

SOME METHODOLOGICAL ASPECTS OF THE INTRODUCTION TO THE “LIFE SAFETY” COURSE

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At present innovative pedagogical technologies are actively employed in the educational process at Higher Educational Institutions. One of them the technology of active and interactive learning has been effectively used in the “Life Safety” course at the Minin University (Nizhny Novgorod, Russia). The authors present a very successful variant of a lesson on “Debatable problems of “Life Safety”, a follow-up class after the lecture dedicated to “Theoretical Basis of “Life Safety”. The subject matter of the class was V.I. Vernadsky’s noospheric theory and prognosis for a safe development of our civilization. In the article the authors cover the methodological aspects of the organization of such a lesson. They describe how a combination of mini-projects and a “round table” discussion can really become active and interactive learning. To actively participate in the activities of the lesson students were to go over a profound amount of textual material on the topic to prepare their mini-projects and illustrate their view of the problem with their drawings. The result surpassed all expectations: practically 100% of the students enthusiastically discussed the most essential aspects of Vernadsky’s noospheric theory and its warnings, thus, increasing the effectiveness of the classroom work and the cognitive interest of the students.

Keywords: “Life Safety”, methods of active and interactive learning, discussion problems, V.I. Vernadsky’s noosphere doctrine

The course “Life Safety” at Higher Educational Institutions is aimed at forming a safety culture [1, p. 6], which will answer the challenges of the modern civilization level development. This discipline is one of the core disciplines in the preparation of future graduates at the K. Minin Nizhny Novgorod State Pedagogical University (Minin University). The Minin University offers the “Life Safety” course for bachelors and masters, both in humanities and sciences, pedagogical and non-pedagogical professions.

The problems covered in the “Life Safety” course include not only life safety, labor safety, safety of institutions and organizations in emergency situations, issues of environmental protection [1]. i.e. issues related to practical security aspects, but also the study of modern security problems and sustainable development of our civilization.

Here it should be noted that the introductory topic of the course, entitled “Theoretical basis of Life Safety” is particularly important because it helps to form a new conceptual apparatus of the students which will enable them to discuss and evaluate global problems of our civilization security.

During the introductory lecture the lecturer sets out a list of the main problems of “Life Safety” and highlights the most complex and controversial issues which should become the target of a practical class.

From this point of view V.I. Vernadsky’s concept of noosphere is one of the most important issues. A great Russian scientist V.I. Vernadsky offered his doctrine of the noosphere in the first half of the 20th century [1, p. 7].

In his works he envisioned the inevitability of the onset of a fundamentally new era of human development which will be focused on the relationship of human life activity consequences and the state of the environment. Vernadsky’s noospheric theory is of particular importance at the present stage of the technosphere development and an increasing number of anthropogenic disasters.

Noospheric ideas are popular among representatives of different sciences, e.g. in the field of philosophy, futurology, sociology, ecology, life safety and others. Lately there appeared even noospheric pedagogy [3].

An interesting project under the title “Vernadsky’s Noospheric Concept Reflection in Philology” was presented by Kapustina S.N., Polyakova E.G., Tarasyuk N.I., graduates of the Intel program “Education for the Future” “Noosphere: The 21st Century”, at the regional contest of educational projects organized by the Department of Education and Science of the Tambov Region [4]. The authors of the project designed a concept map “The Noosphere and I” which may serve as part of basis for class discussion.

During the discussion of such complicated issues there may arise certain problems because

1) first of all, not all scientists share similar views on the prospects for human development, many scientists have different opinions about the aggravating ecological crisis and its causes besides students may also have different opinions of these approaches;

2) secondly, even basic definitions of some concepts on the safe life of the whole mankind,

for example, “sustainable development of the civilization”, “the noosphere”, “the technogenesis”, etc, cause discussions among scientists;

3) thirdly, according to the new curricula the discipline “Life Safety” is studied by both sciences and humanities students during the first year at the University, when they do not yet have sufficient skills to conduct a discussion, i.e. they learn to do it during the class.

