

HOW TO USE THE MODEL OF EXPERIENTIAL LEARNING IN TEACHING DISCIPLINES WITHIN THE FIELD OF AGRICULTURAL SCIENCES

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Abstract: *The present study aims primarily at analyzing a learning model that can be successfully applied in higher education when teaching disciplines in the field of agricultural sciences. Secondly, the study has as a purpose the exemplification of modalities in which this model may be applied, mainly in seminar and laboratory activities belonging to higher education. Based on the decisive part of personal experience in the learning process, Kolb has elaborated one of the best known models of experiential learning. Based on these premises, the author proposes a cyclic model, according to which learning implies progressing through four stages: concrete experience, reflective observation, abstract conceptualisation and active experimentation. As it offers an explanation concerning the processuality of human learning, the model stands as a land mark for the practitioners of university education, towards designing instruction strategies to meet the students' needs and preferences.*

Key words: *differentiated instruction; experiential learning; teaching strategies; learning styles.*

INTRODUCTION

Under the circumstances where the university education promotes the focusing on the student and the building of transversal and professional competences, the differentiated instruction represents, in our opinion, an adequate modality to meet the students' different needs regarding learning and development. According to Ann Tomlinson (apud GOODNOUGH, 2010), the *differentiated instruction* represents an approach to organize teaching and learning so that they have the potential to offer the educated individuals a variety of options for learning that satisfy the different levels of training, interests and different learning styles.

There is a vast amount of literature regarding „differentiation” and multiple modalities of accomplishing that, meaning that various specialists confer different connotations to this concept (STRADLING & SAUNDERS, 1993). In those authors' opinion, the following differentiation modalities are feasible in the context of a real curriculum: differentiation through learning tasks; differentiation by results (products); differentiation through learning tasks; differentiation by rhythm or learning rate variation. LANDRUM & MCDUFFIE (2010), consider that differentiation typically associates with 3 aspects: contents modification; process modification; products modification. Aligned with these ideas, TOMLINSON (2001, APUD HALL, STRANGMAN & MEYER, 2003) identifies 3 curriculum elements which may be differentiated: the delivered content; the process of teaching the content; the expected product of learning.

TOMLINSON (2000) has reached to the conclusion that the differentiation of the instructive-educational activity is performed mainly as against the students' interests and *learning styles*; having in view the large number of the students involved in higher education, we think that the differentiated instruction upon learning styles is characterized by a higher efficiency in comparison with instruction according to students' interests. In the same order of ideas, LANDRUM AND MCDUFFIE (2010) consider that the process of differentiated instruction

typically includes the focusing on the *learning profile* of the educated individuals. Recent studies in the area of Psychology of Learning reveal the fact that adults are people whose *learning style and rhythm* is stabilized (NEGOVAN, 2007), aspect which imply the observance and reevaluation of the inter-individual differences within the university instructive activity. Corroborating the specialists' arguments, we think that a feasible modality of differentiating instruction at the higher education level is represented by differentiation according to the personal learning styles.

As Dunn mentions (in SHAUGHNESSY, 1998), the *learning style* stands as the specific manner in which a person concentrates upon new information or abilities, processes those, integrates and remembers them in different contexts. According to the author, the learning style comprises a combination of psychological, social, emotional, physiological and environmental elements which allow the individual to interiorize, store and use the knowledge (DUNN, 1983, APUD LANDRUM AND MCDUFFIE, 2010). Among the multitude of learning style models recorded in the specialty literature (DUNN AND DUNN, 1993; FELDER AND SILVERMAN, 1988; GREGORC, 1979; KOLB, 1981), NILSON (2010) considers that one of the most popular, easy to apply and relevant ones for the higher education is the experiential model elaborated by D. Kolb. Leaving from these theoretical premises, we will further focus on this model, and show concrete modalities to apply it when teaching disciplines in the area of agricultural sciences.

THE MODEL OF EXPERIENTIAL LEARNING ELABORATED BY KOLB

KOLB (1981) has started from the assumption that learning is a continuous process in which the person's knowledge and abilities are shaped and developed according to the nature of the experiences in which he or she is involved. Thus, learning comes as the result of living a personal experience, in which reflection and active experimenting are combined. Based on those premises, the author is proposing a cyclic model, according to which, learning presupposes the covering of four stages: concrete experience, reflexive observation, abstract conceptualization and active experimentation.

