture the relationship between psychological facts to be further structured. Moreover, these facts should be interpreted and assigned meanings; plausible explanations should be provided to make predictions about certain behaviors, to cultivate the student's experimental spirit. This is because society demands require formation of skills and competencies of the learner, which involves understanding, self regulation and accountability of their own training.

In the light of the above is that the teacher must first know their students to tackle teaching in a manner reflective, so that later they can adequately choose an educational approach. The question naturally arising here-To what extent are learning strategies used by students who are sensitive to situational and contextual influences? – We tried to find an answer in this work. Some researches show that learning strategies are predominantly context-specific and are "put to work" according to the circumstances of context learning (Hadwin et al, 1997, apud Vermunt and Vermetten, 2004). Other authors argue that learning strategies are part of the person's predisposition to learn in a consistent way, in a personal learning style (Schmeck, 1983, apud Vermunt and Vermetten, 2004). I had in mind this view when I started studying academic learning.

The paper is based on learning styles model formulated by Vermunt (1998) and model approaches to the study of Biggs's (1987). Exponents of the constructivist paradigm, the authors have built models based on the premise that the explanation by the student choice of a particular learning strategy is at the intersection of two areas: the context and the particular individual. We emphasize that these approaches have proved very fruitful in explaining aspects of academic learning. Thus, the approach followed by us proved analysis strategies and learning styles in terms of approaches offered by the two authors, and allowed the study strategies and learning styles in terms of education / student-centered education. In this respect, the analysis we have considered several perspectives: academic programs / majors different specific university courses, networking with the style of teaching, and highlight the dynamics during the academic route. These insights were the starting point in investigating strategies and learning styles in the context of a training program.

By emphasizing contextual influences, we demonstrated that this concept is flexible and has allowed analysis of how different contexts vary. By capturing the variations in the learning environment and emphasizing the effects on development, we have demonstrated the importance of the contextual factors and the personal strategies and learning styles. As such, critical analysis of the main guidelines and models of learning, which is an initial contribution at theoretical work has been carried out for the proposed integrative perspective presented in chapter three, reflected in the educational model ÎECS.

Thus, in theory the paper presents an overview of learning approaches, set out the relevant models of learning styles, but a series of studies conducted so far in the area of the new psychology of learning, highlighting the effect of factors involved in student learning, the development of academic success, personal development. Support effective learning strategies in depth and

encourages further research. This paper brings evidence to implement such ÎECS stressing the importance of studying the effect of individual differences in learning and self-regulated learning. These are precisely the patterns they will need after graduation, when they face a long period of continuous learning, self-directed learning, which lasts until the end of life. They not only influence the behavior and performance, but also mediates the latter's influence in the selection of strategies and styles.

The studies aimed at the development strategies and learning styles and pathways academic years on the stability and variability of learning strategies and styles in different learning contexts, the paper adds arguments to support constructivist perspective, that the academic components of learning are closely related context (longitudinal studies are relatively rare).

It was proved that the use of longitudinal studies, strategies and learning styles targeted significant increases with advancing academic, linking, structuring, critical thinking exhibits a high level of use, as well as meta-cognitive strategies. Students record a change in the conception of learning. The fact that the highest level of depth is manifested in the strategies used by students in their final years, comes in line with the model provided by Vermetten, Vermunt and Lodewijks (1999) on the dynamics of learning.

The research makes contributions at the methodological level. In this respect, he performed the translation and adaptation of the Romanian population of two of the most powerful strategies and measures to measure students' learning styles: Inventory of Learning Styles (ILS, Vermunt, 1994) and Study Process Questionnaire Revised (R-SPQ-2F, Biggs, Kember and Leung, 2001). They can be used in teaching, educational counseling activities for students, but also in future research. In addition to data on the validity and reliability of scales and gauges it offers standards of theirs for the Romanian population. At the same time, approaches to capturing the relationship between teaching and learning approaches, the assessment tool was adapted teaching approaches: Approaches to Teaching Inventory (ATI, Trigwell and Prosser, 2004), useful measures for every teacher portfolio to improve their teaching style and to channel the work in a constructive direction.

