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Approach to learning process: superficial learning and deep learning at students

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Abstract

The forms of learning are varied, among them we could count superficial and deep learning. The theme proposed is an extension of our doctoral research concerns in Educational Sciences, concerns regarding learning activity as an activity under a continuous process of restructuring/reconsideration, through the influence of the new postmodern paradigms in education. Based on the comparison of the two forms, we find that each is associated with other forms of learning, which emphasizes polarities in the approach or orientation of the learner in this process.

The paper aims to analyze specific student learning through the solid learning requirement because at such a level of education, the person may realize his full potential for learning. The higher education has different purposes and requirements comparative to other stages of the education and, therefore students have to adapt to these.

1. Paper rationale

A key issue in the forms of learning is the learning approach, resulting in deep learning and surface learning. Dumitru [1] provides a summary of forms of learning classified by: the involvement degree of the learner (natural learning, formal/school/academic learning, personal learning), by efficiency (efficient, inefficient), according to the organization (institutional, non-institutionalized), the degree of independence of the learner (dependent on others, self-directed/independent); the number of those involved (individual, group, society), as intentionality (latent/implicit, manifest/express); the degree of awareness (mechanical or logical); by the way of assimilation the new (through perception, through discovery), by purpose (maintain learning, innovative). From this classification we

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could grasp closeness between superficial and mechanical, maintaining learning, between deep learning and logical learning, or, even more, innovative one.

One of polar learning styles analysis Robotham [2], 1999, indicates learning styles with a high or low efficiency or quality, between them including deep learning and superficial learning (Table 1).

Table 1. Polarities of learning styles

Representatives	Styles with a high quality	Styles with low quality
Witkin et al. (1977)	Independent by field	Dependent by field
Ausubel et al. (1968)	Meaningful learning	Learning meaningless
Goldman, Warren (1972)	Logical training	Concrete retrieval
Wittrock (1986)	Generative Processing	Reproductive processing
Pask (1976)	Understanding by learners	Operation by learners
Marton, Saljo (1976)	Deep learning	Superficial learning
Biggs (1978)	Transformative learning	Reproductive learning
Svensson (1977)	Holistic learning	Atomistic learning
Schmeck (1983)	Deep processing	Elaborative processing
Thomas, Bain (1984)	Transformative learning	Reproductive learning

An important point of departure in addressing these guidelines that students choose for learning achievement is Carré analysis [3], which highlighted the crucial role of "representations about the future", the "learning project" of "pro-activity" (understood as engaging in the self-determined act), the "control" and "meta-cognitive activities" in handling elements of intentional dynamics.

As a process, academic learning requires active participation, construction and reconstruction, integration and reintegration of cognitive and action structures, an activity which requires high quality activity. Enswistle, 1988, as cited Negovan [4] shows that there are differences between students depending on their orientation: to reproduction, resulting in a superficial approach to learning; to meaning, leading to a deep approach to learning and acquisition, as the approach in terms of successful learning.

It then outlines our arguments and options for overcoming superficial learning and applying a deep learning. We believe that such learning meets the requirement of the scroll progressive learning stages: receiving and recording material due to a brain states of awareness; understanding and generalization by forming concepts and principles; fixing memory while preserving and storing knowledge information; updating by reproduction of acquisitions and transfer. Moreover, those who instruct and learners must meet gradualness of this process Jude [5]: accommodation; assimilating rapidly, relative stagnation (the cognitive saturation occurs and it takes more volunteer effort and diversification of methods and means to reactivate interest); intensive learning.

Both Light and Cox [6] showed that during stages that the learner goes through, there are certain times or intervals: a) between update and understanding; b) between understanding and skill; c) between ability and willingness; d) between desire and what is presently; e) between what is now and what is about to change.

It follows that a deep, thorough learning - cover these hiatuses between the actions above. One solution in this case is an appeal to meta-cognition, which allows fixing faults or deficits in the learning process, as shown for many authors "finding unproductiveness ".