Learning begins when the person is involved in a new, concrete experience, and this presupposes the interaction with the environment. A particularly important stage follows, namely reflection, which include the investigation and analysis of the past experience, from different perspectives. Reflection is considered crucial for the learning activity, as it lays at the basis of understanding, which will be completely accomplished during the stage of abstract conceptualization. This is the moment when the individual, through analysis and conceptualization, succeeds in understanding the past experience and, based on that, is capable to issue personal ideas and realize the integration of new knowledge in the context of that previously acquired. The achievement during this stage conditions the passage to the final moment, that of the active experimentation of new acquisitions, a moment in which decisions are taken regarding the ways of action and the modalities of solving some real problems, and the transfer of knowledge is realized that way.

The cycle of learning continues, starting from a higher level, through involvement in a new learning experience, and by using previously gained acquisitions. As FRY, KETTERIDGE AND MARSHALL (2003) show, the passing through the experiential cycle does not refer solely to the active involvement in a learning experience, but presupposes reflection, processing and understanding the information, along with performing a qualitative leap which will be reflected in the approach of ulterior problems. In the academic context, professors should be aware that the passage through these stages is not performed naturally by all students, and that it may become difficult because of the appearance of some blockages, such as blockages at the level of one of the stages and the incapacity to surpass that, failure in accomplishing a specific task

or the superficial approach, with the omission of some important stages. As a consequence, when planning the didactic stages, teachers should take into account the psycho-individual particularities of the students, the nature of the discipline of study, and also the students' preferences for a certain way of approaching the issues. The preference for a certain way of approaching the learning stages, along with the activated strategies to solve the issues circumscribes the learning style of each student.

Based on the previously described conceptual model, WOLF AND KOLB (1984, APUD FRY, KETTERIDGE AND MARSHALL, 2003) have defined four learning styles that result from the combination of the dominant learning abilities: convergent, divergent, assimilator, accommodator (Table1).

Table 1.

Learning styles (Wolf and Kolb, 1984, apud Fry, Ketteridge and Marshall, 2009)

Learning styles	Strengths	Dominant learning abilities
CONVERGENT	He/she puts the ideas into practice	Abstract conceptualization Active experimentation
DIVERGENT	Imaginative capacities Generator of ideas	Concrete experience Reflexive observation
ASSIMILATOR	He/she creates theoretical models He/she synthesizes the results of observations	Abstract conceptualization Reflexive observation
ACCOMMODATOR	He/she elaborates plans and tasks that presuppose new experiences	Concrete experience Active experimentation

EXAMPLES OF USING THE EXPERIENTIAL LEARNING MODEL IN TEACHING DISCIPLINES WITHIN THE FIELD OF AGRICULTURAL SCIENCES

In order to adequately answer the different learning styles, the specialists in the field of university didactics have elaborated a set of useful recommendations in order to plan some flexible and differentiated didactic strategies to adequately meet students having different learning styles. NILSON (2010) has elaborated a relevant synthesis of the most adequate instruction modalities for each learning style, based on the studies of some acknowledged researchers. Leaving from this synthesis and from the recommendation of specialists in the area of agricultural sciences (ORBOI & HURMUZACHE, 2013), we further present some suggestions regarding the application of the differentiated instruction model in teaching disciplines belonging to the area of agricultural sciences; we will refer to three main themes: The Typology of Agricultural Units; The System of Production (culture of plants and breeding animals); Contemporary Systems of Agriculture Production.

Examples of learning activities for the convergent style:

- The identification of laws which establish the agriculture property in Romania;
- Solving problems regarding: the average productions at different crops; the size of exploitation for different farms; the identification of production and economical-financial costs in certain agriculture units;
- Investigations regarding the contemporary systems of agriculture production.

Examples of learning styles for the divergent style:

- Designing group projects regarding the types of agriculture units;
- The graphical representation of the system of production (the plants culture and animal breeding);

- Writing essays and papers on the contemporary systems of agriculture production

Examples of learning activities for the assimilator style:

- Drawing conceptual maps regarding the typology of the agriculture units;
- The analysis of divers production options concerning the cereals cultures;
- Synthesizing of the defining notes of the contemporary systems of agricultural production.

Examples of learning activities for the accommodator style:

- Brainstorming with a view to the main characteristics of each type of agriculture unit;
- Underlining the advantages and limits of each system of production (culture of plants and animal breeding);
- Characterizing a contemporary system of agriculture production.

CONCLUSIONS

As it offers an explanation concerning the processuality of human learning, the model stands as a land mark for the practitioners of university education, towards designing instruction strategies to meet the students' needs and preferences. In this respect, we think that in order to increase the efficiency of the learning process, within the instructional-educational context, professors may resort to the differentiation of instructional strategies according to the students' learning styles, as a way to empower the students to learn by using the preferred modalities of perception and processing the information.

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