

STUDENTS' PERSPECTIVE REGARDING THE NECESSITY AND OPPORTUNITY OF USING THE DIFFERENTIATED INSTRUCTION IN HIGHER EDUCATION

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Abstract: *Within the context of higher education, the differentiated instruction may be considered as a way to approach the instruction focusing on the educable and his or her learning activities, by offering a variety of learning opportunities to a group of students who present differences regarding the training level, interests and learning profiles. We propose a cross-sectional study that has been accomplished on a sample of 128 students attending the courses of a Romanian university of agricultural studies. The data was collected using the questionnaire-based investigation. According to the obtained results, we consider that the usage of differentiated instruction in workshop and laboratory activities would consistently improve the students' academic results and would intensify the intrinsic learning motivation.*

Key words: *differentiated instruction, higher education, learning needs.*

1. Introduction

In a world of diversity and creativity, the paradigm of one-size-fits-all instruction is less and less justified, from the perspective of both teaching, and learning or evaluation.

Differentiated instruction represents a modern approach of instruction, which is meant to be based on understanding, respect and the revaluation of differences between the educable. Born as an alternative to the classical, one-size-fits-all instruction, this new approach aims at reevaluating each student's potential, starting from each one's training level, learning profile, interests and skills. The driving aim of differentiated education is that of maximizing the chances of success and individual progress for each student, starting from the level he or she owns at one point or another.

Studies around this theme showed that the paradigm will bring significant contributions to the improvement of quality in the instructive-educational process. Thus, certain research has proved that the application of differentiated instruction positively affects

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students' academic results (Ford & Chen, 2001; Nicholls, 2002; Arthurs, 2007; Rogers, 2009; Chamberlin & Powers, 2010). Also, a differentiated didactic activity has led, in some cases, to the increase of intrinsic motivation for learning (Tomlinson, 1999; Bell, 2007; Danzi, Reul, & Smith, 2008; Rock, Gregg, Ellis, & Gable, 2008; Tulbure, 2010). Differentiated instruction has a positive impact upon the learning activity through: the students' active involvement, the structuring of the teaching activity according to students' interests, students gaining responsibility regarding the own process of development and training and by creating various opportunities of interaction with teachers and colleagues.

The differentiation of instruction may be realized in comparison with the key-elements of curriculum and evaluation (Wan, 2015): contents; process of instruction; learning products; learning environment and evaluation process. We think that the most adequate ways of instruction in higher education are related to the teaching-learning process, and the products of instruction and learning environment. We consider that the teacher is able to create an academic environment which will meet the differences between students by: preparing some learning tasks that can be differentiated according to the students' interests, level of training and learning styles; by offering various possibilities to express the acquired products (papers, projects, essays, case studies etc.); by providing diversified didactic materials along with the possibilities to choose the way to use them; by diversifying the didactic methodology and identifying the most adequate teaching techniques for each category of students.

Leaving from those elements, the present study aims to identify the students' opinions concerning the opportunity and necessity to use differentiated instruction in the didactic process of higher education. Secondly, we wish to analyze the relationship between the degree of familiarity of students with this differentiated approach and the measure in which they consider it necessary and opportune. We consider that such a study would outline an image over the necessity to apply the differentiated instruction at the level of higher education, and also a reflection of the advantages such an approach would bring to the educational practice.

2. The Hypothesis and Objectives of Research

The research aims at two objectives:

- Identify the students' opinion regarding the necessity to use differentiated instruction in the university didactic activity;
- Identify the opportunities and advantages offered by differentiated instruction, from the perspective of 1st- year students.

Having in view these objectives, we aimed at testing the following hypothesis: the more students are familiarized with differentiated instruction, the more highly they evaluate the necessity and opportunity of differentiated instruction.

3. Methodology

3.1. Procedure

The research is a quantitative one, of a transversal type. The investigative process was carried out during the second semester of the academic year 2015-2016. Each student

included in the target group filled in an opinion questionnaire, with the guarantee of confidentiality of responses. For the statistical processing of data, the SPSS 17.0 program was used. In order to reach the objectives and verify the research hypothesis, descriptive and correlation analyses were performed.

3.2. Participants

The study included a group of 128 students enrolled in the 1st year of study, who enlisted to 6 faculties of a Romanian university providing agronomic studies. Under the aspect of genre, the batch included 80% girls ($N = 102$) and 20% boys ($N = 26$). The students' ages ranged between 18 and 34 years old ($M = 19.93$; $SD = 1.91$). As for the faculty they attend, the students are distributed as follows: 36% from the Faculty of Agricultural Management; 26 % from the Faculty of Food Technology; 17% from the Faculty of Agriculture; 11% from the Faculty of Zootechnics; 5% from the Faculty of Veterinary Medicine; 5% from the Faculty of Horticulture.