2. Paper theoretical foundation and related literature

Researches on derived forms from different ways of approaching learning ("deep" and "superficial") owned by Herlin and Albrecht [7] by: Marton and Saljo, 1975, 1984, Entwistle and Ramsden, 1983. The two approaches to learning are characterized by certain elements:

- superficial learning: lack of personal connections, memory, lack of reflection;
- profound learning: reports / personal ties, understanding links, reflections on the meaning.

Self-evaluation on learning activity can be realized both in relation to goals, standards, ascertaining the effectiveness and on the resources invested, observing efficiency. Self-efficacy, Bandura [8] is the own faith of the ability to perform at a certain level. These beliefs have generative effect, causing engagement in learning a new sequence. Unlike self-efficacy as a picture of the relationship between proposed and realized goals, own effectiveness (self-efficiency) involves beliefs, judgments on the use of resources against objectives achieved. Sources of feedback are: previous experience, observation of other models (vicarious learning), and physiological and psychological state introspection, self-persuasion. Finding their effectiveness and efficiency will be effective motivator for further action, which is learning perseverance, commitment.

Constructivist perspective on learning, Joița [9] is also a landmark in deep learning approach, meaning that, for developing capacities of understanding, critical interpreting , skills to solve real-life situations, it must be emphasized more practical side of activities with students, to create the conditions necessary for them to learn how to learn, valuing the experience by analyzing concrete examples, by putting in situation, by encouraging the formulation of hypotheses, solutions, value judgments.

3. Methodology

Overcoming intuitive choices, self-management is the process of driving the learning, applied primarily in diagnosing their own learning needs, formulating goals, identifying human and material resources, choosing and implementing appropriate learning strategies, evaluating and adjusting learning outcomes.

By the research efforts during doctoral studies on a sample of students attending the Universities of Craiova, Bucharest, Constanta, Timisoara, between 2006-2009 (total 425 subjects), who were preparing to be teachers of Geography, Mathematics, Informatics, I planned and checked the possibility that self-management of students learning be applied, if their orientation in the problem of choosing effective learning methods is done systematically and if stimulating motivation, practicing emotional and voluntary control applying self-evaluation are realized , these being actions which can contribute to learning effectiveness. The main research methods were: observation, analysis of curricular documents, reflection technique or learning journal, questionnaire-based survey, psycho-pedagogical experiment, the focus group, evaluation checks, case study. Data processing and interpretation were performed both qualitatively and quantitatively via the SPSS (Statistical Package for the Social Sciences).

From the ample results obtained, we chose to present in this study those about superficial and deep learning. We gave an important role to improving interventions, within the formative experiment – within the experimental group students discussed their own learning practices, they have reflected on them and have applied intentionally actions of self-management of learning.

Concrete results that are selected in the following have been selected/marked through observation and discussions with students. After the experiment, we used a questionnaire-based survey to know the perception of students on the effectiveness of their learning, and in this case, we focused on quantitative interpretation, calculating percentages and qualitative analysis of the responses of the sample students to some questions (open or closed or choice type) of the questionnaire related to the chosen and used way of learning.

4. Results

Results of the investigation of the research action carried out by us on the students [10] showed us that student learning is determined by many factors including: previous results, experiences related to learning, reporting to the results obtained, desire for self-realization, prestige acquired through learning, intrinsic motivation, educational ideal, attitudes towards self, attitude (positive) towards learning, attitudes towards work and training; moral traits of character, willingness to learn, reporting to social requirements, to values of contemporary society etc. In learning occur, causing inter-individual differences, factors such as health, hereditary dowry, maturity level, age, gender, social background, level of anxiety, self-image, temperamental type, extrovert-introvert orientation of temperament, skills study, the cultural level, social skills. An essential role have habits and study skills, such as those establishing realistic goals for learning, superficial or deep approach to tasks, learning to use different forms of reinforcement, time organization, structure and approach material , for review. Regarding option for deep learning, this choice results from a complex of factors related to attitudes to learning and work motivation behind this process (Table 2).

