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ABSTRACTS

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FOREWORD

A regular collection of the materials of the Conference "Actual Problems of Education" MIP 2018 contains the abstracts recommended for publication by the Programming Committee. The authors of these abstracts are the academic staffs and other employees of different higher education institutions as well as the representatives of the partner organisations participating in the Conference. The abstracts and presentations concern both the problems of improving the quality of the education process on the basis of the latest pedagogical and information technologies and the issues of preparing future specialists and updating the content of the delivered disciplines with the aim of their orientation to the requirements of the present labour market of Latvia and Europe. The collection has retained the authors' style and the original layout of the presented materials.

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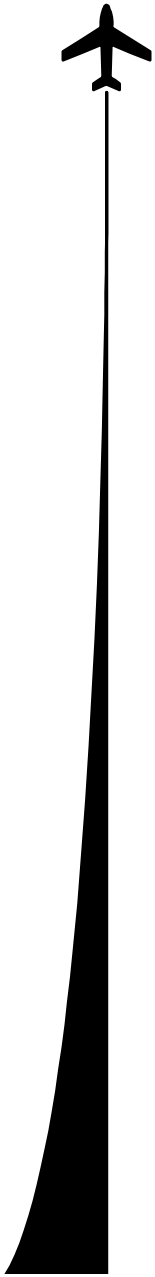

Plenary Session

EVIDENCE BASED-LEARNING AND TEACHING THROUGH A DATA ANALYTICS APPROACH

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Keywords: Learning Management Systems, Academic Analytics, educational environment

Today, there exist an abundance of new technologies and educational environments. Learning Management Systems (LMS), educational web systems and other learning open and mobile technologies have meant that education is carried ubiquitously and in many contexts. When a new technology or a new application is introduced, educational environment changes (communication channels, access to content, the way they interact with students, etc.) This is producing new learning scenarios so that teaching and learning processes must be adapted.

This digitization of teaching-learning processes has provoked the appearance of more and more metrics or measurements. This is due to the interaction between students and the platforms where they develop their learning. In addition, interactions between students and between students and teachers, also generate a large amount of data that could be useful for learning and assessment purposes. Consequently, higher education institutions (HEI) are strongly committed to the collection, analysis and enhancement of educational data captured in these learning environments. The Evidence-Based Learning and Teaching, is committed to foster the adoption of evidence-based learning through the use of learning and academic analytics processes. This main objective can improve substantially the effectiveness of teaching and learning processes, thus, improving the overall performance of both students and teachers particularly, and the quality of higher education in general.

The term analytics refers to the science of logical analysis. Analytics in higher education is operating in a larger context: the emergence of so-called big data in virtually every sector. While higher education lags other industries, we can learn much from the penetration and impact in other sectors. As Siemens (2011) states, Learning and Academic analytics, is a foundational tool for informed change in education. Learning Analytics is the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs (Long and Siemens, 2011). Academic or supporting processes also have been using data oriented approach for a while. In the aftermath of the widespread use of data mining practices and business intelligence tools (as

described before) in business and marketing, the term Academic Analytics (AA) was introduced by Goldstein and Katz (2005) to describe the application of business intelligence tools and practices in higher education (Elias, 2011). It can refer broadly to data-driven decision making practices for operational purposes at the university or college level.

In practice, analytics encompasses the processes, techniques, and tools used to produce and communicate actionable intelligence from large educational data sets. Research indicates that data-driven decision making improves organizational output and productivity (Brynjolfsson et al., 2011).

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UNIVERSITY 4.0: REALITY AND EXPECTATIONS

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Keywords: University 4.0, smart university, models of universities, digitalization in education

The modern world is characterized by high dynamics of socio-cultural, economic, technological, demographic and other processes of a global scale. Globalization, hyper competition, complicated demographic situation, on the one hand, modern science, increase the proportion of multi-disciplinary research, the rapid development of high technology and complexity, on the other hand, have a major impact on the changing role of the modern university in the high-tech industry and society.

It is important to discuss the current state of universities not as a "crisis" or "death", but within the concept of "transformation" embracing these categories. Transformation is a crisis and destruction of one socio-cultural whole and, at the same time, the creation and deployment of another.

Universities have to change fundamentally and to adapt. There is no longer space for a tradition-oriented self-conception, a change of generations lasting too long, idealized role allocations, auditoriums still looking like twenty years ago, mass lectures without any personal contact, a lack of practical experience and a fixed selection principle.

Only those who get rid of these standard ideals and values are able to open up for new technologies and approaches. This transformation can take place in every university domain: in teaching, in research and in university administration.

In paper different models of universities are discussed. These models would develop several strategies, structures and a culture oriented to reinforce: better methods of quality education and training based on the personal growth that supports the creativity and entrepreneurial experience and better strategies for incentives.

In the article concept of University 4.0 is discussed, which responds to the needs of Industry 4.0 or the fourth industrial revolution, where man and machine align to enable new possibilities; harnesses the potential of digital technologies, personalised data, open sourced content, and the new humanity of this globally-connected, technology-fuelled world; establishes a blueprint for the future of learning – lifelong learning – from childhood schooling, to continuous learning in the workplace, to learning to play a better role in society.

These aspects are considered within the discussion of the transformation of role and place of the modern university in a global society, the transition to the concept of university of the third generation, the principles of sustainable development of the modern universities. Some case studies for making more effective higher schools are described.

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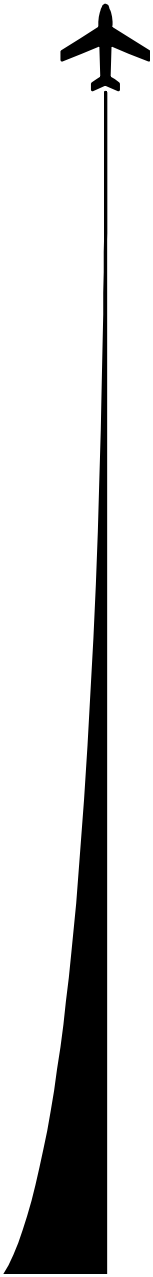

Session 1

Modern Education: Major Trends, Problems and Their Solution Methods. Information Technologies, Learning Experience

ON THE DETERMINANTS OF DIFFERENCES BETWEEN STEM AND HUMANITIES/SOCIAL SCIENCES' STUDENTS

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Keywords: demographic factors, spatial skills, SBSOD test, STEM, Humanities/Social sciences

Different fields of studies interact with and support different cognitive skills and abilities. Several prominent studies confirm links between spatial skills and the fields of study (e.g. Jirout, & Newcombe, 2015, Uttal et al, 2013, Wai et al, 2009). Less clear is what kind of spatial skills shape the different areas of studies, to what extent, and what type of other factors could be also determining.

In our study we wanted to test whether there are significant differences in spatial skills between students from Humanities/Social sciences and STEM fields. We also wanted to explore more in detail the demographic profiles of the students. To avoid impacts of previous experience among our subjects, we have chosen a test referring to navigational skills in large-scale spatial environment – Santa Barbara Sense of Direction (SBSOD) test (Hegarty et al, 2002). The test has a good internal consistency and high test-retest reliability.

In our study, we conducted the SBSOD test in an in-group/repeated measures', quasi-experimental setting. We tested 52 (male 21; female 31) Humanities/Social sciences students and 59 (male 29; female 30) STEM students. Additionally, a comprehensive demographic questionnaire covering information such as age, place of residence, and hobbies was included.

Our results indicate no significant differences between STEM and Humanities/Social sciences students. In turn, there are significant differences between male and female participants in general ($p=0.04$). However, while the difference between male and female students is significant among STEM students ($p = 0.024$), it is not significant among Humanities / Social sciences' students. Further, different parts of the SBSOD test have statistically different scores among the different subgroups of students.

According to our results hobbies are a group of significant factors shaping the differences among students. The following hobbies are statistically different between STEM and Humanities / Social sciences' students: computer, reading, theatre, cooking, exhibitions, technics. Finally, it seems that certain hobbies (such as travelling, gardening, photography, technics) contribute to the increase in spatial skills.

The general conclusions of our study are: (1) although SBSOD test does not show a significant difference between both fields of study we can still observe differences in the subsets of questions. (2) Hobbies can be seen as a significant factor causing differences between students of different fields. (3) The main difference in SBSOD test results is gender.

This means that further studies are necessary, first, to explore the exact impacts of gender differences and, second, to look more closely at those parts of SBSOD that were sensitive in different groups. For this purpose, additional tests (e.g., focusing on perception of cardinal directions and other navigational skills) are necessary.

Our research, therefore, contributes to the work on gender differences in spatial skills among students and shows some important patterns (cp. Levine et al, 2005).

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GENDER IMBALANCES IN ICT EDUCATION

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Keywords: gender equality, ICT education, questionnaire, analysis

Despite the rising demand for Science, Technology, Engineering, Mathematics (STEM) specialists in Latvia and the world, women, who represent over half the population in Latvia, are still underrepresented in this field. Looking at student enrolment in STEM programmes, a relatively low proportion is female (Yatskiv, 2017). The aforementioned author had the conclusion there aren't the problems of discrimination today in Latvia, so it is necessary to analyse other limitations deterring women's participation in STEM in Latvia.

Literature about gender inequality in STEM has uncovered the presence of a 'leaky pipeline' (Seymour, 2002), meaning that women systematically drop out of the STEM career path at various points along education and their career ladder. More 'painful' point in the so called Latvian pipeline is a rejection of STEM career before reaching the undergraduate level. The community task is to promote STEM careers to encourage young women to perceive it as beneficial, as in their teenage years, they tend to underestimate the potential for a successful carrier in STEM.