3.3. Measures

In order to collect the data, we used the method of questionnaire-based investigation; the questionnaire of opinion used as a tool included closed, pre-coded questions, each answer being appreciated on a scale from 1 to 5, where 1 means total disagreement, and 5 means total agreement. From a total of 21 items of the questionnaire, the first ten aimed to identify the students' opinion regarding the necessity to use differentiated instruction in the didactic activity. The next 10 questions referred to the opportunities and advantages which would follow the usage of differentiated instruction in didactic activities. The last item aims to determine the degree of students' familiarity with the paradigm of differentiated instruction, by using the same scale from 1 to 5, where 1 means not at all familiarized, and 5 means highly familiarized.

4. Results and Discussion

4.1. The Results regarding the Necessity of Differentiated Instruction

The first direction of research was oriented towards the necessity of differentiated instruction in students' vision. The results regarding the students' opinion over the necessity of differentiated instruction are synthesized in Table 1. We notice that, in students' opinion, the usage of differentiated instruction would be necessary during the seminar/laboratory and practice activities. Students probably face the disadvantages of one-size-fits-all instruction during these categories of activities; they think that it would be more adequately to use the two types of instruction in a combined way. Also, the quality of learning is a strong argument in favor of differentiated instruction, the students think that this type of instruction would meet the different learning needs of students in a better way and would allow each student to learn in its own rhythm. The element which stimulates and facilitates the learning activity is motivation. As we understand from the students' answers, differentiated instruction is also necessary in order to raise the learning motivation; the students are more open to learning if what is taught has in view the inter-individual differences.

The necessity for differentiated instruction

Table 1

Differentiated instruction is necessary	Mean	SD
During the course activities	2.89	1.07
During the seminar/ laboratory activities	3.46	1.04
During the practice/field activities	3.27	1.13
To be combined with the one-size-fits-all instruction	2.91	1.08
To meet in a more adequate way the students' interests	2.93	.98
To meet in a more adequate way the students' different learning needs	3.36	1.04
For each student to learn in his or her own rhythm	3.00	1.01
To raise the learning motivation	3.26	1.01
To diversify the didactic strategies	2.85	1.06
To approach the subject matter in a more attractive way	3.00	1.03

Another argument in favor of differentiated instruction is related to the approach of the subject matter in a more attractive way, by using some differentiated didactic strategies to stimulate the interest in knowledge, discovery, reflection and learning.

4.2. The Results regarding the Opportunity for Differentiated Instruction

The second direction of research focused upon the opportunity and advantages of differentiated instruction. The synthesis of results regarding these aspects is displayed in Table 2.

In students' opinion, the main advantages and opportunities provided by differentiated instruction are represented by the achievement of better academic results and higher intrinsic motivation for learning. These results are also supported by other scientific studies which showed that differentiated instruction have a contribution to the increase in learning motivation (Tomlinson et al., 2003; Danzi, Reul, Smith, 2008;

The opportunity for differentiated instruction

Table 2

Differentiated instruction used in higher education	Mean	SD
Leads to better academic results	3.41	.98
Offers each student the possibility to learn according to his or her learning preferences and needs	3.29	1.03
Increases interest in learning	3.03	1.02
Motivates the students intrinsically	3.33	1.03
Motivates the students extrinsically	2.88	1.09
Facilitates the understanding of concepts	3.16	1.27
Provides an adequate frame to apply the knowledge	3.30	1.06
Develops the capacities of analysis, synthesis, evaluation	3.00	1.02
Involves actively the students in learning	3.28	1.02
Develops abilities for team work	3.00	.98

Rock, Gregg, Ellis, Gable, 2008) and, implicitly, to better academic results (Ford & Chen, 2001; Tulbure, 2010). An advantage for students is also the fact that differentiated instruction meets their different learning styles, by offering each student the possibility to learn according to his or her learning preferences and needs. There are a multitude of scientific studies which support the benefits of differentiated instruction for the students' learning styles (Beck, 2001; Arthurs, 2007; Nilson, 2010).

As for the cognitive capacities, students think that differentiated instruction contributes to a better understanding and application of knowledge and develops superior cognitive capacities, such as the analysis, synthesis and evaluation. Since differentiated instruction belongs to the constructivist paradigm of instruction, the accent will naturally fall on the development of higher cognitive capacities in students.

In students' opinion, differentiated instruction offers them the great opportunity to actively involve in their own learning process, and also to cultivate their work team abilities. This aspect is underlined also by other scientific studies in the domain, which show that with a differentiated approach, students involve actively in building their own knowledge by interacting with the environment and others (Draper, 2002).

4.3. The Results regarding the Relationship between the Degree of Familiarity with Differentiated Instruction and the Degree of Evaluation of its Indicators

In order to test the hypothesis of research we analyzed the relationship between the students' degree of familiarity with differentiated instruction and the evaluation indicators of this paradigm. The results concerning the correlation analysis between familiarity and necessity are presented in Table 3.