Table 2. Taking responsibility for learning (self-declared level)

Levels	Experimental Group		Internal Control Group		External control group		Experimental group-internal control group differences	Trends experimental group
	Nr.	%	Nr.	%	Nr.	%	%	‹ ≈ ›
Very much	43	31.9	25	18.5	53	34.2	*+13.4*	›
Much	70	51.9	80	59.3	57	36.8	*-7.4*	‹
Average	6	4.4	10	7.4	20	12.9	*+3*	›
Less	2	1..5	2	1..5	8	5..2	*0*	
Very little and no	6	4.4	12	8..9	16	10.3	*-4.5*	‹
Unresponsive	8	5..9	6	4.4	1	.6	*+1.5*	≈
Total	135	100.0	135	100.0	155	100.0	—	—

The table above presents some results on level of assumption responsibility in learning. In the experimental group improving their accountability to student learning was achieved by stimulating the reflection and adjustments on their motivation for learning (sufficient or insufficient), the correct allocation of efficiency or inefficiency factors, establishing goals, activities, tasks and delimitation of internal and/or external reasons of learning, while on the students in the control group did not intervene internally and externally. Landmarks that students have practiced for deep learning were: to prepare themselves for lecture and seminar activities, pursue interventions colleagues, engage in debate, to argue their ideas, be logical, to identify the links between theory and practice or other connections, to (re) structuring contents, establish hierarchies, solve tasks, to focus, to overcome obstacles, develop new ideas, to adopt decisions. In the case of assuming the responsibility in learning, there is significant difference between the two groups with a higher assumption for experimental sample.

5. Discussions

Learning strategies contribute not only to understanding how learning occurs and its regulation, but also to achieve understanding during learning, improve concentration, emotional control application, to motivational and

voluntary support. Should not be neglected difficulties in achieving understanding, this process requiring sustained effort, effort which diminishes itself by practicing. After self-organization of learning, students felt that the most difficult action is to anticipate the results, performances, and within monitoring study, transfer and innovation. With qualitative responses, students indicated that satisfaction depends by obtained performance and engagement in learning can not be assumed unconditionally: students appreciate that some elements, some components of disciplines have no practical utility for the future, while professional life will requires other knowledge and skills.

Learning goals are correlated with professional achievement, and the elements necessary to obtain skills in this category involve learning perseverance to reach acquisitions in time. If in the control sample, most objectives refer to the accumulation of knowledge, being specific to immediate terms, in the experimental sample the self-proposed goals of students were focused on skills, capacities, competencies that develop over time.

Not eventually, to students in the experimental sample, by drawing reflections on self-realization, the insight into designing learning outcomes overcomes quantitative aspect (note) and tendency to focus on evaluation.

6. Conclusions

The solution of applying meta-cognition in the learning achieved by students has proven useful in achieving deep learning, moreover, this leverage, which teachers can develop with students contributes to a better grasp of knowledge and how to build them so that they can be learned by transfer and not mechanical memory. Also, meta-cognition and support in learning influence the effectiveness of solving tasks autonomously; becoming a factor in learning motivation, emotional control, assigning results and forming self-esteem, which leads to reconsideration of personality in many areas (cognitive, moral, aesthetic, professional).

The higher education has a different way of organising its contents, the teaching and assessment methods are different or have a different way of applications. All these things influence the way in which students design and realize learning.

From the point of psychic development it is considered that during youth, all the psychic process, phenomena and activities can be used at the maximal level. We consider that teacher can guide the students through learning activity in order to understand the way in which learning is made by students, to understand the differences between different students categories (young and adults) or the differences in learning determined by the specificity of the study field. Such learning highlights self-generative component of learning: a number of factors involved in learning will influence the quality of learning as a product and the perception of self-efficacy and self-efficiency will influence students' desire to learn further.

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