The scope of this research is an analysis of factors that have influenced the low level of female representation in a particular branch of STEM education: information communication technology (ICT) in Latvia. According to EuroStat in 2015 specialists in ICT sphere consist of 14.6 thousand of men and 4.8 thousand women in Latvia. What does this mean, what has changed in the recent years in Latvia with female presence in ICT education?

The methodology includes a questionnaire regards to female students of Latvian universities, organized via the internet. The questions include socioeconomic information and deal with motivation to choose IT studies, opinions about the main gender related blockers of women STEM carrier progress; gender bias in hiring & promotion; the feeling of the gender discrimination during respondent University studies; and personal views, how female participation in the STEM industry can be improved. Data was analysed through descriptive and inferential statistics.

It is need change stereotyping and bias that can still pervade community culture, particularly within the male dominated engineering and technology sectors (STEM Business Group, 2013). Attracting and retaining a more diverse workforce will maximize innovation, creativity and competitiveness (Hunt *et al.*, 2015). The role of community is to help women within it, especially in female

role models. But at the same time higher education needs to make STEM careers more female friendly and to address today's causes of under-representation requires focusing on changes in policy and educational methods.

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CLOUD SERVICES AS EDUCATION INFRASTRUCTURE

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Keywords: AWS Educate, MS Azure, Google, learning process, cloud-related learning

The research provides analysis of how an education cloud can provide affordable and high-value education services that support Computer Science education at a technical university. A general framework that can help IT decision makers and university leaders identify and meet the needs of the education community, including students, teachers, administrators and employers is outlined.

The benefits of integrating ICT into education have been established by a variety of studies. Positive outcomes may include higher graduation rates, improved matriculation rates for higher education and improved national academic rankings. Cloud computing can help university leaders answer key strategic questions such as (Cloud Computing, 2018):

1. What is the quickest, most efficient and affordable way to deliver education?
2. How do I develop students' 21st-century skills and prepare students for the new job market?

Common examples of cloud services are Google Apps, Amazon EC2 and SalesForce.com. Generic cloud services include wikis, blogs and e-mail. The user can access these services at any time, from any device. The ePortfolio service is one more example of a cloud service that can be delivered to the members of an education community. A student portfolio is a valuable record of a student's academic life and are critical for managing each student's academic progress (The Education Cloud, 2018).

Based on the analysis of existing cloud education services (e.g. AWS Educate, Oracle Higher Education Cloud, Microsoft Azure, IBM Cloud Academy, Google G Suite for Education) a possible solution is proposed to support the educational process for bachelors and master's programs in computer science at a technical university using competence-oriented approach (Misnevs, 2017). The list of recommended cloud-based services includes educational services (professional development, content access and development etc.) as well as generic services (back up and restore, social networking, video conferencing et.)

A set of steps for introduction of cloud services into existing traditional education process is sketched with an emphasis on the Computer Science programmes specifics.

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INTERCULTURAL COMPETENCE – TOOL FOR INCLUSIVE PEDAGOGICAL ACTION

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Keywords: Immigrant students, pedagogical action, intercultural competence, hybrid identities, multi- perspectivity, tolerance

The article is devoted to the problems of integrating students from the other countries, studying in Latvia by providing solutions for them, foregrounding, in particular, the role of the lecturers/professors, working at the higher education institution (HEI). The few existing supportive policies (Guidelines of the Civil Society, National Identity and integration politics 2012-2018, Ministry of Culture) and institutions – Information Centre for Immigrants are not enough to meet the needs of people chosen to live and study in Latvia. Integration into Latvian HEIs does not always proceed rapidly and favourably. Recent studies (Ose, 2015) reveal the need for additional support measures for the teaching staff: information, as well as continuous education of HEIs' teaching staff on integration of students into the Latvian education system, information on the Latvian education system that is accessible worldwide and the favourable effects of community - based support to the student. What kind of support do the students need? The students want to be heard and understood. They expect an individual approach, as well as support in adapting to life in Latvia – knowledge of youth culture, unwritten laws, and preferable behaviour. Data show that basic knowledge of the Latvian language is a decisive factor that facilitates the student's integration. The author of the article concludes by recommending that support to teaching staff in HEIs be offered, which would be beneficial also for students: a module of professional continuous education, in which HEIs lecturers/professors will develop the intercultural competence needed in their profession to work with students with hybrid and changing identities. The module includes 1) components of the intercultural competence; 2) content of training, resources used; 3) methods of it's acquisition.

In short, the basic components of the module are:

1) lecturers /professor's cultural self – awareness, including structure and origin of personal biases and painful experiences of discrimination,
2) learning of and application of communicative behaviour, and ability to situate themselves as persons in HEI and society – being aware of socio-cultural difference and power relations, expansion of the personal openness, tolerance, empathy, and multiperspectivity,

3) knowledge of theories and models which explain the systemic constructivist thinking and action,
4) knowledge of culturally conditioned behaviours of their students, about the backgrounds and connections of structurally underprivileged people, with migration background, other actually and potentially marginalized and discriminated against groups, including their social and education needs, as well as necessary support and targeted measures,
5) abilities to study and consequently promote individual and social development of students, in line with what to plan pedagogical interventions individually and in teams;
6) ability to strengthen the multilingual identity of students and deliver classes in plurilingual environment.

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The Article refers to my four years' experience representing Latvia at the Council of the International Bureau of Education (IBE), UNESCO category 1 institute, and is inspired by the devotion for the global development of inclusive education by the Director of IBE Dr. Mmantsetsa Marope and senior specialist Renato Opertti.

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ONTOLOGY-BASED APPROACH FOR SYNTHESIS OF TRAINING COURSES FOR AIR TRAFFIC MANAGEMENT STAFF

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Keywords: Ontology in training, air traffic management, human factor, new competencies

Aviation professionals have an essential role in the transition to, and successful implementation of the Global Air Navigation Plan (GANP). Human performance, in the context of air traffic management (ATM), refers to the performance of jobs, tasks and activities by operational personnel – individually and together. Human performance, as a domain, focuses on optimising the people element in complex work systems such as air traffic management. It covers all aspects of integrating people into systems including such diverse areas as getting the workstation and controller tools right, ensuring there is adequate staffing, and managing 'human error'. The expertise of human performance specialists and the tools they use have been recognised as key ingredients for programmes to advance ATM infrastructures in Europe and the USA.

Aviation professionals have an essential role in the transition to, and successful implementation of the GANP. It is therefore critical that the concepts being developed within the GANP take into account the strengths and weaknesses of existing and future skilled personnel at every juncture. All actors with a stake in a safe air transportation system will need to intensify efforts to manage risks associated with human performance and the sector will need to proactively anticipate interface and workstation design, training needs and operational procedures while promulgating best practices.

The problem under these conditions is that it is difficult to identify competencies of personnel that require development in order to meet the requirements of modern ATM technologies and in the same time it is difficult to understand the gap between the training curricula outcome and the industry requirements.

The paper is focused on the creation of methodology for the partial automation of the comparison competences of Air Traffic Management (ATM)

personal and synthesis of training courses and modules, using a formal, ontology-based approach as a tool to solve these problems. One of the problems in the implementation of the GANP is that, on the one hand, there are currently no unified requirements for all categories of ATM personnel, and on the other hand, the development of ATM technologies is far ahead of the pace of training of personnel of appropriate qualifications. This problem becomes even more noticeable in countries that have just started an active modernization of ATC systems and do not have enough experience in this field.

The paper describes the general methodological approach based on the education ontology modelling for human competency gap analysis in ATM and for gap analysis between the university curricula outcomes and the ATM requirements. The ontology of key personnel competencies issues for the design and integration of large-scale future ATM programmes is proposed.

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STUDY PROGRAMME ASSESSMENT PROCEDURES IN THE AGENDA OF QUALITY MANAGEMENT IN A MODERN UNIVERSITY

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Keywords: university, quality policy, self-accreditation, assessment criteria

In the context of quality management in higher education, different quality assurance initiatives are launched and implemented in a contemporary university, including those related to study programmes development and enhancement. Such initiatives are intended to improve both the overall academic quality of the delivered programmes and the associated service domains. Quality assurance tools used by higher education managers should provide the means of checking that study programmes meet internationally accepted requirements. Quality management processes related to a study programme must also conform to the wide-ranging quality policy of the university (Standards and Procedures for Engineering Programme Accreditation 2015).

Universities have to create consistent and fair procedures associated with the design and authorization of their programmes that involve periodic assessment of the educational activities incorporated in the programme and the accompanying educational services. The programmes must be designed so that they will meet specific objectives and the related learning outcomes; the awarded qualification have to be clearly identified in compliance with the level of the national qualifications framework for higher education and the Framework for Qualifications of the European Higher Education Area as well (Standards and Guidelines for Quality Assurance in the European Higher Education Area, 2015). Besides, study programmes must supply university graduates with academic knowledge and various skills, which can affect their personal development in the agenda of life-long learning (ibid.). It is vital in the context of study programmes international accreditation that confirms the conformity of the programme with European quality standards.

The aim of the research conducted in Riga Technical University and Transport and Telecommunication Institution was to identify how the importance of different criteria to be applied in the process of self-assessment (self-accreditation) of a study programme is perceived by the programme director and students of the corresponding programme.

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IMPORTANCE OF CHALLENGING TASKS FOR FACILITATION OF STUDENTS' PROGRESS

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Keywords: knowledge economy, challenging tasks, students, progress, thinking process

The global economy becomes knowledge-driven, and this fact emphasizes the necessity to ensure that the specialists comply with the latest trends in economy. Correspondingly, education also must ensure the shift from the traditional instruction paradigm to a learning paradigm; the former is the "pedagogy of the oppressed" while the latter allows "freedom to learn".

