PROBLEMS AND PERSPECTIVES IN TEACHING DIFFERENT BIOLOGICAL DISCIPLINES ON A FOREIGN LANGUAGE USING INNOVATIVE METHODS

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Abstract. *The goal of the article is to share autors' idea for improving level of education in different biological courses on foreign languages using non traditional methods, to show the challenges and to propose effective ways to overcome them. The survey is made and the results are discussed. It is shown that traditional methods are valuable, but the innovation methods are very important for improving motivation of the students and enhance studying of the course material.*

Keywords: *teaching biology disciplines, innovation methods, education on foreign language*

In this paper we present some ideas and objectives for development and improvement the level of teaching in some biology disciplines in a foreign language, and to note the difficulties and problems in teaching process using classic and innovative technologies for education, and searching effective ways to overcome them.

The goal of the the survey, that we made was to carry out the effectiveness of learning on specific biological disciplines of foreign students in Sofia University "St. Kliment Ohridski ". Two biology disciplines were selected (biochemistry and human ethology), in the first of which students have more knowledge, because discipline is very important for the medical students, and they have exams in biology and chemistry to be approved. The other discipline is optional for the students and represents basic information for the specifics of biological science, and usually, their knowledge from secondary school for human behavior are not much, due to thlittle number of hours for study of this section. To realize this goal also was investigated the level of academic motivation before and after implementation of various innovative methods, techniques and approaches that are alternative to currently used classic ones as lecture, discussion, story, according to the specifics of educational content.

Modern methodological systems give priority to productive and creative activities associated with active participation of the students in the process of studying (provide studying by action). Predominated the training methods that give vent to self-search of the students - self-discovery of scientific facts, self-solving cognitive tasks by making experiments, observation, discussion, didactic games, case studies etc. The most effective were the methods that promote active involvement of the students in activities that develop the intellect and train their feelings.

Some authors assumed active innovative training methods as counterbalance to the other - classical and traditional (Tsvetanska S., 2006). The advantages of the classical methods of teaching for formation of knowledge and skills, and the possibility to give a large volume of information, are indisputable. But at the same time, they are associated to a low degree of autonomy, cognitive passive position and lack of opportunities for critical thinking. So it the need for innovations in classical training methods appears and these methods develop the creative potential of the personality of the student, form their inner motivation, a high degree of autonomy and the opportunity to develop creative and critical thinking.

None of these methods is universal. To receive optimal results and effective change in the overall educational process is necessary to find the balance between tradition and innovation in teaching and to use a comprehensive system of methods, complementing one another and oriented towards a single goal.

Accordingly the specific teaching in teaching various courses with a biological orientation are used both classic and modern, innovative methods, techniques and approaches. Using innovations aimed at training purposes, improves studying, increases the effectiveness of training students and leads to long-lasting understanding and to get hold the learning content.

According to Andreev M. (2000) "Methods of education are one of the most dynamic, the most volatile components of the studying, which are affected from variety of external factors and conditions, and ongoing reorganization of education as a whole." This dynamic component depends on the successful implementation of learning objectives, updated content, and optimal development of the personality of the learner.

Seeking change to improve the process of education some specific approaches and methods have a central position and they make learning and teaching are actually feasible. (S. Evtimova, 2010).

The survey that we conducted aims to conduct the quantitative and qualitative effectiveness of the innovative methods and forms. Regular feedback through tests, questionnaires and statistical data processed for the success of foreign students in the course of their training were used. The analysis is based not only on this study, but also on the input and output tests.

The results show that the development and use of a set of case studies, training, simulations and games in the teaching students in two biological disciplines in a foreign language is an important factor for expansion, imersion and consolidation of theoretical knowledge and transferring and using them in real situations and the formation of professional techniques and skills that improve motivation to acquire the necessary knowledge, skills and competences that lead to higher success.

Participants in the survey are students in Sofia University with diferent nationality. Each country has specific characteristics in the education system which can be seen by certain characteristics in their education, for example:

- specific mental activity;
- reduced concentration during the learning process that can be seen mostly in Italian students;
- difficulties in pronunciation of specific scientific medico-biological termins for Greek students;
- increased level of anxiety.

This in turn often leads to loss of motivation and lowering the interest in studying in general.

We do not have to ignore the existing language barrier for the students, which could explain why feedback student - teacher is more difficult, and hence the quality of education does not reach the desired level as it is with the native Bulgarian speakers. To overcome these problems the teacher have to form by good motivational environment for easy perception, understanding and knowledge consolidation; presentation of scientific information with accessible style, according to the specific characteristics of the students; and last but not least - use of innovative forms, methods and approaches related to enhancing motivation and consequently increase the effectiveness of the education. Therefore, the introduction of additional methods of education, additional hours for consultations, seminars and other techniques and approaches gives a good opportunity for these students successfully to study the material, and to provoke their interest in the studied discipline.

The formation of persistent cognitive motives to study, including cognitive interest, which is a higher level of development of cognitive demand, requires good knowledge of the mechanisms of its formation in students and the ways, methods and means of influencing it. Selected and used optimally in different situations, these methods make the students themselves to want to continue their education or to fill the gaps in their knowledge by obtaining more detailed information on certain issues.

When interactive learning approaches are used students are active participants. This is a prerequisite for continuous stimulation of motivation and provoking their interest studying.

In this work, special attention was paid to the analysis of the results of the survey concerning training on specific biological disciplines using innovative educational technologies.

