expected outcomes. In this case, using awarding system, it is necessary to intensify the publishing process among those who are capable of writing articles in the highly-ranked journals promoting the university rating [7].

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Introduction of Modern Teaching Technologies in to "Metrology, Standardization and Certification" Curriculum

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The main trend of Higher Engineering Education is the use of interactive teaching technologies. Precisely, introduction of such educational games as business games, case-studies, etc. into the curriculum of "Metrology, Standardization and Certification" which is basically regarded as practice-oriented course allows educators to make teaching more interactive. The article examines the ways to use various interactive teaching technologies within the above course, the examples being provided.

Key words: standardization, metrology, certification, interactive teaching, business game, case-method, game teaching methods.

Modern educational technologies aimed to assist teaching are becoming more and more popular. It is explained by the fact that compared to the traditional teaching methods modern or innovative ones allow educators to ensure high quality of education.

Being regarded as a type of interactive teaching method, a business game is proved to be one of the most effective modern educational technologies. Business games can be easily used not only as a part of educational process itself, but also as core elements of challenging situation modeling to provoke students to find an appropriate solution.

Basically, business games are intended to place students into a real-world environment by replicating future workplace setting and decision-making process. This helps students gain clear vision of their future profession and develop systems thinking that is of great importance in any activity.

The interactive character of business games is due to the fact that participants cooperate throughout the whole game making various decisions, analyzing the actions that have been taken and discussing the obtained results. Therefore, business games foster students' communicative skills, unveil their leadership potential [1, p. 144-146].

The positive aspects of using interactive teaching methods are as follows: the growing interest in education in general and imitating problems, in particular; efficiency of education as it is based on the definite real-world examples; development of specific thinking; systematic approach to solving problems [2, p. 12-13].

Being interdisciplinary and of universally applied character, the course "Standardization, Metrology, and Certification" is a part of most engineering bachelor's degree programs. It is focused on practical application of the fundamental principles of such subjects as mathematics, mathematical statistics, physics, economics, legal theory, etc. in metrological support and technical regulation. The core of learning process consists of acquiring practical knowledge in legislation system, nominative documents, and basic sciences.

There are certain difficulties in organizing practical classes within this course. When traditional or passive teaching style is used ("authoritative"), practical classes are designed so that an educator simply explains the legislation

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acts applied in metrology and technical regulation and familiarizes students with the relevant documents. However, it is obvious that these issues can be easily studied as a part of student independent work. As a result, traditional teaching method does not provide students with clear vision of the subject, and, what is more important, it does not contribute to transfer of the gained knowledge to real-world professional activity, i.e. an obligatory stage of competence development in accordance with the educational standards. It is worth noting that these goals can be easily achieved by introducing interactive teaching methods. Moreover, certain sections of the discussed course (certification and quality management) can be hardly well studied without applying modern teaching techniques.

Being of practical character, the course "Standardization, Metrology, and Certification" is closely linked to real-world processes. Due to this, this course can be regarded as rather suitable for introducing modern interactive teaching methods. For example, certification is a complex process that involves a number of definite procedures and always rests on a wide legislation and scientific basis. Use of such an interactive method as business game helps learners do the "puzzle" from various laws, terms, definitions, procedures, methods, etc. and, consequently, provides them with clear and complex vision of the studied subject. In addition, it contributes to improving learners' team-working skills.

To be more precise, the section "Certification" could be taught by applying a number of business games that can constitute an integral concept or holistic perspective of the practical classes within the whole course. They are as follows:

- voluntary product certification;
- certification of product conformance;
- service certification;
- certification in eco-management;
- quality system certification.

The guidance is always included in each game design. It defines the goal and main objectives of the game, required level of learners' knowledge and skills. In addition, it describes the game content and its scenario (certification procedure), proposes the possible distribution of roles (when the number of roles is not sufficient, some learners can be appointed "experts" or "inspectors"). The guidance is given to learners in advance so that they can fill the existing knowledge gaps independently (the recommended literature is given by a teacher). Thus, the greatest effect is achieved: learners are aware of their actions; certification procedure is modeled maximally approximating reality almost without teacher intervention. The game results including the decisions that have been made are discussed by all participants. Besides, students are given an opportunity to assess their own work and results. The assessment criteria presented in the guidance are developed by a teacher in advance. Thus, it can be stated that educational business games combine cognitive, creative, and communicative components.

When designing the game scenarios for various education programs, it is required to consider the difference between the program contents. For the high variability scenario, it is essential to design beforehand the case studies (in accordance with each education program content) which would reflect the real-world certification challenges within the definite profession. The case study is randomly chosen by game players.

For "Metrology" section, educational business games can be applied when studying the legislation provisions in metrology. More precisely, they can be effectively introduced for modeling procedures of the state metrological control in commercial organization. Besides, accreditation of a testing laboratory can be also performed in a form of a business game when one group of students should prepare all required documents while the other should review the prepared documents and evaluate the readiness of the company to be controlled.