The goal of the paper is to demonstrate the necessity of giving the challenging tasks to students for educating the specialists, capable of working in contemporary conditions.

To be engage productively in the contemporary learning process the student must be, first of all, so called "effective student", i.e. master the certain skills, such as skills in thinking, reading, writing, presentation, note-taking, writing examinations, time management, and so on. Therefore, the higher education institution should provide the students with possibilities to develop and use these skills. At the tertiary level, it is crucial that students learn to think for themselves. The spoon-feeding is useless for these purposes. Consequently development of students' critical thinking directly depends on their ability to solve the challenging tasks

According to Sullivan et al. (2013), to deal with the challenging tasks, the student ought to satisfy to certain requirements, such as the ability to plan own approach, especially sequencing more than one step; to process information and make connections between various events and items; to see concepts in new ways; to engage important ideas; to choose the own strategies, goals, and level of accessing the task; to spend time on accomplishing the task (which the modern students suppose to be one of the most difficult of all); to explain the strategies and justify thinking to the teacher and other students; to extend their knowledge and thinking in new ways.

The goal of the faculty of the contemporary university is to extend students' thinking abilities, and the achievement of this goal significantly depends on solution of the challenging tasks which include extended, realistic and open-ended problems (City, Elmore, Fiarman, & Teitel, 2009).

It is possible to implement these ways of teaching in practice only if the university instructors (academic staff, faculty) know how to motivate their

students for successful dealing with this type of tasks (Middleton & Jansen, 2011). The academic staff of the university also should determine how the students develop their reasoning, since reasoning is one of the most important component and tool by means of which the students develop their thinking and demonstrate the progress of thinking; the faculty must also determine the resources for provision of this advance (Choppin, J. 2013).

It is not surprise that the instructors often face serious problems when they start employing such type of tasks in the teaching process, and especially if the students are not ready for the solution of more difficult tasks compared to the previously used elementary ones. To reach the goal and to involve the students into the process of perceiving the challenging tasks as important and interesting work, the instructor must prepare the students for this work, and what is even more important, the teacher must change the way of teaching the students. There has been determined the so called "shallow teaching syndrome" (Vincent& Stacey, 2008) common for the instructors all over the world. It includes the heavy employment of textbooks and the cluster of lesson features that includes "low procedural complexity of problems, high proportion of repetition, and absence of mathematical reasoning in classroom discourse".

Sullivan, Clarke, and Clarke (2009) wrote that "it seems to us that there are many interesting tasks available to teachers, yet it does not appear that teachers are taking advantage of these tasks in an effective way".

The researchers note that the "shallow teaching syndrome" is a result of at least three interconnected problems. According to Hiebert et al. (2003) the majority of instructors extensively use textbooks or worksheets as the primary source of instructional tasks. The second problem: the basic textbooks focus on the acquisition of basic skills. Schoenfeld (2006, p.15) noted that these textbooks suppose that "learning is the accumulation of knowledge; that practice solidifies mastery; and that knowledge is demonstrated by the ability to solve particular (well-studied) classes of problems". The third problem lies in implementation of the challenging tasks: they are used in a way that does not facilitate the advance of students' reasoning (Stein, Grover, &Henningsen, 1996; Sullivan, Clarke, & Clarke, 2009)

It means it is important for instructors not only to find or to design the challenging tasks, but also to learn how to implement them for their students' progress. Confrey et al. (2008) wrote, that the challenging tasks require the instructors to be not only the presenters of content, but also be involved in continuous active interaction with students; they need to new forms of knowledge (which is also an urgent requirements of post-industrial economy) allowing the instructors to embody the challenging tasks in the material and facilitate the students' advance in reasoning.

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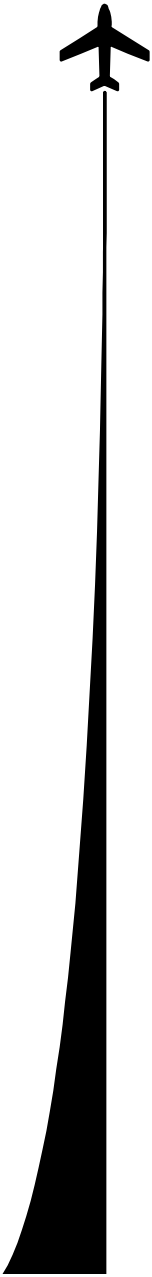

Session 2

Topical Issues of Specialists Professional Training

CENTRALIZATION OF THE TRAINING PROCESS AS A FACTOR OF INCREASING THE QUALITY OF PREPARATION OF AVIATION SPECIALISTS

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Keywords: training, quality, management and control in the educational process

Today the Transport and Telecommunication Institute is implementing four educational programs for aviation specialists:

- basic education is conducted in accordance with the requirements of the Part-66 program (Commission regulation, 2014);
- education of three types of aircraft (Commission regulation, 2014);
- professional education (study programme of the first-level professional higher education Technical Maintenance of Aircraft Transport);
- academic education (study program Bachelor of Engineering Science in Aviation Transport) – this program contains three specializations: mechanic, avionics technician and pilot.

Education was divided into two areas from the very beginning of the implementation of before mentioned types:

- professional education (main regulatory document: Commission Regulation (EU) No. 1321/2014) – according to which education and examination has been carried out in the Academic and Professional Aviation Center (APAC);
- academic education (main regulatory document: Law on institutions of higher education) according to which the process of academic educations has been carried out: the program of the first-level professional higher education and the Bachelor program for Transport and Logistics Faculty.

The students, being trained in any of the academic programs, have the opportunity to confirm their professional competence in the Academic and Professional Aviation Center (training programs for technical maintenance specialists) or at the Baltic Aviation Academy Training Center (for training in flight operations). Organization of the practice of the programs:

- the Department of Aviation Transport – technical maintenance;
- Baltic Aviation Academy Training – practical flight training of pilots.

The Academic and Professional Aviation Center involves the academic staff of the Institute to conduct examination courses on modules Part-66 (which are held not only in Latvia but also in other countries).

In addition, the academic process involves teachers of all three faculties of the Institute. Accordingly, the organization and quality control of the educational process is conducted along several parallel (often non-overlapping) channels.

In order to improve the quality of education specialists for the aviation industry, there is a need to create a single center for monitoring the education process (in all areas of aviation education). The main task of this center is to coordinate the learning processes in all areas. As a result of the creation of such a coordinating center, the quality of the graduates of the Institute should undoubtedly increase, and, consequently, the attractiveness of aviation programs, both academic and professional.

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TSI QUALITY MANAGEMENT SYSTEM OF EDUCATIONAL SERVICES

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Keywords: ESG, Quality Tower, ISO 9001:2015, knowledge, skills, self-accreditation

The report provides an author's analysis of the current level of development of the quality management methodology in the university, in comparison with the requirements of the international standard ISO 9001: 2015 and the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).

The analysis was made using the Quality Tower as a mnemonic image of the gradual development of the quality management methodology.

The floors of the Quality Tower represent the stages of management development that organizations must undergo in order to come to meet the requirements of the ISO 9001:2015 standard.

A year ago, the TSI quality management system was awarded certification for compliance with the requirements of ISO 9001:2015. However, in the field of quality management, we still have work to do. The tasks of improving the quality management system of the University are set forth in this report.

The complex of tasks to improve and develop the quality management system of the University is structured in the report on the floors of the Quality Tower (on the stages of development of the methodology of quality management).

On the first floor of the Quality Tower, the organization manages its products based on their control. In the university there are examination examinations of the results of studies, including the current control of knowledge, skills, skills in the composition and at the end of the training courses, as well as the final verification of the acquired competences. This phase of the development of the methodology of quality management mastered by the university is satisfactory. It meets both the requirements of ISO 9001:2015, and the provisions of ESG standards – rules and criteria for assessing the competencies of students at all stages of the learning process are regulated.

The second floor of the Quality Tower corresponds to the stage at which the organization ranks its production processes, which allows monitoring, technological control and timely adjustments. In the university it is control over the observance of curricula, timetables, assessment and improvement of methodical, information and material support of the educational process,

management of the teaching methodology. In the main positions the activity in the University meets the requirements of ISO 9001:2015 and ESG – the monitoring and monitoring of the University resources – training programs, personnel qualification, material and information resources. However, the audit of the quality management system of the University identified certain shortcomings at this level, such as the lack of criteria for evaluating the quality of classroom activities, the low effectiveness of monitoring the methodological support of training courses.

The third floor of the Quality Tower is considered achieved in the organization, if regular quality audits are carried out there. These are independent checks of the work of managers and administrative processes, carried out on the instructions of the management of the organization. In the university, this practice is implemented as part of the procedure for self-accreditation of training programs. This is in accordance with the requirements of ISO 9001:2015 and ESG. However, the practice of internal audits of general management and resource management processes has not yet been sufficiently implemented. However, this requirement is contained only in the standard ISO 9001:2015, and in the ESG standards the procedure for internal quality audits is not mentioned, as mandatory.

On the fourth floor, the stage of development of the methodology of quality management is realized, giving the organization the opportunity to systematically and purposefully develop to implement its strategy. It is required to formulate the development goals, form the Program for achieving these goals, monitor and analyze the movement towards the goals set. An important criterion for achieving this level is the awareness of employees about the strategy and objectives of the organization's development, as well as the understanding by each employee of its role in achieving its goals. The requirements of this level are contained in the standard ISO 9001:2015, and in the ESG standards. By this criterion, this level of management in the university is at the stage of development. The Quality Policy is formulated, the goals are defined, the criteria for their achievement are formulated (KPI). But the understanding of the role of workers in achieving them should still work.