At the pragmatic level, the paper provides a model for implementing an intervention program to optimize student learning. It can be seen to be characteristic of activities tailored to the specific group of students. Fri research results thus support the students and teachers in order to improve teaching, learning and self-evaluation. Participation in activities based on knowledge strategies and learning styles contribute to optimization of learning and social development / personal students. Recommend its implementation on a longer time, with the objectives of academic and professional development of students.

This paper is not without its critics. Thus, in some of the studies presented, the subject lot could be expanded, the number of instruments used could be increased. Further evaluation of the perceived learning environment context to clarify the differences accurately. One should also include external evaluations such as those of teachers with measurements students to follow the development strategies and learning styles. The study on specific courses could be expanded for the purposes of collecting data on teaching approaches from different teachers (i.e. from several disciplines), and the students they teach. Number of participants could be extended to study both longitudinal and in the training program and training time could be increased to at least one semester. Reduced possibilities of generalizing the results, is another drawback, further studies are needed to extend the model offered by us and other specialties.

Despite these limitations, in the approach followed I tried to develop an action allowed for personal reflection on the issues concerned, issue of interest, with implications for educational plan for optimum learning, in line with the reconfiguration of methods of instruction.

Corroborating this concept by providing a suitable psychological climate and other ways of restructuring strategies, it becomes possible to improve the overall learning benefits students and at the same time, upgrading the educational approach as a whole. In this respect, future research directions could include other components of the educational process efficiency research IECS. At the same time, longitudinal study could be extended to the master or doctoral study years.

On strategies and learning styles of a dynamic and flexible manner, we are able to avoid some routines and learning about ways to overcome this traditional, classical, working with students. Only thus we will be able to find the right place for learning psychology of learning styles appropriate piece of the puzzle in the structure and fill it properly, so the prospect of which is the place and role of an effective link to allow the student to teaching life actual student learning in the latter are well anchored in reality and at the same time, another source of learning.

REFERENCES

- Albu, M. (1998). *Construirea si utilizarea testelor psihologice*. Cluj-Napoca, Clusium.
- Anderson. J., Reder.L. şi Simon.H., (2000). Applications of Cognitive Psychology to Mathematics Education, on-line., *Application,* London - New York: Routledge
- Atkinson R.L., Atkinson R.C., Smith, E.E., şi Bem, D.J. (2002). Învăţarea şi condiţionarea. În *Introducere în psihologie*- Editura Tehnică., Bucureşti.
- Alexander, P. A., Murphy, P. K., Woods, B. S., Duhon, K. E. și Parker, D. (1997). College instruction and concomitant changes in students' knowledge, interest, and strategy use: A study of domain learning. *Contemporary Educational Psychology*, 22, 125–146.
- Ausubel, D. , Robinson, F. G. (1981). *Învăţarea în şcoală. O introducere în psihologia pedagogică,* Editura Didactică şi Pedagogică, Bucureşti.
- Bamps, H., Elen, J. și Buelens, H. (1998). *Professors' conceptions on the design of skill-oriented components of university curricula*. Paper presented at the joint meeting of the EARLI-SIG's'Higher Education' and 'Teacher and Teacher Education', August, Leiden, The Netherlands
- Bîrle, D., (2010). *Implicații psihologice ale alegerii carierei*. Teză propusă pentru obținerea titlului de Doctor în Psihologie. Universitatea Babeș-Bolyai, Cluj-Napoca.
- Bernat, S. E.(2003). *Tehnica învăţării eficiente,* Editura Presa Universitară Clujeană, Cluj-Napoca
- Bernat, S. E., şi Chiş V.,(coord.) (2003). *Noua paradigmă universitară: Centrarea pe client,* Editura Presa Universitară Clujeană, Cluj-Napoca
- Birch, A., (2000). Psihologia dezvoltării, Editura Tehnică, București.
- Biggs, J. B. (1987). *The Learning Process Questionnaire (LPQ): Manual*. Hawthorn, Vic.Australian Council for Educational Research.
- Biggs,J, Kember şi D, Leung, D. (2001) The revised two-factor Study Process Questionnaire: R-SPQ-2F, în *British Journal of Educational Psychology , 71, 133–149.*
- Biggs, J. B. (1999). *Teaching for Quality Learning at University*. Buckingham: Open University Press.
- Biggs, J. B. (1993). What do inventories of students' learning processes really measure? A theoretical review ve clarification. *British Journal of Educational Psychology, 63,* 1-17.
- Biggs, J. B. (1987). *Students approaches to learning and studying.* Hawthorn: Australian Council for Educational Research.
- Boekaerts, M. (1997). Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students. *Learning and Instruction*, *7*(2), 161–186.
- Bonchiş, E. (coord.) (2002), *Învăţarea şcolară- teorii, modele, condiţii, factori ;* Oradea Editura Universităţii Emanuel
- Bonchiş, E., Sas, C., Drugaş M. şi Roman, D., (2008). *Învăţământul/Educaţia centrate pe student* , Editura Universităţii din Oradea, Oradea.