Table 3

The relationship between the degrees of familiarity and the necessity indicators of differentiated instruction

Degree of familiarity/ necessity	r	p
During course activities	.08	NS
During seminar/laboratory activities	.52	< .01
During practice/field activities	.48	< .01
To be combined with one-size-fits-all instruction	.03	NS
To meet in a more adequate way the students' interests	-.13	NS
To meet in amore adequate way the students' different learning needs	.72	< .01
For each student to learn in his or her own rhythm	-.13	NS
To increase learning motivation	.54	< .01
To diversify didactic strategies	-.03	NS
To approach the subject matter in a more attractive way	-.06	NS

We noticed the existence of statistically significant correlations between the extent in which students are familiarized with differentiated instruction and certain necessity indicators of this approach. Thus, there is an emphasis on positive, strongly significant correlations between the degree of familiarity and the necessity to use differentiated instruction during the seminar/laboratory ($r = .52$; $p < .01$) and practice/field activities

($r = .48$; $p < .01$). Also, the more students declare they are familiarized with differentiated instruction, the more they consider it necessary for the reevaluation of different learning needs ($r = .72$; $p < .01$) and for the increasing of learning motivation ($r = 0.54$; $p < 0.01$). The results indicate good self-knowledge next to the students, so they reflect the accurate perception upon the inter-individual differences and the way in which these could be reevaluated in a constructive way during the didactic process.

The results of the correlation analysis between the degree of familiarity and the indicators of opportunity for differentiated instruction are synthesized in Table 4.

Table 4

The relationship between the degree of familiarity and the indicators of opportunity for differentiated instruction

Degree of familiarity/ opportunity	r	p
Leads to better academic results	.65	< .01
Offers each student the possibility to learn according to his or her preferences and learning needs	.41	< .01
Increases interest in learning	.05	NS
Motivates students intrinsically	.48	< .01
Motivates students extrinsically	.06	NS
Facilitates the understanding of concepts	.20	< .05
Provides an adequate frame to apply the knowledge	.45	< .01
Develops capacities of analysis, synthesis, evaluation	.08	NS
Involves actively the students in learning	.67	< .01
Develops abilities for team work	.11	NS

Positive, highly significant correlations were also registered regarding the indicators belonging to the opportunity of differentiated paradigm. More precisely, a high degree of knowing this approach associates with the students' becoming awareness of the fact that with this approach they could get higher academic results ($r = .65$; $p < .01$) and each student could be offered the possibility to learn according to his or her own learning preferences and needs ($r = .41$; $p < .01$). These results indicate the fact that the investigated students feel the need for that type of instruction which corresponds to their learning profile, as they are aware of the benefits this strategy would bring to them. The more students consider themselves better users of the differentiated approach, the more they declare that this kind of approach intensify the intrinsic learning motivation ($r = .48$; $p < .01$). These results are confirmed by scientific studies following this theme, which point out the progress registered on the motivational level under the circumstances of differentiation of teaching (Bell, 2007; Danzi, Reul, Smith, 2008).

A positive, significant correlation ($r = .20$; $p < .05$) was noticed regarding the capacity of understanding; the students who know better the differentiated approach affirm that it facilitates the understanding of concepts. Strongly significant correlations are registered concerning the capacity to apply the acquired information ($r = .45$; $p < .01$), the students who benefited from this approach claim that they had more diversified possibilities to apply the learned theory. Also, this approach let them involve more in the process of their own training; the results emphasize a positive, strongly significant correlation between

the degree of familiarity and the advantages of active involvement in the didactic process ($r = .67; p < .01$).

On the whole, the results confirm the research hypothesis and allow us to disprove the null hypothesis and to note that a high degree of familiarity with the paradigm of differentiated instruction associates with a high standard evaluation of the level of necessity and opportunity regarding the usage of differentiated instruction in higher education.

5. Conclusion and Implications

The research draws attention upon the necessity to diversify the didactic strategies in higher education, in order to answer the large diversity of learning profiles, interests and levels of training. In a society which values the inter-human diversity, the system of higher education cannot continue to treat all the students equally and offer them a single instructive-educational approach. The one-size-fits-all paradigm is not the only option anymore and it no longer satisfies a lot of students. The students need modern, alternative approaches to help them realize their potential and maximize their capacities and skills. The results of our study cannot be generalized because of the relatively small number of participants and their affiliation to only one university. As a consequence, the future direction of this study aim at expanding the lot of participants and to include in research more variables such as: the type of students' environment; the level of intrinsic and extrinsic motivation of learning; academic achievement; students' interest.

The study has deep implications for teachers, who have a duty in renewing their teaching means and methods so that to offer to all students equal chances of success. The investigation offers real openings to theoreticians and researchers, in order to study the level of training of the university professors regarding the differentiated paradigm and to find adequate modalities for the continual training of teachers from the perspective of differentiated instruction.

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