The fifth, highest for today, level of methodology of management, required according to the latest (fifth) version of ISO 9001:2015 is the way to integration of various control subsystems. From the organization it is now required, along with the fulfillment of obligations to consumers of products and services, to take into account also the risks to its activities, the risks caused by its activities, as well as the opportunities for development arising in the external and internal environment. That is, the regular management of risks and opportunities is now becoming an integral part of the quality management system. In the ESG standards, this level of requirements is not yet standardized. But mastering the risk management processes will help the University improve its stability, vitality and rating.

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DYNAMICS OF OPEN EDUCATIONAL RESOURCES DEVELOPMENT

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Keywords: open educational resources (OER), quality of education, online training, IT

Technical advancement of the modern world, popularity of social networks are significantly changing the direction in education. Both the future of the education, and of society in general depends on understanding by all stakeholders of educational process of the direction of a strategic development of education (Koryuhina, Shamshina, 2015).

The Organization for Economic Cooperation and Development (OECD) defines open educational resources (OER) as: digitised materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research. OER includes learning content, software tools to develop, use, and distribute content, and implementation resources such as open licences (OECD, 2007).

UNESCO is taking a leading role in making countries aware of the potential of OER (Initiative Background, 2009). For example, UNESCO champions OER as a means of promoting access, equity and quality in the spirit of the Universal Declaration of Human Rights (UNESCO, 2009).

A number of factors, such as globalization, demography, continuous development of information and communications technologies, facilitate strategic change of higher education, and, naturally, higher educational institutions have to have necessary tools to face this challenge. However technical, economic and social barriers, such as absence of skills to use the technical inventions barriers, as well as cultural obstacles against sharing or using resources developed by other teachers or institutions, are significant obstacles for OER.

The prezentation will consider the following issues: OER development, drivers and barriers of OER use, and examples of OER in Latvia.

To ensure the quality of educational process at a transitional stage from a classical form of education to IT-based one, it is important for the educational institutions to use OER wisely to meet the needs of both students and teachers. Higher education institutions are affected by OER in a number of ways:

- Growing competition from other institutions;
- The growing number of opportunities to strengthen co-operation among educators within the institution;
- The increase in digital resources available for free educational use;
- Technological developments and the push from younger generations of students for enlarged use of the Internet and social software;
- Opportunities to increase transparency and quality in the educational offer to students, to reach out to non-traditional groups of students and to foster pedagogical innovations;
- Increased awareness and clear policies regarding copyright (OECD, 2007).

This calls for institutions to have a well-reasoned information technology strategy, including e-learning issues. Such a strategy should also outline how the institution will deal with opportunities and threats posed by the OER movement.

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TO THE QUESTION OF DEVELOPMENT OF THE STANDARD OF THE PROFESSION OF THE REPUBLIC OF LATVIA ON SPECIALTY OF TECHNICIAN OF THE MAINTENANCE OF AIRCRAFT

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Keywords: professional standard, knowledge, skills, competences, professional competence of technician-mechanic, structure of professional standard

The professional standard defines the main tasks and responsibilities of professional activity, the requirements for professional qualifications, general and professional knowledge, skills and competencies that are necessary to perform functional tasks in the relevant professions.

Professional standards are the most important link ensuring the interrelation of the labor market and professional education. One of the most popular professions in aviation transport is a technician for aircraft maintenance. As a rule, the training of technicians is carried out by the educational program of the first professional level of higher education. However, in the Republic of Latvia there is no professional standard for the specialty of aircraft maintenance technicians, although in the classifier of occupations there are such professions as technician-mechanic and technician-avionics for maintenance of aircraft.

The lack of this professional standard may adversely affect the quality of training of relevant specialists. Therefore, one of the most important tasks that must be solved in the near future is the development of a professional standard. The paper proposes to use the competence approach when developing the standard (Verbitsky, Larionova, 2009, Martynenko, 2014). The report gives the argumentation of the pedagogical category "professional competence of the technician-mechanic". An analysis of this category in the conceptual apparatus of pedagogical science is a necessary condition for applying the experience of a competence approach with a view to improving the educational process in higher education institutions (Labendik, Yunusov, 2015). Given competence serves as a support for the formation of the ability of the technician-mechanics in a short period of time to analyze the situation, to make the correct diagnosis of the operation of aviation equipment, to take the only correct decision in order to eliminate aircraft equipment malfunctions

A detailed analysis of the components of the standard of the profession of technician-mechanics provides an opportunity to highlight the specific features of this structural component of professional competence: the interaction of the

members of the professional team, in the majority, is based on the strict adherence to the instructions of the relevant normative documentation (Petukhov, 2012).

When developing a professional standard, it is suggested to take into account the types of that the graduate is preparing for. These types of professional activities are:

- maintenance and repair of aviation equipment;
- organization of activities of the team of performers;
- development of technological documentation for maintenance of aviation equipment.

Each type of professional activity corresponds to a certain set of labor functions, which should be taken into account when creating a professional standard.

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DEVELOPMENT OF ELECTRONIC BACHELOR'S PROGRAMME WITH ADAPTATION TO THE CURRENT TECHNOLOGICAL DEMANDS

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Keywords: Electronic engineering, CDIO initiative, electronic and electrical bashelor programme

Electronic engineering is a rapidly advancing profession and is the driving force behind the development of the world's information technology. Electronic engineering offers a broad range of exciting career challenges including producing new innovations and developments in telecommunications, robotics, computing hardware and electrical equipment.

The need for electronics engineers exists in all areas of modern technology. Engineers in electronics are the most popular specialists in Germany, electronics is among the top 20 most sought-after specialties in Europe (Attström and etc., 2014).

Many electrical and electronic engineering programmes have been developed to educate, train and groom future specialists in this area. Students that are not able to understand, to visualize and to relate real application with theoretical concept will find it difficult to cope with the programme.

With the continuous development of today's education career and the changing of social demand for talents, the traditional teaching mode has been difficult to meet the needs of enterprises and society. So, the training mode of university students is faced with huge reform. We need to finish the traditional cramming education, and become the student-oriented teaching mode in the new education environment with new active role of teachers.

The goal of this paper is to demonstrate the approach to electronics education on the base of Concept-Design-Implement-Operate (CDIO) concept embedded in Bachelor programme of Electronics (BPE) at the Faculty of Computer Science and Telecommunication of Transport and Telecommunication Institute.

The CDIO Initiative (Berggren and etc., 2003) is an innovative educational framework for producing the next generation of engineers. The CDIO Initiative adopted 12 standards to describe CDIO programmes (Crawley and etc., 2014). These guiding principles were developed in response to programme leaders, alumni, and industry partners who wanted to know how they would recognize CDIO programmes and their graduates. The main role of these

12 CDIO Standards is to serve as a guideline for educational programme reform and evaluation, create benchmarks and goals with worldwide application, and provide a framework for continuous improvement. There is no formal certification as a CDIO programme; each institution/institutional department self-certifies using the CDIO standards and demonstrates certification to its normal accrediting agency or organization. The CDIO standards allow other academics and industry to identify clearly CDIO programmes and their graduates.

In the paper approach for development of existing BPE on the base of CDIO standards principles is described. In the paper a new engineering educational experience that emphasizes the interdependency of design and manufacturing in a business environment is discussed. The new approach to electronic engineering education by providing balance between engineering science and practice is proposed. The key element in this approach is the combination of curriculum revitalization with coordinated opportunities for application and hands-on experience, thereby erasing the traditional boundaries between lecture and laboratory, academia and industrial practice. The paper discusses the formation of BPE specializations and the possibility of applying the courses of the programme as elective courses for related programmes of the faculty.

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TRANSPORT AND TELECOMMUNICATION INSTITUTE "COMPUTER NETWORKS" AND ANALOGOUS TO STANFORD UNIVERSITY COURSES BENCHMARKING

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Keywords: benchmarking, course, education, computer science, program

Benchmarking is a strategic and structured approach whereby an organization compares aspects of its processes and/or outcomes to those of another organization or set of organizations to identify opportunities for improvements (Spendolini, 1992). While the term benchmarking is commonplace nowadays in institutional research and higher education, less common, is a solid understanding of what it really means and how it has been, and can be, used effectively (Levy & Valcik, 2012). Key to successful of benchmarking is process should have support and commitment of the leadership of the organization (SAAC, 2015).

This work was part of a large research project in the 2017/2018 academic years by a team of professors and lecturers of Faculty of Computer Science and Telecommunication of Transport and Telecommunication Institute (TTI), who teach academic courses as part of the Bachelor of Natural Sciences in Computer Science studying program. The goal was to discover common standards for higher education qualifications, which is needed for establishing a common way of definition of educational outcomes in the EU member countries (Misnevs, 2017).

As the main courses for bench-marking were selected the TTI course B-03-125 "Computer Networks" and course from Stanford University – CS 144 "Introduction to Computer Networking. Academic course "Computer Networks" consist of two parts and based on Cisco Networking Academy courses – "CCNA Routing and Switching: Introduction to Networks" and "CCNA Routing and Switching: Routing and Switching Essentials".

The main analyzed course's characteristics were the following: topics (and content), number of hours (for different activities), basic literature, equipment, final evaluation system, academic disciplines based on this subject.

As the bench-marking result we may consider that major differences are the following:

- Stanford University Networking course is more academic and scientific comparing with TTI course:

- large number of calculations,
- study of the network mechanisms on examples of mathematical models (previously in TTI was course "Queueing Theory"),
- all laboratory works are performed using the programming of network technologies (programming language C) (Course Schedule Autumn, 2017);

- TTI course has a more applied course:
  - all laboratory works are carried out in the Cisco Network Laboratory,
  - after successfully completing two parts of the course, students can pass an exam for a professional certificate.

