STUDY PROCESS INNOVATIONS IN COMPLIANCE WITH THE SPECIFIED LEARNING OUTCOMES IN THE STUDY PROGRAMMES

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ABSTRACT:

In modern information society studies are a dynamic planning of educational activities focussed on development of new or changed human intellectual and physical capacities. The growing importance of information (information search, processing, storing, sharing, application) and information mobility promote qualitative changes in the study process – the curriculum acts as a driving force that causes the individual to identify the need to constantly update the knowledge and improve skills.

The new instructions in education significantly impact the person’s possibility to constantly upgrade the skills and competences throughout their lives and re-enter the educational system according to their needs.

The study process provides student’s self-realisation, beginning with setting the study aims and objectives to assessment of the results obtained.

No longer is the objective of the study process to give only knowledge but to encourage students for independent, critical, and reflective work as well.

The article examines the innovations at Liepaja University focusing on the expected study outcomes in the study programmes. The article analyses the attainable professional competences envisaged by the study course programmes and student survey results, in which students indicate both the positive professional competence moments in successful implementation of the study process and make their suggestions for improvement of the study process.

Keywords: Innovation, self-organisation, study outcomes, professional competence.
RESUMO:

Na sociedade moderna de informação os estudos são um planeamento dinâmico de atividades educacionais focadas no desenvolvimento de novas ou alteradas capacidades humanas intelectuais e físicas. A importância crescente de informações (procura de informações, processamento, armazenamento, compartilhamento, aplicação) e mobilidade da informação promove mudanças qualitativas no processo de estudo – o currículo atua como uma força motriz que faz com que o indivíduo identifique a necessidade constante em atualizar os conhecimentos e melhorar suas habilidades.

As novas instruções na educação têm um impacto significativo na possibilidade da pessoa de constantemente atualizar as suas aptidões e competências ao longo da vida e reentrar no sistema educativo de acordo com suas necessidades.

O processo de estudo proporciona ao aluno a autorrealização, começando com o estabelecimento de metas de estudo e objetivos para a avaliação dos resultados obtidos.

Já não é o objetivo do processo de estudo dar apenas o conhecimento, mas incentivar os alunos para também serem independentes, críticos e reflexivos no seu trabalho. O artigo analisa as inovações da Universidade da Letónia, focando-se nos resultados esperados nos programas de estudo. O artigo analisa as competências profissionais alcançáveis visadas pelos programas de estudo do curso e os resultados da pesquisa de inquérito aos alunos, na qual os estudantes indicam tanto os momentos de competência profissional positiva na implementação bem-sucedida do processo de estudo como fazem as suas sugestões para melhoria do processo de estudo.

Palavras-chave: Inovação, auto-organização, resultados do estudo, competências profissionais

RESUMEN:

En la moderna sociedad de la información los estudios son una planificación dinámica de las actividades educativas centradas en el desarrollo de las capacidades físicas e intelectuales humanas, nuevas o modificadas. La creciente importancia de las informaciones (búsqueda de la información, procesamiento, almacenamiento, intercambio, aplicación) y la movilidad de la información promueve cambios cualitativos en el proceso de estudio – el currículo sirve como una fuerza motriz que provoca al individuo a identificar la necesidad constante de mejorar sus conocimientos y mejorar sus habilidades.

Las nuevas instrucciones en educación tienen un impacto significativo sobre la capacidad de la persona de constantemente actualizar sus habilidades y competencias a lo largo de la vida y volver a entrar al sistema educativo según sus necesidades.
El proceso de estudio provee a los estudiantes la autorrealización, comenzando con el establecimiento de objetivos de estudio y objetivos para la evaluación de los resultados obtenidos. Ya no es el objetivo del proceso de estudio dar conocimiento único, sino animar a los estudiantes a ser también independientes, críticos y reflexivos en su trabajo. El artículo analiza las innovaciones en la Universidad de Letonia, centrándose en los resultados esperados de los programas de estudio. El artículo analiza las habilidades profesionales alcanzables definidas por los programas de estudio del curso y los resultados de los estudiantes de la investigación de encuesta, en la cual los estudiantes indican no solo momentos de competencia profesional positiva en la implementación exitosa del proceso de estudio cómo hacen sus sugerencias para mejorar el proceso de estudio.