The purpose of the research is to consider several methodological aspects of organizing a successful lesson on the debatable problems of the course “Life Safety”.

Material and methods of the research

In the system of higher education active and interactive learning methods can be system-forming methods uniting all other generalized pedagogical technologies [2]. The use of active and interactive learning methods is especially important when considering the issues of “Life Safety”, the subject which is practice-oriented, even when considering debatable problems.

The study was carried out at the Nizhny Novgorod State Pedagogical University (Minin University).

First-year students of the School of Design took part in the pedagogical experiment. Their major is “Professional Training”, the profile “Design”.

The choice of the experimental group depended on the fact that “Life Safety” is not their major. On the other hand, to involve such students in going deep into this “minor” subject which seems to be so far from their “artistic” future profession the lecturer has to look for some kind of “bridges” between their major and minor disciplines, on the other, the participants of the pedagogical experiment were expected to have artistic abilities and be creative personalities because first-year students of the School of Design had successfully passed a drawing and painting test at the entrance exams to the university.

At the lesson, we used a combination of the project method and the “round table” discussion format. As part of their task “The noosphere, our future or today’s reality?” students were asked to express their view of the concept “noosphere” both verbally and in the form of a drawing. The use of the artistic abilities in learning was described in the article “Noosphere Artist’s Eye” [6].

Results of research and their discussion

As it is mentioned above our research was carried out at the Minin University in 2017. When teaching the discipline “Life Safety” we

choose different active and interactive forms of lessons, including lessons-debates.

The experimental lesson (90 min) consisted of several stages:

1. Warning-up (brief overview of the material of the preceding lecture) (10-15 min),
2. Presentation of the mini-projects and drawings;
3. “Round-table” discussion and evaluation of the product;
4. Self-reflection.

The “warning-up” stage was a short (10 min) question-answer session, e.g.:

1. What great discoveries were made at the beginning of the 20th century?
2. What great scientists in the field of ecology do you know?
3. What is V.I. Vernadsky famous for?
4. What is noosphere from his point of view?
5. Why is his idea relevant today?

The second stage, topical multimedia presentations of the groups’ mini-projects and individual illustrations of the project, took up about 40 minutes.

The “round-table” discussion, the evaluation of the projects by students experts, took up to 30 minutes. The remaining 10 minutes were dedicated to the students’ self-reflection (filling in printed forms).

Educational objectives of our project included the forming students’ ability to analyze and unite information, correlate new information with the “old” one, set and achieve certain goals, learn to work with partners, present the results of the research activity both in the verbal and visual forms.

Key competences included information competence, a communicative competence, critical thinking, interpersonal communication in a group, public presentation of the product.

The educational goal of the lesson is teaching students how to form and express their attitude to global problems of life safety. The upbringing goal of the lesson was described in the article by Nedelyaeva A.V, Gorokhov A.I. [5].

While preparing their project students:

- a. learn to find and use relevant material;
- b. learn to work in small groups which they form themselves depending on the choice of the topic. The members of the group carry out information search, the joint result of which will be presented in the multimedia format and individual projects, in our case, illustrations;
- c. learn to express their point of view coherently and logically, base it on facts;
- d. learn to make use of their creativity and artistic view of the problem;

e. learn to evaluate their own individual activity and achievements.

The format of a free discussion of such a complicated and controversial topic as “Theoretical Basis of Life Safety” proved to be most effective in introducing the novice students to the metalanguage of the “Life Safety” discipline.

As it was stated presentation of the projects and their assessment constituted the main part of the lesson.

The group project included a theoretical basis and a practice-oriented conclusion. Individual projects were small sketches or drawings illustrating the topic of the project. The students themselves acted as experts on their group-mates’ projects. They assessed each other’s work according to the following matrix: 1) the logics of the theoretical basis of the topic, 2) the correlation between the title and the content, 3) the composition of the work.

In their projects students quoted V.I. Vernadsky, noting that the noosphere is the “sphere of mind”, the sphere of interaction between society and nature, where human activity becomes the determining factor in the development of civilization, thus stressing the central idea of Vernadsky’s doctrine, the unity of the biosphere and humanity [3].