The performed benchmarking allows us to identify bottlenecks in "Computer Networks" course, increase the effectiveness and performance, help students who study in the "ERASMUSE +" program, and Educational Outcome definition and education process implementation for the Bachelor Programmes in Computer Science at European and Baltic regional level (Misnevs, 2017).

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THREE-LEVEL APPROACH TO THE ASSESSMENT SYSTEM OF STUDENT KNOWLEDGE

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Keywords: examination, assessment, lector, student, three-level approach

To assess the knowledge of students during learning process, different approaches are used, aimed at forming a final assessment. Modern approaches are based on the so-called competence approach (Adam, S., 2004).

Currently, the system of accumulation of activities in the process of the academic semester is quite popular, which takes into account the student's practical tasks, laboratory tasks, projects, etc., and the exam or test itself is a supplement of the final assessment (Sazonov, BA, 2012). In this approach, there are certain advantages and disadvantages (Efremova, 2012).

The proposed system of three-level assessment of knowledge is not opposed to the accepted system for assessing students' knowledge in the university, but on the contrary, it is an intermediate link allowing at the final stage of learning to determine the level of mastering by students of knowledge and skills on the subject.

In this approach, students are invited to evaluate their knowledge and skills on one of three levels. The first level is necessary, i.e. a set of knowledge and skills that corresponds to the necessary minimum for mastering the subject. The second level is basic, it involves demonstrating the student with sufficiently deep theoretical knowledge and practical skills. The third level is advanced, designed for students who have the mindset of system analysis and are capable of solving nonstandard formulated problems. The maximum score on a 10-point scale, obtained in each level, is as follows: Level 1 – 6; 2 level – 8, 3 level – 10.

In fact, this approach is based on the principles of taxonomy (Bloom, 1975), which allows you to select the evaluation tools appropriate to the level of the student's competences.

Practice shows that the majority of students fairly realistically assess their level of knowledge after attending the course, which is confirmed by the choice of the appropriate level. In accordance with the level, the tasks of the exam or test are formed. The first level includes only practical tasks that cover the main topics of the course and without knowledge of which it is impossible to properly perform assignments. The second and third level at the first stage include the implementation of practical tasks of increased complexity.

In case of successful completion of practical assignments, the second stage involves the oral part of the exam. The oral part of the exam is already held as part of the session schedule.

This approach for two years was used in the course "Database and Databanks", the results can be drawn the following conclusions:

- Students are satisfied with this approach for assessing their knowledge, which, in principle, excludes possible conflict situations in the exam between the student and the lector.
- The lecturer has the opportunity to differentiate assessment of the knowledge of students, and, consequently, more objectively.

Practice shows that up to 50% of students choose the first level, up to 40% – 2 level and 10% 3 level. Such a distribution according to the levels, and accordingly, to assesments, corresponds to the practice of passing the exam on the subject, but the likelihood of incorrectly assessing the knowledge of the student decreases.

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CHANGES IN MOTIVATION OF STUDENTS IN OBTAINING EDUCATION AT UNIVERSITY

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Keywords: motivation, education quality, study process, social factors, cognitive factors

The purpose of this paper is to analyze the factors affecting the students' motivation to get an education and to overcome difficulties in the learning process. In this research, we pay our attention first of all in changes in motivation that can be observed in last five years for students on technical educational programs. The research was done with the goal to determine the significance of particular factors and the ability of university administration to influence them in the organization of learning processes.

The motivation is defined as a dynamic process of physiological and psychological, managing human behaviour, characterized by its direction, organization, activity and stability. Thus, learning motivation – is a motive power to overcome the difficulties of a different nature. As a matter of fact, students with low level of learning motivation do not finish the process of education.

In numerous studies of the learning process, a significant amount of factors influencing the students' motivation are investigated (Lai, 2011). Studies of the effect of relevant factors are based on an elementary statistical analysis of the results of surveys and questionnaires. Obtained in different conditions the data, in fact, provide an estimate of the relative importance of groups of factors such as social, cognitive and personal factors. It is clear that factors from the social group are "external" and less manageable at the university. As it was shown in (Krivchenkov and Misnevs, 2015) the rest two groups of factors can be managed by teachers and the quality of teaching affects the group of cognitive factors.

Observations over the past five years allow us to formulate a series of trends that somehow influence the characteristics of the educational process at the university, such as the number of students entering technical programs and the number of students who prematurely interrupt their studies.

The following significant trends are observed for students that coming and educating on technical programs:

- maintaining social components of motivation at a low level for local students;
- the emergence of a large number of foreign students whose social component of motivation is close to zero;

- the decrease in the average IQ (intelligence quotient) for coming students and the lack of ambitions for students in support of the proof of the opposite;
- further growth in the uncertainty of determining the quality of education.

It is obvious that primarily are interesting those factors that can have a positive effect on the organization of the learning process. They can be found in changes of educational programs and not only in their simplification but rather a specialization. Teachers motivating are also important to constant concern about the quality of education.

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APPLICATION OF HEURISTIC SKILLS IN THE STUDY OF COMPUTER SCIENCES

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Keywords: heuristics, skills, education, computer science

The learning programs of our institute does not include such an academic subject as heuristics. However, the study of this science, in my opinion, is extremely important for the specialty "Computer Science".

The course "Operating Systems" opens up wide opportunities for students to learn heuristics.

For example, William Gordon, the author of the synectic (modern heuristic direction), wrote (Gordon, 1961) about such stages of heuristic search as:

- statement of the problem in general form,
- analysis of the problem,
- screening out the first decisions,
- identification of the main difficulties and contradictions that hinder the solution,
- selection of leading questions and transition to the solution of the problem by means of analogies.

Many topics of the training course "Operating systems" allow us to present them in the form of a heuristic procedure. For example, the concept of "external fragmentation" raises the problem of slowing I/O operations on the hard disk. When analyzing the problem, it turns out that the deceleration factor is the movement of the heads between the cylinders of the disk. Consequently, solutions such as stochastic selection of cylinders for writing a file are unacceptable.

The main difficulty is the choice of the best recording algorithm. It is useful to remember that in databases of SQL servers, the main units of space organization are extents, consisting of continuous pages. From here, by analogy, we turn to the optimal solution - writing the file with extents, that is, continuous chains of blocks. This solution is used in HPFS, NTFS, ext4, Btrfs and other file systems.

By the same heuristic scheme, the following topics can be stated:

- monolithic and microkernel architecture,
- addressing blocks from inode descriptors,
- losses of disk space in large clusters,
- caching for file operations.

Thus, the training course "Operating Systems" opens a wide field for mastering analogies. And as D. Poya pointed out: "Heuristic reasoning is often based on induction or analogy" (Pólya, 1945, p. 201).

According to G.S. Altshuller, the heuristic approach has the goal of an ideal end result (Альтшуллер, 1989, p. 18). However, in practice, a technical contradiction is often encountered when "the improvement of one parameter of the system leads to the deterioration of another parameter in operating systems, these two parameters are often reliability and performance, as discussed in detail in topics such as the caching subsystem or the features of the microkernel architecture.

Thus, the heuristic approach to learning makes it possible to better comprehend learning topics, provides useful analogies, arouses interest among students and seems very promising.

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DESIGN AND WORKING-OUT OF THE AI-25 JET ENGINE BENCH FOR THE EDUCATIONAL PROCESS AND SCIENTIFIC RESEARCH OF THE PROPULSION SYSTEM

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Keywords: jet engine, modelling, science, students, test bench, creative abilities

The main idea of this paper relates to the ai-25 jet engine test bench design that aims to meet the need for reliable but more affordable equipment that could accurately perform measurements and act on three axes, being a Multitasking device, adaptable for building and as high as a man (Feng 2013).

Through some digital control device will measure the noise that could be allow to solve additional scientific-research problems (Cui 2011).

Noise can reduce system performance and this is very serious problem in our days. We will investigate the relationship between attribute noise and classification of failures, the impact of noise at different attributes, and possible solutions in handling attribute noise (Schultz 1981).

The main task is stimulating creativity, to solve real problems and reduce technology dependence (Altshuller 1986).

In order to enhance the educational and scientific-research activities in the field of mechanical engineering at the Transport and Telecommunications Institute, there was established a Laboratory of modelling of mechanisms, machines and materials. The main directions of the activities of the laboratory are defined as constructive simulation, modelling of gas dynamics, reliability-diagnostic and of course this relates to the ai-25 jet engine test bench.

The ai-25 jet engine test bench will play an important role in the learning process, by providing consolidation of the theoretical material with practice.

By performing investigations, students can test theories in practice. By carrying out practice on the ai-25 jet engine test bench, the student, in fact, carries out a small scientific research and makes a small discovery for himself. Thus, the ai-25 jet engine test bench arouses curiosity, a desire to initiate or carry out an experiment or research (Osmolovskaya 2010).

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REALIZATION OF MODERN EDUCATIONAL TRAJECTORIES ON THE BASIS OF ICT

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Keywords: modernization, quality of education, competences, individual educational trajectories, chronology of ICT, massive open online courses (MOOC)

Implementation in daily educational practice of modern ICT (Information and Communication Technologies) is one of key priorities of UNESCO in the field of education (Dendev, 2013). In this regard all state members of UNESCO realize education informatization policy by means of national education system upgrading in particular and education quality improvement in general (Shamshina, Koryuhina, 2015).

ICT uses powerful tools to work with the textual, numerical and graphical information which is a basis of the modern educational environment. In combination with communication technologies and the Internet they offer the worldwide training environment, unique by the opportunities, and enormous variety of methods of creation of modern educational trajectories based on ICT (Labeev, Shamshina, 2015).

The article overviews:

1) chronology of ICT implementation in education over the last 20 years;
2) creation and implementation of educational trajectories in the sphere of remote education through massive open online courses (MOOC), called by UNESCO among the 30 most perspective tendencies in development of education till 2028.