- Bonchiş, E., (2004). Capitolul Învăţarea, în Bonchiş, E., (2004). *Psihologia copilului*; Editura Universităţii din Oradea.
- Boyle E., Duffy T. şi Dunleavy K.(2003). *Learning styles and academic outcome: The validity and utility of Vermunt's Inventory of Learning Styles in a British higher education setting*. British Journal of Educational Psychology (2003), 73, 267–290.
- Bruner (1970 a). *Pentru o teorie a instruirii*, E.D.P., Bucureşti
- Bruner (1970 b). *Procesul educaţiei intelectuale*, E.D.P., Bucureşti
- Bruner, J.S. (1978) *Pentru o teorie a instruirii* , Bucureşti - Editura Didactică şi Pedagogică
- Busato, S., (1998). Learning Styles; a cross sectional an longitudinal study in higher education. *British, Journal of Educational Psychology* 63(3), 427-421.
- Busato, V. V., Prins, F. J., Elshout, J. J., şi Hamaker, C. (1998). Learning styles: A cross-sectional and longitudinal study in higher education. *British Journal of Educational Psychology*, *68*, 427–441.
- Clark, B., (2000). *Spre o universitate antreprenorială*, Editura Paideia, Bucureşti
- Christopoulos, J. P., Rohwer, W. D. şi Thomas, J. W. (1987). Grade level differences in students' study activities as a function of course characteristics. *Contemporary Educational Psychology*,12, 303–323.
- Cocan, C, (1999). *Psihologie şcolară*, Editura „Dealul Melcilor", Braşov,
- Coffield, F., Moseley, D., Hall, E. şi Ecclestone, K., (2004). Should we be using learning styles, *Journal of Educational Psychology*.What research has to say to practice. *Learning, and Skills Research Center*, NLN Press, New York www.LSRC.ac.uk
- Cerghit, I (1993). *Metode de învăţământ*, E.D.P, Bucureşti
- Cuthbert, P. F. (2005). The student learning process: Learning styles or learning approaches? *Teaching in Higher Education*, *10* (2), 235-249.
- Davitz, E.R. şi Ball, S. (1978). *Psihologia procesului educaţional*, EDP, Bucureşti.
- Delors, J. (coord.) (2000). *Comoara lăuntrică. Raportul către UNESCO al Comisiei Internaţionale pentru Educaţie în sec. XXI*, Iaşi – Editura Polirom
- Dicţionarul Explicativ al Limbii Române (1974)
- Duff, A., Boyle, E. şi Dunleavy, K. (2002). The relationship between personality, approach to learning, emotional intelligence, work attitude and academic performance. In W. C. Smith (Ed.), *The 7th Annual ELSIN Conference* (141-151). Ghent: Academia Press Scientific Publisher
- Dunn, R. Şi Griggs, S. (1998). *Learning Styles: Link between Teaching and Learning*, în Dunn şi Griggs, editori, Learning Styles and the Nursing Profession, NLN Press, New York.
- Entwistle, N., şi McCune, V. (2004). The conceptual bases of study strategy inventories. *Educational Psychology*. *Rev.* 16(4), 325–345.
- Entwistle, N., McCune, V. şi Hounsell, J. (2002). Approaches to Studying and Perceptions of University Teaching-Learning Environments, Concepts, Measures and Preliminary Findings. Enhancing Teaching-Learning Environments in Undergraduate Courses Project, Higher and Community Education : http://www.ed.ac.uk/etl
- Entwistle, N. J. (2000). Promoting deep learning through teaching and assessment: conceptual frameworks and educational contexts, *Paper presented at the TLRP Conference, Leicester, November 2000*
- Entwistle, N. J. (1997). Reconstituting approaches to learning: A response to Webb. *Higher Education*, 33, 213–218.
- Entwistle, N. J., şi Ramsden, P. (1983). *Understanding student learning*. London: Croom Helm.
- Entwistle, N. J., şi Tait, H. (1995) *The Revised Approaches to Study Inventory*. In Entwistle, N., (1995). „Introduction: Influences of Instructional Settings on Learning and Cognitive Development – Findings from European Research Programs", *Educaţional Psychology*, nr.30 (1), Laurence Erlbraum Associates Publishers, Hillsdale, New Jersey, 1-3
- Felder R.M. şi Silverman L.K. (1988). *Learning and Teaching Styles in Engineering Education*, în Engineering Education, 78(7), 674-681 (1988).
- Felder, R. M., şi Brent, R. (2005). Understeying student differences. *Journal of Engineering Education*, *94* (1), 57-72.
- Feuerstein, R., Klein, P. S. şi Tannenbaum, A. (1991). *Mediated learning Experience (MLE). Theoretical, psychological and learning implications*, London, Freund Publishing House.