Within "Standardization" section, educational business games can be introduced for explaining the procedure of developing technical conditions on the basis of the existing All-Union State Standards for a definite product or for discussing the procedure of State Standard revision and amendment approval. In this case, students are given the outdated State Standards which they should amend in accordance with the established procedure and All-Union State Standard 1.2-2014 (the teacher assumes a role of National Standards Body member who has a right to approve standard amendments). Both scenarios are designed as a small group learning activity, with each group being made up 3-4 students.

In addition to the discussed business games, other types of interactive tasks can be rather effective. For example, the case-study method when students are asked to solve the tasks which do not have definitely right solution can be applied within "Standardization" section. As an alternative, students can be proposed to analyze the possible damage to the customer due to non-compliance with product requirements. To resolve this task, students should define the stage of product life cycle when the quality requirements have not been properly observed. They also have to determine the type of violation and identify a person responsible for it, to propose the actions that could be taken by the injured party and what type of compensation it can obtain, to find out what organizations can be called to solve this problem, etc. The students have to address the above issues independently, determine their own position with respect to the given case and propose the definite ways to tackle the problem. In most cases, the case-study method involves such forms of interactive teaching as discussion, brainstorm, exchange of ideas and views, etc. The main goal of the case-study method is to provoke students to propose as more solutions as possible to the given case and provide them with the clear understanding of the problem discussed. Thus, the focus is not on the acquisition of "ready-to-use" knowledge, but on active participation in the process of knowledge elaboration.

When studying "Metrology", a great diversity of terms, which have rather complex definitions and should be accurately interpreted, presents the main difficulty for students. To evaluate the students' understanding of subject matter, teachers in these cases often apply written or oral tests. However, they are not always effective. As an alternative, we believe that it is better to use such an educational game as "terminological ping-pong". According to the rules, the teacher should prepare the cards with the terms (without definitions). In class, he/she gives the selected cards to two students. One student selects a card and must read the term written on the card while his partner should give the definition to the same term. If the answer is correct, the second student should take the card and read the term for his partner to define it. The game continues until the first mistake. The student who gave a wrong answer is replaced by another learner. The answers are evaluated by all students. The game can be complicated by introducing more than two players simultaneously. In this case, the answers are asked around the circle forming so-called "marry-go-round". All students should be involved in the game: if some students have no cards to work with the terms, they should evaluate the answers of their groupmates, thus, checking their own knowledge. At the end of the class, the game results are discussed, the mistakes are analyzed, and student ranking is done.

Thus, application of modern educational games in teaching "Standardization, Metrology and Certification" helps to introduce interactive learning methods into education process, which, in its turn, enhances and contributes to student learning and improves the quality of education. Thus, it reinforces student engagement and interest in the learning process, precisely, in their independent

work. As a result, the course materials are not mechanically learnt, but comprehend by students. This fact is proved by students' learning achievements and interim evaluation results.

It is worth noting that there is a great variety of interactive teaching technologies. The educational games described in the current article are just the example of how educators can improve the educational process by introducing modern interactive forms of teaching. Thus, interactive teaching technologies have a great potential to form the competences of future professionals.

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On-line Quality Assurance of Study Programmes: EQUASP Approach

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The description of the EQUASP model for quality assurance of study programmes, developed in framework of a TEMPUS project, is introduced.
The introduction section contains brief information on the concept of quality and quality assurance of study programmes along with the Tuning approach to the design of study programmes and the standards and guidelines for quality assurance in the European Higher Education Area.
The fourth section describes the EQUASP approach to quality assurance and pinpoints the necessary documentation for the quality assurance of study programmes. More specifically, the EQUASP standards for the quality assurance of study programmes are defined, followed with the identification of the fundamental processes for a quality management of study programmes together with the associated quality requirements and expected activities for their accomplishment.
The information and data which study programmes need to document in order to provide evidence of the quality of the educational service offered and therefore, to assure their quality, are established.
The standards and guidelines constitute the 'EQUASP Model' for the quality assurance of study programmes.
The fifth section introduces the EQUASP approach for monitoring of quality of study programmes perceived by interested parties (students, graduates, employed graduates and employers).
Finally, the sixth section summarizes the objectives already achieved and introduces the activities in progress for the completion of the project according to the established work plan, while the conclusions summarize the benefits of the EQUASP system.

Key words: study programmes, quality assurance, tuning approach, documentation of quality of study programmes, monitoring study programmes' quality.

Introduction

Quality of study programmes (SPs) can be evaluated by the level of fulfilment of the educational objectives or, in other words, the level of accomplishment of the quality requirements established coherently with the needs and expectations of all those who are interested in the educational service provided, i.e. the 'interested parties' (IPs).

In order to achieve the required level of quality as well as to identify areas for improvement, responsible units of the SPs normally use a quality assurance (QA) system as instrument. A QA system aims at accomplishing the desired requirements and expectations of all the IPs, including the identification and measurement of the level of accomplishment of stated requirements of SPs, as well as to ensure

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