Unfortunately, despite quite certain capacity of ICT, transition of national and regional education systems to a new level, for example, in Latvia, meets some objective difficulties (uzdevumi.lv, 2018).

In most institutions of higher education there is a shortage of the computer equipment in each audience, the conflict between innovative ICT product and the conservative consumer of educational services is observed. Besides, often there is no interest of the academic personnel in active and widespread usage of online training, despite declarative support and approval of innovations and competent approach in education (Shamshina, Labeev, 2016).

Therefore, at a transitional stage from a classical form of education to digital and competence-based one (Shakirova, Usova, 2012) for implementation of modern educational trajectories, the educational institution needs to develop

the balanced, weighed approach to ICT use considering expectations of both students and teachers for the purpose of increase of efficiency and quality of educational process.

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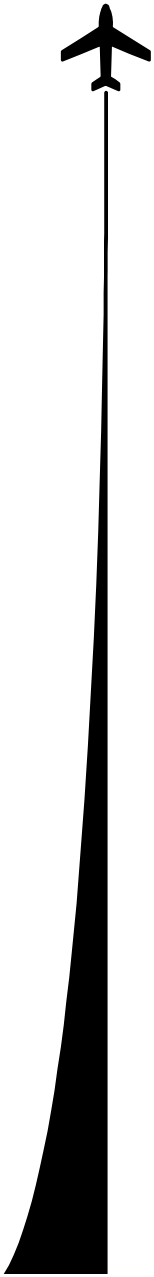

Session 3

Theories and Methods of Teaching. Modern Business Education

DEVELOPMENT OF PSYCHOLOGICAL READINESS FOR SHIFT WORK IN THE ARCTIC CONDITIONS FOR STUDENTS OF THE HIGHER SCHOOL OF ENERGY, OIL AND GAS

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Keywords: psychological readiness; psychological training; psychological competence; shift work

The extraction of oil, gas and other natural resources is carried out in the extreme natural and climatic conditions of the Far North and the Arctic, which causes additional difficulties in their mining and ensuring the safety of the production process. People adapt differently to such conditions in different ways, so this factor has to be taken into account when building a personnel management structure and labor protection system.

The research aim is the creation and approbation of technologies for the development of psychological readiness for shift work in the Arctic conditions for students of the Higher School of Energy, Oil and Gas to improve their adaptability, efficiency, safety and satisfaction with their work.

As methods, psychological training and active forms of training, as well as questionnaires, interviews and psychological testing of students were used.

The result of this work is supposed to be the developed and approved training program for students of the Higher School of Energy, Oil and Gas aimed at improving their psychological competencies.

In the presentation, the authors will show the experience of training both young specialists working on the oil and gas fields, as well as students of the senior courses for a number of psychological competencies. These include: the ability to solve complex and non-standard situations during the shift period (not only professional, but also household), the development of stress resistance, increased communication skills, a change in attitude towards one's activities, increased responsibility for safety at production facilities, etc. All technologies are presented in the form of trainings and practical exercises.

In the presentation, the authors will also present a project for the implementation of an out-of-school scientific and practical school for students entitled “Work on the Shift: Success and Health”.

The study was sponsored by grant of the President of the Russian Federation for the young scientists – PhD (МК-6409.2018.6).

SOCIO-PSYCHOLOGICAL ASPECTS OF FOREIGN STUDENTS' ADAPTATION

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Keywords: higher education, foreign students, socio-psychological adaptation

Higher education is becoming more and more international: the number of foreign students is growing in Higher institutions all over Europe – that is one of the main tendencies in the European educational environment nowadays. The number of joint educational programs is growing, new affiliates of the famous universities are opening in different countries abroad. More and more institutes are looking for partners in order to develop new, innovative educational projects. Academic mobility of students is also growing. In the Leuven/Louvain-la-Neuve Communiqué, we have formulated a mobility target that in 2020, at least 20% of those graduating in the EHEA should have had a study or training period abroad (Mobility for Better Learning, 2012). The share of foreign students is becoming one of the main indicators of the Institute's success and rating in the international educational environment. If we take, for example, The Times Higher Education rating Agency, then we may see that it considers the ratio of foreign students to the local ones as one of 13 criteria in World University Rankings (2017), while the system QS World University Rankings (2017) places the share of foreign students among 6 criteria.

Foreign students come from different educational and socio-cultural background, so in order to maintain the quality of the European education, Standards and Guidelines for Quality Assurance in the European Higher Education Area' (2015) have been developed'. Institutes and Universities in their turn are to provide all the necessary conditions for foreign students adaptation to both the local educational environment and to the study program chosen by the student (Knight, 2008). The ultimate goal is to ensure that after a successful completion of the course a young specialist will possess all the necessary competences which will enable him/her to live and work in a multilingual and multicultural environment. The receiving Institutes and Universities are full of desire and are ready to create all the necessary conditions for a quick and successful adaptation of foreign students. But, first of, it is necessary to find out the requirements of the foreign students, the specifics of the background they come from, and the difficulties they come across in the process of adaptation to the changes in their life and educational environment.

The aim of our research is to find out and examine the priorities of the students in their choice of the study-program, the characteristic features of the

process of adaptation for students of different countries studying in our Institute. Nowadays, foreign students in our Institute are representatives of such countries as India, Kazakhstan, Russia, Uzbekistan, Pakistan, Armenia and others. A sociological questionnaire containing questions was offered to the attention of foreign students of the 1-4th year of education. The result of the analysis of these answers served as the basis for this research. The age of the students is from 18 to 30.The actuality of the given research is connected with the desire of the authorities and the academic staff to provide the conditions for a quick and successful adaptation of foreign students as it is directly connected with the students motivation, their desire to acquire new knowledge, skills and competences. The work with foreign students should start at the very beginning of the studies and shall continue during the whole course of their studies.

But we shall note that even under the most favourable conditions of adaptation created, there is still ground for problems of different character. We hope that the knowledge of the scope and character of these difficulties will help the authorities and the academic staff to have a fruitful and constructive dialogue with students from different countries, find the ways to overcome the exiting problems and prevent the appearance of the problems in the future. Some recommendations on the part of the authors are also given.

The authors strongly believe that the analysis of the questionnaire and the existing situation will not only help to ensure the quality of the education in our students, but will also promote the inflow of new foreign students in the future.

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THE ROLE OF TEACHING POLITICAL ECONOMICS IN THE TRAINING OF MANAGERS AND ECONOMISTS

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Keywords: political economy, demand, taxes, cross-disciplinary, institutional, economic theory

The aim of the work is to determine the importance of teaching political Economics to managers and economists to understand the basics of formation of macroeconomic processes in the state. Today, in the process of teaching international Economics and globalization processes often do not explain to students the specifics of the country's development on the basis of various economic theories, which are the basis of economic programs of political parties in power. For example, without a proper understanding of the economic history and political economy, it is difficult for students to understand the reasons for the change of the course of economic development in France after the victory of François Hollande, who replaced Nicolas Sarkozy. Nicolas Sarkozy's election program focused on stimulating production in two ways: providing more opportunities for small and medium-sized businesses to start production, and by reviving domestic demand, especially the demand of the population. It was meant to release entrepreneurs from complex and expensive administrative procedures in the event of dismissal of workers and employees in the event of a fall in the situation, thereby creating an incentive for them to safely expand the number of personnel during the ascent, which in principle meets the recipes of the theory of J.M. Keynes. The leader of French socialists Francois Hollande promised to create 150 thousand "future jobs" for young people, financed by 75% of the state. From wealthy French and large enterprises Hollande was going to get an additional 15 billion euros per year due to a sharp increase in income taxes (Zvereva, 2014). Hollande's strict social policy is consistent with the traditional canons of socialist theories of redistribution of wealth. Despite the successful overcoming of the economic crisis of 2008 when the power was Nicolas Sarkozy, the evolution of GDP growth under the presidency of Hollande was low, in contrast to the dynamics of the unemployment growth and the budget deficit. If Sarkozy in France refers to right-wing politicians, Hollande is considered the left, therefore the government of each was decided in the first place their political and economic objectives.

Students are always interested in the Swedish model of development, which is based on the provision that a decentralized market system of

production is effective, the state does not interfere in the production activities of the enterprise, and active labor market policy should minimize the social costs of the market economy. The point is to maximize private-sector production and redistribute as much profit as possible by the state through the tax system and the public sector to improve the living standards of the population, but without affecting the basics of production. The emphasis is on infrastructure elements and the collective cash funds. The formation of such an economy model is more in line with the theoretical researches of the institutional theory of development.

Institutional and sociological direction considers the economy as a system where relations between economic entities are formed under the influence of economic and non-economic factors, among which the exclusive role is played by technical and economic factors. The concept of "institution" is interpreted very widely: as a state, Corporation, trade unions, as competition, monopoly, taxes, as a stable way of thinking, and as legal norms. The representatives of the institutional direction are United by the methodological principle characteristic for them: the broad interpretation of the subject of economic theory, the so-called interdisciplinary approach. A General and practical recommendation: the requirement of "social control" over the market economy (Coase, 1960).

Today, it is generally accepted that the success of a market economy depends to a large extent on the state and the framework conditions it creates. The solution of this problem is provided at the stage of formation of state institutions. By focusing more on teaching economic history and political economy, students can effectively learn all aspects of the international economy and the business prospects in the countries they will analyze.