The projects reflected both the global environmental problems, the problems of technogenesis, and various ideas about the noosphere. Students actively discussed the question, “Can human civilization develop without technogenesis?”. Most of the students answered, “No, it’s impossible yet”. There were other ideas, e.g. Emelyanova L. in her illustration to the project “*The Future of our Civilization is in the Hands of Man*” presented her visual embodiment of the idea in the form of a sleeping person, who in the end should “wake up” and think about his influence on Nature. The images of planets and other of space objects were expected to remind us that we are only a tiny part of a huge world called the “Universe” (See the drawing 1 below).

The title of other projects, for example, “Today’s World is the Noosphere?”, “The Unity of Man and Nature”, “The World of the Future”, etc. gave rise to an interesting and dynamic discussion.

The use of the project activity in the “Life Safety” course demands a high degree of the student’s activity and creativity which is preconditioned by “the novelty and uniqueness of the project product” otherwise “there will appear a serial reproductive repetition of the actions and a well-known pattern” [7].



The Future of our Civilization is in the Hands of Man

As reflection of the individual work of every member of the group, they filled in a self-assessment printed form containing multiple choice answers to 5 questions [4]. The results were the following: when answering the first question, “What is your contribution to the work of the group?” – 56% of the students chose the answer “I actively participated in the work of the group, performing my tasks and helping in setting and achieving the objectives”, 44% of the respondents chose the answer, “Sometimes I needed assistance to carry out my tasks, I needed help to set and achieve the goals”, and none of the students chose the answer, “I prefer not to participate in collective work and discussions”.

The next item dealt with interpersonal cooperation in the discussion. The majority (78%) chose the answer, “I shared my ideas when people encouraged me, and let other participants share theirs”, which reflects a certain difficulty in expressing a student’s point of view in the public discussion. The answer, “I suggested a lot of ideas for the discussion, I lead the discussion and encouraged others to share their ideas” was chosen only by 22% of the students.

The answer to the third item, “Active listening within the group”, showed that 44% of the students chose the option “I maintained a balance between listening and speaking, I listened carefully to other people whom I didn’t interrupt”, while 56% chose the answer, “In general, I can listen to other people, and show concern to the feelings and thoughts of other people, but not always”.

The fourth question reflected a relevant ability of the students to work in a team: 44% of the students chose the answer, “I noticed how well we work together in a team, I actively participated in the discussion of the changes that were necessary for better teamwork within the group”, and 56% preferred the answer, “Sometimes I helped the group to work together better, but usually I try not to interfere with the efforts of the group to conduct the discussion”.

The fifth point (finding the joint solution) resulted in the prevalence (56%) of the following answer, “I helped the group in the joint decision-making”, the answer, “I actively worked in the group to solve problems” received a 33% support, while 11% of the student’s preferred “Sometimes I made suggestions and helped the group to make decisions”.

In the questionnaire dealing with the preferences of the students in choosing the most

effective methods of teaching “Theoretical Basis of Life Safety”, the majority of the students (89%) noted that this lesson aroused interest, made it possible to learn more about the problem, made them think about global problems.

Conclusion

The theme “Theoretical Basis of Life Safety” can serve as an introductory topic in teaching “Life Safety” at the University level. The choice of the methods of active and interactive teaching, critical thinking and others will depend on the main objective of the class. The authors, for example, recommend a “round table” format of the discussion for the initial stage. Preparation for the “round table” may include a list of questions dealing with the debatable issues submitted to the students beforehand, texts, films, mini-project tasks, etc. to enable the students to answer spontaneous questions of the moderator arising out of the discussion itself. In any case, a solid lecture should precede the discussion.

The authors share the opinion that a combination of the method of projects (mini-projects) and a brief “round table” discussion of the problems touched upon in the projects proves to be highly effective in teaching most complicated and debatable issues in “Life Safety”.

The use of the professional abilities of the students (in our case, artistic creativity) adds to the success of teaching students not their major, but minor disciplines.

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