- Fischbein, E.,(1973). *Aspecte ale psihologiei învăţării,* în volumul *„Elevii trebuie învăţaţi cum să înveţe*" (*„Caiete de pedagogie modernă*" nr. 4, Editura Didactică şi Pedagogică, Bucureşti.
- Gagne, R., M., (1975).*Condiţiile învăţării,* Editura Didactică şi Pedagogică, Bucureşti
- Garson, G. D.(2000) (update 05.07.2010). "Multiple Regression"&"Factor Analysis"& "Power Analysis"&"Structural Equation Modelling", în *Statnotes: Topics in Multivariate Analysis.* accesat la 07.05.2010 http://faculty.chass.ncsu.edu/garson/pa765/statnote.htm.
- Gijbels, D., Dochy, F., Van den Bossche, P., şi Segers, M. (2005). Effects of problem-based learning: A meta-analysis from the angle of assessment. *Review of Educational Research, 75* (1), 27-61.
- Gibbs, G. şi Coffey, M. (2004). The Impact Of Training Of University Teachers on their Teaching Skills, their Approach to Teaching and the Approach to Learning of their Students. *Active Learning in Higher Education* ;Vol 5(1), 87–100. ‘
- Golu, P (2001). *Psihologia învăţării şi a dezvoltării,* Editura Fundaţiei Humanitas, Bucureşti.
- Hancock, D,, R. (2007) Effects of performance assessment on the achievement and motivation of graduate students, *Active Learning in Higher Education* 8; 219-231
- Hedges, P., (1999). *Personalitate şi temperament,* Editura Humanitas, Bucureşti.
- Hilgard E.şi Bower, G. (1974). *Teorii ale învăţării,* EDP; Bucureşti.
- Ionescu, M., (2000). Pedagogia universitară, în Ionescu, M., (2000). *Studii de pedagogie aplicată*, Presa Universitară Clujeană, Cluj-Napoca.
- Ionescu, M.şi Radu, I. (coord.)(2001). Didactica modernă, ediţia a II-a, revizuită.Editura Dacia, Cluj-Napoca.
- Jinga, I. , Negreţ, I. (1994). *Învăţarea eficientă,* Editura Editis, Bucureşti .
- Johnson, D., Johnson, R (1991). *A meta-analysis of cooperative, competitive and individualistic goal structures,* Hillrdalle, NJ: Erlbaum.
- Jonassen, D. H. (1991). Objectivism versus constructivism: Do we need a new philosophical, *Journal of Educational Psychology*, 68, 395–407.
- Jurcău, N.(coord.) (2000). *Psihologie Educaţională,* Editura U.T.Press, Cluj-Napoca.