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DESIGNING A NEW COURSE SYLLABUS FOR DOCTORAL STUDY

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Keywords: study course design, learning outcomes, doctoral program, teaching methods

This paper complements the general rules (methodological approaches) for preparation of a new study course "Building Business Models for Intermodal Transport Interchanges" for doctoral study with specific instructions for the subject area. In scientific literature business model is explained as "the strategy's implementation into a conceptual blueprint of the company's money earning logic" (Osterwalder, 2004). So, the question about business model is the subject of the theory of Strategic Management. Strategic Management theory is covered, including issue of risk and corporate governance. Special attention is paid to interdisciplinary cooperation with other subject areas as a Logistics and Transportation, Research methods, and Decision making methodology.

The course syllabus contains the following: general information about the course, prerequisites, the aim, learning outcomes and relevant requirements for obtaining the course, course structure and course topics, attendance and independent work, recommended literature and contact information for lecturer.

The aim of doctoral study is to provide society with competent researchers who can contribute to social-economic sustainable development. So, in this context, the study course "Building Business Models for Intermodal Transport Interchanges" provides students with in-depth knowledge about how a transport organization creates, delivers, and captures value in economic, social, environmental, and other contexts. It helps students to master the skills needed to transform a new idea into a profitable reality. It also develops skills of independent and creative thinking and professional values thus allowing the students to apply scientific research methods into practice and produce new knowledge within their own research area.

Learning outcomes (learning goals) are very important to establish in a pedagogical interchange between professor and students. Learning outcomes are measurable statements that articulate what students should know, being able to do, or value as a result of taking a course or completing a program. The authors of revised Bloom's Taxonomy of Educational Objectives (1956) underscore outcomes, using special verbs and gerunds to describe the cognitive

processes by which thinkers encounter and work with knowledge (Anderson et al., 2001). The main competences that the doctoral students obtain during their study would be: 1) Design a new business model for intermodal transport interchanges as a method of creating competitive advantage for ensuring strategic goal of a transport company; 2) Analysis of alternative approaches to build of business model and making optimal decision prepared by the group members as a collaborative projects; 3) Applying scientific research methods into the practical issues and creating new scientific knowledge within the own research area.

Building assessment criteria and assessment structure it's necessary to remember that assessment is the systematic collection and analysis of information to improve students' learning. Assessment structure characterises the system of measuring the students' knowledge according to developed learning outcomes.

Once the course aim and content are prepared, it's necessary to think about how we will present the content? Developing teaching methods and tools is necessary to take into account consistent learning outcomes connecting with the course aim and size of the class. The most important question here is how will the professor apply or adapt his style to suit the course aim and size of the class, and the type of the students who are likely to enroll.

Acknowledgment

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ABOUT MAIN PECULIARITIES OF THE LABOUR MARKET IN THE SPHERE OF TEACHING STAFFS

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Keywords: labour market, higher professional education, competitive market, highly-qualified teacher, motivation of teachers

The system of higher education is a multifold structure of nation's intellectual capital formation, pedagogically organized socialization of students. The significance of education for all the aspects of social life is supported by the fact that education is the first link in the innovative chain "education – research – venture projects – mass application of the innovations".

The main tendency of the modern labour market is its rising professionalism. Education is becoming professional, universities are seeking to build well-set and smoothly running internal systems. Thus, modern university needs those teachers who can build professional training programs, and themselves have not only theoretical knowledge but also professional practical skills.

The purpose of research – definition of the principles of personnel policy of the university.

The educational system at its current state of development is oriented not only at equipping the student with knowledge, but also at cultivating his desire for continual independent and creative approach to obtaining new knowledge, at training his abilities and skills of independent education. Self-development is becoming the key task of the pedagogical process (Fatkullina, Morozkina and Suleimanova, 2015).

Possession of practical skills replaces academic theorizing and it is becoming a tendency. In addition, the availability of only professional knowledge and competences becomes less relevant than the personal qualities of the teacher.

The mechanism of integrating science into the higher education system should be developed and launched as soon as possible. As a result, "a gradual merging of academic institutions, sectoral research institutions and universities should take place". "At the same time, the above mentioned institutions should be provided with the system of correlation and cooperation in a the integration process that will allow to substantially deepen the knowledge of students, and to orientate them at solving current scientific problems, will help the younger generation to expose their talents and to find a suitable employment" (Morozkin and Morozkin, 2009).

In other words, the more competitive the educational services market becomes, the more requirements it makes to the teacher's professional competencies.

Demand for strong, literate, theoretically and practically educated teachers is rising. The labour market today has the lack of such pedagogical personnel.

In the result the structure and the content of components of professional activity of the teacher at implementation of the intra university estimation of quality of educational process taking into account tasks and the main types of activity of the teacher of the university are revealed.

Besides, there appears a new tendency – rising importance of motivating teachers for the long-term development of the university and the increase in its capitalisation. It is connected with the general market tendency of transition from earning quick and easy money to building a university capable of making money continuously and for a long time and all the timeraising its market cost.

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PEDAGOGICAL CONFLICT "FACULTY-STUDENT" AND THE WAYS TO OVERCOME IT

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Keywords: conflict, faculty, students

The university functioning, like any complex organization, cannot do without conflict manifestations. Special attention should be paid to such specific form as a conflict lecturers and students.

To determine the frequency of conflicts arising between students and faculty and their causes, an empirical study was conducted at the TTI; the students of full-time and correspondence courses, as well as academic staff took part in this research. The main methods of collecting information were questioning (for students) and interviewing (for academic staff).

The results of the study demonstrated the following tendency. In general, students give high evaluation to the level of their satisfaction with the quality and style of teaching, the relationships that have developed between them and the faculty. Nevertheless, 15% of the respondents-students admit that they had conflicts with the teachers. Also all interviewed lecturers indicated that there were conflicts with students in their pedagogical practice.

According to students' view point, the frequent reason for the clash between the opinions of academic staff and students is an in unjust assessment of students' knowledge and unreasonably high demands of lecturers. Many of the interviewed lecturers, on the other hand, believe that the rise of the conflict is often facilitated by overestimated students' self-esteem and unreasonable claims for a higher rating.

Another cause of conflict interaction, called by students, is the instructor's tactlessness, manifested in remarks about the appearance, abilities and behavior of students. It is interesting that the same reason, as one of the main ones, was also called by the academic staff, only the source of conflict interaction in their case was the aggressive behaviour of students, caused by a low level of communicative culture. In addition, in any student group there may appear conflict persons who destabilize relations not only among the students, but also between students and faculty.

Subjectivity in the requirements to students is also mentioned as the reasons for the frequent occurrence of a conflict situation and even conflict. Academic staff, nevertheless, suppose that one of the main causes of conflicts is the lack of interest to study and to the future profession which some students demonstrate.

Also the reasons for discontent are caused by methodological flaws in the work of academic staff, such as incomprehensible or poor-quality presentation of the material, dryness and complexity of the language of lectures, operating with outdated information, etc. On their part, the lecturers consider the students' unpreparedness to study at the university to be a rather common cause of conflicts in the educational environment, as well as laziness, irresponsibility, lack of discipline and initiative of some students.

Identifying and understanding the causes, types and nature of conflicts is necessary to manage them, i.e. converting them into constructive ones, diagnosing them at an early stage of occurrence, and possibly even predicting them.

According to the authors, the following steps are necessary for implementing this idea:

First of all, the problem of conflict should not be hushed up. The students want to be listened to and answered. The lecturer should not be afraid to suffer for his adherence to principle, when university authorities demand "to teach", "to force", etc.

Perhaps it would be reasonable to devote a whole set of pedagogical seminars and trainings (with the participation of both academic staff and students) to analyse various conflict situations with the search for solutions to specific problems. The participation of conflictology specialists in these analyses of the situations is desirable.

The creation of a clear system of requirements and criteria for assessing knowledge demonstrated via the certain task within the certain discipline might play a positive role in the prevention of conflicts arising from the dissatisfaction with the assessments;

It is also desirable to identify conflict persons and conflict student groups and to provide the academic staff working in such groups with psychological assistance to prevent conflict situations and conflicts.

THE ROLE OF A TEACHER IN THE MODERN SOCIETY

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Keywords: teacher, technologies, personality, modelling, methodology, forms

We live in the age of rapidly developing information technologies. New computer technologies provide an opportunity to obtain information and enrich the content of the educational process. A teacher today is not the only source of knowledge as it used to be, but modern technologies allows the implementation of independent research and creative activities of students. There are no barriers for students to get information. Nevertheless, none of modern computers can teach a child to think, to compare, to analyse and to make conclusions independently. This role is assigned to a teacher. It is a teacher who teaches the child a thinking activity; it is a teacher who participates in the intellectual and moral formation of a student's personality (Zhernakova, 2015).

The roles of a teacher are changing in modern conditions. A teacher is a consultant. A consultant is expected either to know a solution, or to be skilled to show the way how to solve a problem. A teacher is a moderator. Moderation is an activity aimed at revealing the potential of a student and his abilities. A teacher is a tutor. He provides pedagogical support for a student. To implement these functions, a future teacher ought to receive tools for this job in the process of education at pedagogical higher educational establishments. Open educational technologies can be such tools. The main differences of the new approach are the relation to a student as a subject of his own development and orientation to the development and self-development of his personality (Petrenko, Klimenko, 2015).

To conclude it can be said that a modern teacher teaches, creates conditions for the development of the internal qualities of a child, the educational process, teaches the child how to find the necessary knowledge himself, improves in the subject area via mastering technique, forms, training, technologies, and, the most important thing, he educates a personality. "The most important phenomenon at school, the most instructive subject, the best living example for a student is a teacher himself. He is a personified method of teaching, the embodiment of education principles" (ibid.). Distinctive features of a modern teacher, a teacher-master, are constant self-improvement, self-criticism, erudition and a high culture of his/her work.