On hhe question: "What knowledge and skills did you study while innovative educational technologies were used?" most of the surveyed students (over 65%) pointed “team work skills". This is confirmed by the results presented in Table № 1 where are showed the possible answers of the question "How do you prefer to work?" More than half of the students answer that they prefer work in the group, may be because in this situation the individual responsibility is minimized.

Table 1. Answers in percents of the question: How do you prefer to work?

A. In Group	56.5
B. Individually	28.7
C. Does not matter	14.8

The percentage of students that highlight the need for innovations in training is relatively similar. This fact is confirmed by the high percent of the students that indicated need of diversification of the traditional structure of the lesson by solving cognitive tasks, case studies and didactic games.

Much of the participants in the study to determine the time attached case studies and didactic games as interesting and fascinating (73.3%) and only 6.5% note as boring and uninteresting activities. The results are showed in Table 2:

Table 2. Answers in percents to the question: Elapsed time with used case studies and games for you was:

A. interesting and fascinating	73.3
B. boring and uninteresting	6.5
C. I can not determine	20.2

Undoubtedly, there are benefits associated with the inclusion of non-traditional, alternative methodology in the curriculum content, and this can be seen on Table 3.

Table 3. Answers in percents to the question: Do you think that it better course content to include case studies, games and other forms and methods of education to supplement and diversify the traditional teaching methods – lectures, story, talk?

A. Yes	65.8
B. Rather yes	15.8
C. Rather no	7.3
D. No	7.5
E. Do not know	3.6

The effectiveness of the methodology used for teaching and learning in different biological disciplines in a foreign language is confirmed also by the answers of the question showed in Table 4.

Table 4. Answers to question: Do you agree that the approbated innovative educational technologies (case studies and games) are one of the most effective (point the answers that you think that optimize training):

A. make traditional structure of lessons more various	76.7
B. provoke imagination	44.3
C. develop initiation and communication	58.7
D. promote wishes for self-expression and self-approval	38.5
E. helps to develop skills for teamwork	65.8

According to the opinion of the students through innovative educational technology the person "mastered the difficult and specific scientific terminology in a natural and attractive way" (27.8%); "mastered skills that can be applied in other situations" (20.2%); "when working in a team you can learn to show the best of yourself" (18.4%); "communicate freely and can concentrate on the tasks" (17.6%); "study how to analyze specific information" (12.1%); "working in cooperation leads to faster achievementof the desired results" (15.4%); "master skills to summarize and present results" (9.9%).

Three quarters of the students respond positively to question about the usefulness of including innovative forms of learning (Table. 5). This motivates teachers to introduce new methods of teaching and studying material. Only 8% of respondents believe that traditional methods are sufficient and there is no need for new forms of studying, and the rest did not want to express opinion.

Table 5. Answers to the question: Do you think that introduction innovative forms of learning in different biological disciplines is useful?

A. Yes	75
C. No	8
D. Does not have opinion	17

More than half of students believe that use of innovative teaching methods increases the motivation for acquiring knowledge (Table. 6) and only 10% have the opposite opinion.

Table 6. Answers to the question: Did using of innovative methods of training influence your motivation for your mastery of knowledge?

A. Yes	70
C. No	10
D. Have no opinion	20

In general students appreciate the importance of the classical methods of teaching to accumulate the necessary information in different disciplines, but the predominant percentage of them believe that the additional introduction of innovative pedagogical methods strongly influences their motivation and significantly improves the quality and efficiency of the learning process .

One of the most valuable feedback were answers the question "what would you have changed in classes?" They clearly reveal the positive attitude of the students towards use of non-traditional educational technologies in educational process of foreigners. Naturally it is not possible to conform to the wishes and requirements of all students, but their opinion gives valuable information of the positive sides of education and the difficulties encountered by students during their studies.

Students that participated in the survey indicated that use of innovative educational technologies in real school conditions are "fun and idle" and the result of them is mainly "positive"; "enrich knowledge"; "engage attention," so they are "more efficient than traditional". The main problem indicate that the time for some of their tasks is insufficient. May be the reason that these methods are not so widely practiced is limited time for their implementation, and the lack of experience of this kind of training and scarce literature on the issue.

Other problems associated with our chosen forms, methods and approaches of education are related to new relations student-teacher, where the assistant - proffesor is more partner of the students than teacher. This in turn hampers the appropriate discipline in the class. To overcome this difficulty preparation of every detail of the performance of individual methods is required, and also time for discussion and acceptance of the rules during the collaboration is need. It is extremely important for students to realize the purpose of performing the specific activities, not only to participate in the game and have fun.

From applied didactic technology and a qualitative and quantitative analysis of the results and their discussion, we can conclude that approbated of innovative educational technologies:

- contribute to easier and attractive perception of complex theoretical material;
- create conditions for the realization of real interdisciplinary connections;
- expands the cognitive horizons of students and leads to deepening understanding and sustainable utilization of those knowledge that have practical importance.

In the end we can conclude that to some extent the negative attitude towards the educational content of the selected disciplines is overcomed and the learning process has become much more attractive. It will be interesting these methods to be introduced in other disciplines and this could be the subject of future research.

In the future we expect nontraditional forms and methods of work to have a much wider application because:

- learner becomes a major subject, not only performer;
- studying is interesting, attractive, entertaining and effective, and it is based on active approaches;

• in organized cognitive activity the student works independently, participate in discussions, acquire communication skills, defend his or her own positions, working in cooperation.

Innovations in teaching increase motivation, creativity and self-cognitive activity in the learning process. The introduction of innovative educational technologies gives innovative way to evaluate the level of learning in the discipline. This allows rapid detection of gaps and compensate for missed knowledge, which in turn leads to rationalisation and more complete and sustained management of educational content.

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