- Jurcău, N. şi Niculescu, R.,M., (2002). *Psihologie Şcolară,* Editura U.T.Press, Cluj-Napoca.
- Kember, D., Biggs, A și Leung, D.Y.P. (1998). The dimensionality of approaches to learning: an investigation with confirmatory factor analysis on the structure of the SPQ and LPQ. *British Journal of Educational Psychology*, *68*, 395-407.
- Kember, D., Wong, A., & Leung, D. Y. P. (1999). Reconsidering the dimensions of approaches to learning. *British Journal of Educational Psychology*, *69*, 323–343.
- Kolb, D. (1984) - *Experiential Learning: Experience as a source of learning and development,* Prentice Hali, Re turn, New Jersey.
- Kolb, D. (1981) - *The Learning Style inventory,* MA: McBer, Boston.
- Kramar,M., (2002). *Psihologia stilurilor de gândire şi acţiune umană,* Editura Polirom, Iaşi.
- Learner-Centered Psychological Principles: A Framework for School Redesign and Reform. (1995), online.
- Leino, A., L., (ed.) (1989). „A Study of Learning Styles", *Research Bulletin,* nr.2 Helsinki.
- Lemeni, G. (2004). *Psihologie şcolară (Note de curs*), Cluj Napoca
- Lemeni, G. şi Miclea, M. (2004). *Consiliere şi orientare. Editura ASCR, Cluj-Napoca,*
- Lemeni, G., Miclea, M., (coord.) (2004). *Consiliere şi orientare – activităţi pentru clasele IX-XII/SAM,* Editura ASCR, Cluj-Napoca.
- Lindblom-Ylänne, S., Trigwell, K, Nevgi, A şi Ashwin, P.(2006). How approaches to teaching are affected by discipline and teaching context, *Studies in Higher Education,* Vol. 31, No. 3, 285–298
- Lonka, K., Olkinuora, E., and Makinen, J. (2004). Aspects and prospects of measuring studying and learning in higher education. *Educational Psychology. Rev*.16(4): 30
- Lammers W. J.şi Murphy J. J. (2002). ‘A Profile of Teaching Techniques Used in the University Classroom: A Descriptive Profile of a US Public University’, *Active Learning in Higher Education* 3(1): 54–67
- Lonka, K., and Ahola, K. (1995). Activating instruction—How to foster study and thinking skills in higher education, *European Journal of Educational Psychology* 10: 351–368.