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RESEARCH OF FUTURE MANAGERS' ACHIEVEMENT MOTIVATION

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Keywords: achievement motivation, future managers, research methods

The study of personal characteristic features and peculiarities of the future managers, leaders, heads of the departments and companies has always been an actual field of research in psychology (Stewart & Roth, 2007). Undoubtedly, a major place within the structure of a Personality belongs to the motivation which serves as a driving force in the behavior and, actually, in any activity of a man. Motivation effects all the mental processes, the character and emotions, abilities for work, etc.

Achievement motivation is one of the manifestations of the activity motivation connected, first of all, with the chief orientation of the personality on success and the desire to avoid failure In the process the research conducted by McClelland and Heckhausen there were revealed two independent tendencies of motivation: aspiration for success and the desire to avoid failure (failure avoidance) (Heckhausen, 1991; McClelland, 1988). The first one is the syndrome of achievement when readiness for success achievement prevails over the tendency to avoid failure. Here we can also find the tendency to psychoanalysis, as well as, one can observe optimal strategy and tactics in working out aims. The second one is behavior oriented to avoid random occurrences, unclear situations and the use of the feedback as far as the results of the efforts exerted are concerned.

Achievement motivation is closely connected with the academic activity efficiency, desire for self-improvement, dedication to work or studies, initiative display, and the aspiration to realize one's knowledge and skills in the future professional activity (Affum-Osei at al., 2014; Афанасьева,2014) .

While studying and doing research of achievement motivation one can come across a number of contradictions, namely:

- There are quite a lot of notions being in use which are close in meaning to achievement motivation, such as, for example, motivation for success or success motivation, achievement need, aspiration for target achievement, etc;
- There exist a great number of methods directed at achievement motivation analysis but all of them lack the theoretical analysis of its constructs (Ziegler at al., 2007; Виндекер, 2010);

- The displayed interaction of the achievement motivation with other psychological phenomena discussed by different authors very often contradict each other. Most authors consider achievement motivation as the notion having unipolar or bipolar characteristics.

In the research the author analyses psychometric characteristics, and sums up the results of the achievement motivation research conducted among the first-third year students. The research was conducted according to the methods of Achievement Motivation inventory (Schuler et al., 2004), also using methods of motivation of Rean and Jakunin in the modification of Badmajeva (Бадмаева, 2004) and recommendations of Iljin (Ильин, 2011) on the methods of how to do research of the motivation for studies in Higher Institutions.

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PROMOTING THE DEVELOPMENT OF STUDENTS' COMMUNICATIVE SKILLS IN ENGLISH THROUGH DRAMA

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Keywords: drama and theater, communicative skills, motivation, artistic creativity

Nowadays there are many innovative methods and techniques in the teaching process that it is becoming easier for teachers and learners to find the most suitable instruments for their needs and interests. Besides, living in the 21st century, one has a great opportunity to use modern technologies in order to get positive results in the learning process.

By all means, the ability to communicate in English is an important goal of foreign language learning because English has become the lingua franca of international communication. The ability to communicate requires a well-developed communicative competence: knowing what to say, where to say and how to say it.

Therefore, it is worth motivating students to develop their communicative skills in order to enable learners to use their knowledge in different social situations, especially while speaking in public. Moreover, it is necessary to be aware of certain peculiarities which may influence the communicative process effectively: clear pronunciation and articulation, stage speech and stage voice, body-awareness, mime and gestures, stress management, confidence and artistic creativity.

However, there are some limitations in educational establishments concerning learners' needs to practise the language in real-life context. It is connected not only with the syllabus and curriculum restrictions, but also with learners' personal awareness, maturity and motivation to master their language skills in English.

The use of drama and theater is getting popular in foreign language learning, and it is widely practiced in English-speaking countries as it helps to master the language in a creative way. However, some people believe that drama is just having fun and is suitable only for young learners' entertainment. This stereotype causes misunderstanding and a wrong perception of drama itself. It is essential to remember that the word drama derives from the Greek word meaning "action". Further, it is performed in various media such as theatre, radio, film and television, as it is often combined with music and dance. Therefore, drama and theater give an opportunity to experiment with language and to use it in a very practical way.

Jordan (1997) suggests differentiating between the communicative activities where the language is used to share information through a "game"

element and where the language is used to process information by means of discussion. Both elements are present in drama, in the center of which is communication.

Drama is a good source of inspiration, as it develops thoughts and emotions. Duff and Maley (1981) support this idea, as they consider that the students' intellectual aspect does not function without an element of emotion. Besides, they believe that drama is motivating itself which makes the language to be one part of the language learning process and imaginative, spontaneous creation its other part. On the one hand, students who do not possess good speaking skills, have to speak because it is part of drama activities. On the other hand, drama gives students an opportunity to take risks in the language, to try new ways of producing and combining words, and, therefore, to find a balance between fluency and accuracy.

Also, drama activities help learners to sound confident which is of great importance in communication, because the voice conveys different emotions with the help of tone and pitch, volume and quality as well as intonation. Therefore, with the help of drama, students can express themselves more effectively and convincingly (Almond, 2005).

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SITUATIONAL ANALYSIS AS THE METHOD OF MANAGEMENT SKILLS DEVELOPMENT

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Keywords: Management education, situational analysis, skills, teaching metodologies, benefits, experience

In the study of management the greatest difficulty often has a situational analysis, on the basis of which it is possible to make rational management decision. Developing the skills of such decision is based on correct understanding of situation analysis method.

Usually the situation is understood as the existing provision in the present moment (Vishnevska, 2017). Many analysts are comparing this moment with instant photography. The primary task is to see all parts on this photo, to select only necessary details, to distribute them according of the importance and the connection to each other.

So, the method of situation analysis involves two required stages:

1. Collection and systematization of the existing information.
2. Definition of complex relationships and assessment of the received dates and facts.

Just, these two stages are the basis for making concrete management decision (Хавроничев, 2017).

However, it must be not forgotten, that on the gathering of information and on making the decisions exert influence the dominant style of thinking of a particular person. In this regard, in using the method of situational analysis in educational process, it is recommended to do trainings in small groups, where it is given the opportunity to present different points of view and different approaches to argumentation. This technique allows to perform the main task – to acquire skills for the problem analysis and experience to use actual material (Панфилова, 2004).

In addition, training in the mode of situation analysis in group provides the following benefits:

- develops communicative skills, which are necessary in the work of the manager;
- shapes interactive skills of cooperation with partners;
- creates expert skills, which are needed to manager for estimation of activity in the team

In conclusion, it should be noted that training in the system of situational analysis increases the competitiveness of graduates and allows to

acquire the skills of practical actions in solving complex problem. This method of active learning can be considered an important part of professional training of managers and students.

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THE ROLE OF TRANSLATION IN THE TEACHING OF A FOREIGN LANGUAGE AT NON-LINGUISTIC HIGH SCHOOL

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Keywords: translation, study techniques, language learning, interpretation

The main purpose of teaching a foreign language at non-linguistic high school is to achieve the students' level of practical knowledge of a foreign language, which makes it possible to use it in their future professional and scientific work, which also includes everyday and professional communication. Knowledge of a foreign language and computer skills are fixed in the basic European documents on professional competencies as functional skills necessary for each specialist (Common European Framework of Reference, 2003).

In the sixties and seventies the methodologists have a negative attitude to translation as means of learning. It is proved that mastering a foreign language can occur without the development of translation skills, and hence the conclusion is made that the use of the translation is unnecessary and even undesirable in the teaching of speech in a foreign language. According to Passov (1977), "Following this logic, a number of methodologists actually came to a complete denial of the possibility of using the translation as a methodical tool in teaching foreign languages and even expressed disappointment over the fact that the passion for translation, unfortunately, has not cooled down yet".

Today language learning professionals declare that translation is the strongest link between languages and cultures. As said by Ter-Minasova (2012), "Humanity is looking for ways to communicate between peoples .... Among these methods, the main, most common and most effective is the translation. Investigators claim that the global English-teaching industry is worth 13.8 billion euros (Graddol, 2004), so there are strong commercial reasons for publishing textbooks in English only and promoting the ideal of the monolingual teacher. In such circumstances, there are strong reasons for hiding the positive roles of translation (Pym and Plana, 2013). The translation method may achieve some connected goals such as the mastering of translation competence as one of the basic skills (Campbell 2002) and the promoting of multitasking skills; "the ability to comprehend and interact with structures that are common to several languages" (Conti and Grin 2008).

Kern (1994) found that though students used translation yet that students and educators alike viewed interpretation as a "fake support". Prince

(1996) revealed that translation was more successful than setting learning for context vocabulary, yet interpretation was seen more positively by the students than by the educators. Carreres (2006) conducted a research of 31 Spanish language students at the University of Cambridge. Students reported that translation should be presented as part of a modern languages study classes, and on a scale of 0 (lowest) to 5 (highest), the average score was 4.6 in response to the question, "How useful is translation from English into a foreign language as a means of learning the foreign language?" (Carreres, 2006)

Lertola (2012) found that students in her research improved their vocabulary in both translation and non-translation conditions. But differences were found out at the post-delayed point: when asked the next time, students under the translated condition had higher foreign language vocabulary comprehension compared to those under the non-translation condition. Translation from a foreign language to a native language and transfer from native to foreign, have different tasks. So, in the first case, the translation acts as one of the means of developing understanding skills and understanding speech in a foreign language. In the second it is a means of developing speaking skills, that is, synthesizing speech in a foreign language.

The question arises: "Is it possible to understand speech in a foreign language without translation?" The author thinks that the answer is positive, if the context of the situation makes it possible to realize the meaning of words. The vast majority of such cases are possible only in the appropriate language environment. In the process of learning outside the linguistic environment, understanding the meaning of words is possible only through translation into the native language.

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