- Lonka, K. şi Lindblom-Ylänne, S. (1996). Epistemologies, conceptions of learning, and study practices in medicine and psychology. *Higher Education*, 31, 5–24.
- Lindblom-Yl¨anne, S., and Lonka, K. (2000). Dissonant study orchestrations of high-achieving university students. *European Journal of Educational Psychology* 15: 19–32.
- Machemer, P. şi Crawford,P. (2007). Student perceptions of active learning in a large cross-disciplinary classroom, *Active Learning in Higher Education,* Vol 8(1), 9–30
- Marga, A., (2001). *University Reform Today*, Cluj University Press, Cluj-Napoca
- Marton, F.şi Saljo, R. (1984). Approaches to learning. In Marton, F., Hounsell, D., and Entwistle, N. (eds.), *The Experience of Learning*, Scottish Academic Press, Edinburgh, pp. 36–55.
- Marton, F., & Saljo¨, R. (1976). On qualitative differences in learning: 1: Outcome and process.*British Journal of Educational Psychology*, *46*, 4–11.
- Marton, F., Dall' Alba, G. şi Beaty, E. (1993). Conceptions of learning. *International Journal of Educational Research*, 19, 277–300.
- Marton, F., & Saljo¨, R. (1997). Approaches to learnig , în Marton, F., Hounsell, D., şi Entwistle , N., (eds.), The experience of Learning : Implications for Teaching and Studying in Higher Education (2 nd ed.) Edinburgh, Great Britain: Scottish Academic Press, 39-58.
- Mayer, R. E (1996). Learners as information processors: Legacies and limitation of educaţional psychologys second metaphor: *Jurnal of Educational Psychology*, 31, 151-161.
- Masui, C.şi DeCorte, E. (1999). Enhancing learning and problem solving skills: orienting and self-judging, two powerful and trainable learning tools. *Learning. Instruction.* 9, 517–542.
- Mărgineanţu, D. şi Buican, M., (coord.).(1999). *Consiliere şi dirigenţie, Consultaţii,* Vol. I, Editura Eurobit, Timişoara.
- McCarthy, B. (1987). *The 4MAT System: Teaching to Learning Styles with Right/Left Mode Techniques.* Barrington, IL, EXCEL, Inc.
- Miclea, M. (1999). *Psihologia cognitivă. Modele teoretico- experimentale,* Iaşi – Editura Polirom
- Miclea, M. şi Lemeni, G. (1999) *Aplicaţiile psihologiei cognitive în educaţie, articol publicat în Revista Cogniţie, Creier, Comportament,* Editura ASCR.Cluj-Napoca.
- Menderes , A., (2008). A conceptual analyses. *Ştiinţa educaţiei: Theory şi Practice*, 8(3). 707-720.
- Meyer, J. H. F. (2000). The modeling of "dissonant" study orchestration in higher education. *European Journal of Educational Psychology*, 15: 5–18.
- Minnaert, A. şi Van der Hulst, F. (2000, September). *A comparison of the (in)stability of student learning patterns in a traditional versus a student oriented learning environment*. Paper presented at the international conference on "Innovations in higher education 2000,"Helsinki, Finland.
- Moise, C, (1996). *Concepte didactice fundamentale*, Editura Ankarom, Iasi.
- Mureşan, P. (1990). *Învăţarea eficientă şi rapidă,* Editura Ceres, Bucureşti,
- Neacşu, I. (1990). *Instruire şi învăţare,* Bucureşti – Editura Ştiinţifică
- Negovan, V (2007). *Psihologia învăţării*, Editura Universitară, Bucureşti
- Negovan, V., (2001). *Tendinţe de reconfigurare a modelelor de instruire în acord cu evoluţia cunoaşterii despre învăţare*, în Zlate, M., (coord), Psihologia la răspântia mileniilor, Polirom, Iaşi.
- Negreţ-Dobrişor, I., Pânişoară, I.O. (2005). *Ştiinţa învăţării De la teorie la practică*, Editura Polirom, Iaşi,
- Neveanu, P., P., (1978). *Dicţionar de psihologie*, Editura Albatros, Bucureşti.
- Nicola, I.(2000). *Tratat de pedagogie şcolară*, Editura Aramis, Bucureşti
- Perry, W. G. (1970). *Forms of intellectual and ethical development in the college years – a scheme*.
- New York: Holt, Rinehart & Winston.
- Piaget , J. (1970) *Psihologie şi pedagogie,* Bucuresti – Editura Didactică şi Pedagogică.
- Predescu, M.F. *(2007)* Strategiile didactice centrate pe elev în şcolile speciale şi integrate, în Chipea, F. (coord.) *Cultură, dezvoltare, identitate. Perspective actuale,* Editura Expert. Bucureşti,
- Petruş-Vancea, A., Secui, M. şi Roman, D., (2009). Students in acculturation conditions: Learning styles particularities, în *Management and Education*, Volumul V (3), 33-39. Bulgaria

- Pask, G. (1988). Learning strategies, teaching strategies, and conceptual or learning style. In R. R. Schmeck (ed.), *Learning Strategies and Learning Styles*, Plenum, New York, 83–100.
- Phipps, M., Phipps, C. , Kask, S. & Higgins, S. (2001). 'University Students'Perceptions of Cooperative Learning: Implications for Administrators and Instructors', *The Journal of Experiential Education 24*(1), 14–21
- Prosser, M. şi Trigwell, K. (1999) *Understanding learning and teaching. The experience in higher education.* Buckingham: Society for Research into Higher Education/Open University Press. (Buckingham, Open University Press).
- Radu, I., Podar, Preda, V., Druţu, Mare, V., Miclea, M., (1991). *Introducere în psihologia contemporană,* Editura Sincron, Cluj-Napoca.
- Radu, I.T. (1994). *Metodologie psihologică şi analiza datelor,* Cluj-Napoca, Editura Sincron
- Ramsden and Entwistle (1981). Effects of academic departaments on students approaches to studying, *British Journal of Educational Psychology* Vol. 51, 368-383.
- Ramsden, P. (1988). Context and strategy – situational influences on learning. In R. R. Schmeck (Ed.), *Learning strategies and learning styles*, 159–184. New York: Plenum Press.
- Roman, D., (2006). Modele ale stilurilor de învăţare, *Analele Universităţii din Oradea*, Fascicula Psihologie, Vol. 10, 113-130.
- Roman, D. (2005). Relaţia dintre stilul de învăţare, personalitate,cogniţii iraţionale şi performanţă şcolară în adolescenţă, *Analele Universităţii din Oradea, Fascicula Psihologie*, Vol. VIII, pp. 172-186.
- Roman, D. şi Decsei-Radu, A., (2008). Cum învaţă studenţii? Strategii şi stiluri de învăţare la studenţi în Bonchiş, E şi Drugaş, M., (coord.), Volumul Conferinţei Naţionale a Psihologilor Şcolari „*Statutul Psihologului Şcolar – prezent şi perspective*", Editura Universităţii din Oradea, 226-240.
- Roman, D., (2007). Relaţia dintre stilurile de învăţare, inteligenţă şi performanţa academică, în Chipea, Fl., coord., (2007). Volumul Sesiunii de Comunicări Ştiinţifice: *Cultură, Dezvoltare, Identitate. Perspective actuale*, Editura Expert, Bucureşti, 609-620.
- Sava, F. (2004). *Analiza datelor în cercetarea psihologică,* Editura ASCR, Cluj-Napoca.
- Sălăvăstru, D. (2004). *Psihologia educaţiei,* Editura Polirom, Iaşi.
- Secui, M, (2007) .Teoria învăţării sociale. În Secui, M, (2007). *Identitatea de gen în adolescenţă,* Editura Universităţii din Oradea,
- Schatteman, A., Carette, E., Couder, J. şi Eisendrath, H. (1997). Understanding the effects of a process-oriented instruction in the first year of university by investigating learning style characteristics. *Educational Psychology.* 17,:111–125.
- Shuell, T. J. (1993). Toward an integrated theory of teaching and learning. *Educational Psychologist, 28*,291–311.
- Shuell, T. J. (1996). Teaching and learning in a classroom context. In Berliner, D. C., and Calfee, R. C. (eds.), *Handbook of Educational Psychology,* Simon & Schuster Macmillan, New- York, 726–764.
- Simons, P. R. J. (2000). Towards a constructivistic theory of self-directed learning. In Simons, R. J., Van der Linden, J., şi Duffy, T. (Eds.). (2000). *New Learning.* Dordrecht,The Netherlands: Kluwer Academic Publishers.
- Stan, C., (2000). *Autoevaluarea şi evaluarea didactică,* Editura Presa Universitară Clujeană, Cluj-Napoca.
- Sternberg, R.și Williams, W., (2002), *Educaţional Psychologyst,* Allyn and Bacon,
- Trif, F (2007). *Programe de instruire online pentru cadrele didactice*, Teză de doctorat, susţinută în cadrul Catedrei de psihologie, UBB.
- Trigwell, K. (2002) Approaches to teaching design subjects: a quantitative analysis, *Art, Design and Communication in Higher Education,* 1, 69–80.
- Trigwell, K. şi Prosser, M. (2004). Development and use of the Approaches to Teaching Inventory, *Educational Psychology Review,* 16, 409–424.
- Trigwell, K. (1995). Increasing faculty understanding of teaching. In W. A. Wright *et al*. (Eds.),
- Trigwell, K. şi Prosser, M. (1991). Improving the quality of student learning: The influence of learning context and student approaches to learning on learning outcomes, *Higher Education,*.22, 251-226.

- Trigwell, K., Prosser, M. şi Waterhouse, F. (1999) Relations between teachers' approaches to teaching and students' approach to learning, *Higher Education*, 37,73–83.
- Trigwell, K., Prosser, M. şi Ginns, P.,(2005). Phenomenographic pedagogy and a revised *Approaches to teaching inventory Higher Education Research şi Development*
- Tait, H. şi Entwistle, N. J. (1996). Identifying students at risk through ineffective study strategies. *Higher Educ.* 31, 97–116.
- Theophilides, C. (1997, August). *Freshmen students' reactions to constructivist approaches to learning and to process-oriented instruction*. Paper presented at the 7th Conference of the European Association of Research on Learning an Instruction (EARLI), Athens,Greece
- Trigwell, K., Prosser, M. şi Waterhouse, F., (1999). Relations between teachers' approaches to teaching and students' approaches to learning. *Higher Education.* 37, 57–70.
- VanderStoep, S. W., Pintrich, P. R. şi Fagerlin, A. (1996). Disciplinary differences in self-regulated learning in college students.*Contemporany Educational Psychologist*, No.21,. 345-362.
- Vermetten, J. Y., Vermunt, J. D., and Lodewijks, H. G. (1999). A longitudinal perspective on learning strategies in higher education – different view- points towards development, *British Journal of Educational Psychology*, Vol. 69, No. 2, 221- 242.
- Vermetten, Y. , Lodewijks, H., şi Vermunt., J., (1999). Consistency and variability of learning strategies in different university courses, *Higher Education*, Vol.37, No. 1, 1-21 .
- Vermunt,J.D. (1992). Learning styles and Regulation of Learnig in Higher Education-Towards Process-oriented Instruction in Autonous Thinking. Amsterdam: Swets şi Zeitlinger
- Vermunt, J. D. (1994). *Inventory of Learning Styles in higher education: Scoring key*. Tilburg University, Department of Educational Psychology.
- Vermunt, J. D. (1996). Metacognitive, cognitive and affective aspects of learning styles and strategies: A phenographic analysis, *Higher Education*, Vol. 31, 25-50
- Vermunt, J. D.şi Verloop, N. (1999). Congruence and friction between learning and teaching *Learning and Instruction*, Vol. 9, 257-280.
- .Vermunt, J. D. (1998). The regulation of constructive learning processes, *British Journal of Educational Psychology*, Vol. 68, 149-171
- Vermunt, J. D. (2003). The power of learning environments and the quality of student learning.In de Corte, E., Verschaffel, L., Entwistle, N., and Van Merri¨enboer, J. (eds)., *PowerfulLearning Environments: Unravelling Basic Components and Dimensions*, *Advances in Learning and Instruction Series*, Pergamon, Oxford, 109–124.
- Vîgotsky, S. L. (1971) *Problema învăţării şi a dezvoltării intelectuale la vârsta şcolară,* Bucureşti - Editura Didactică şi Pedagogică
- Volet, S., McGill, T., and Pears, H. (1995). Implementing process-based instruction in regular university teaching: Conceptual, methodological and practical issues. *Eur. J. Psychol. Educ.* 10: 385–400.
- Winne, P.H.,(1995). „Inherent Details in Self Regulated Learning" *Educaţional Psychologist*, nr.30 (4), Laurence Erlbraum Associates Publishers, Mahwah, New Jersey, 173-187
- Woolfolk, A.E., (1998). *Educational Pychology*, Allyn & Bacon, Boston, London Toronto, ed- a 7-a .
- Wierstra, R. F., Kanselaar, G., Van der Linden, J. L., Lodewijks, H. G., şi Vermunt, J. D. (2003). The impact of the university context on European students' learning approaches and learning environment preferences. *Higher Education.* 45: 503–523.