**Palabras clave:** Innovación, auto-organización, resultados del estudio, competencias profesionales

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1. INTRODUCTION

In the European higher education planning documents it is stated that education, especially the higher education and its link with research and innovation, has got a significant role in the individuals and society’s development and highly qualified human capital and competent citizens’ provision, who are needed to Europe in order to create work places, economic growth and welfare. (Recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Frame work for lifelong learning, 2008) We can make a conclusion that higher education institutions are very important for the European Union strategy “Europe 2020” implementation, namely, for the development and preservation. The main goal of the strategy “Europe 2020” is to achieve by 2020 that 40 % of youth graduate successfully from a higher education institution. Emphasising the responsibility of member states and education institutions for qualitative implantation of the reform, the “knowledge triangle” (Strategy Europe 2020, 2010) is highlighted, which consists of education, research and entrepreneurship. Students, researchers and personnel’s mobility and assessment of international aspects influence essentially the above mentioned action branches. In its turn, Latvia Environment Protection Law encourages to acquire education for a sustainable society’s development which envisages that every person will be ready to use totally different strategies and techniques for problem solving. Education for a sustainable society’s development envisages the transition from knowledge acquisition to problem solving (Environment Protection Law, 2012). As a result, orientation towards separate subjects is maintained, but beside that the multipurpose and interdisciplinary research of real life situations is being carried out. In the education curriculum the above mentioned topicalities are reflected as a set of certain knowledge, skills and values.

The above described policy planning tasks point out the need to explain the essence of innovation, namely, it is a continuous and dynamic process which includes actions that are connected with the practical usage of knowledge and implementation of skills in order to create more valuable products and more productive services. A process is technologically innovative if it includes in itself new, different methods or it is included in the range of products which are offered by the market. The technical and organizational innovations are carried out in both the basic activity and service sectors.
In Latvia normative documents the following innovation definition has been accepted: “Innovation is a process in which new ideas, development and technologies of scientific, technical, social, culture or other sectors are implemented in the market in a demanded and competitive product or service” (Innovation, 2006). It is important to highlight that innovation covers all areas of the society’s development – education, science, research, intellectual property protection, entrepreneurship protection in science parks, technological centres and business incubators, company management, production organization, market research and production implementation in the market. The innovative development also means more possibilities to restructure economics, increasing more and more the significance of modern technologies. Moreover, not only developing the new technology branches, but also developing the traditional ones in an innovative way. The innovative work also includes the skill to use successfully the scientific, research and technological achievements of other industrially developed countries.

The social and economic environment determines the speed of innovation process development and efficiency in which the innovation system is being implemented, whose final result is innovative work.

The European Union’s attitude clearly shows that the national policy and strategy in the innovation area are its long-term guarantee and base of the society’s intellectual development. Dynamic work and development of the innovative system is guaranteed by the supporting tools of the innovative work, e.g. programmes, projects and other activities. The base of the innovation system is education, research (science, creative work), entrepreneurship, financial system and legislation (jurisdiction). In its turn, the innovation supporting tools are divided into three big groups: finances, infrastructure and information. The research analysed in the higher education institution article is closely connected with the above mentioned third group or information, which is characterized by the tutorials’ accessibility, technology transfer, competence centres, information centres, etc. (Innovation 2006).

The international tendencies in education determine the changes of paradigms in the study process organization in higher education institutions, namely, the shift from the traditional “towards the teacher centred” approach to “towards the student centred” approach. The relatively new approach plans to emphasize what the students will be able to do at the end of the course, module, and programme (Rauhvarger, 2008). In the theoretical literature the term “Study outcomes approach” is widely used to characterize such an approach.
The study outcomes approach shifts the emphasis of the indirect study demands (programme length, training institutions, training specialization etc.) to real studying and knowledge, skills and competences, which have been acquired or should be acquired during the study process. The study outcomes approach is considered as comparatively new one, it is used in different countries, different branches and for different purposes. The study outcomes approach was established in the 70s-80s of the 20th century in the USA. One of its founders is the American scientist Robert F. Mager.

The significance of learning (study) outcomes has been repeatedly emphasized in the documents of European level higher education policy, in which the Study outcomes approach is more and more being accepted as the leading principle in the education sector ongoing collaboration, which is guaranteed by the need to orientate education to precisely defined standards, which have been determined together by the parties concerned such as society, labour market and an individual. All European tools and processes, which have been worked out and introduced currently, are based on this approach, especially the systems of European Qualification Framework and credit points’ transfer. Actually, study outcomes are the only common element to all education activities and mechanisms. The existence of study outcomes guarantees a common language for the dialogue about education tasks. In its turn, this creates a better understanding of studies. The study outcomes are more and more often used as the base for the professional and education standards, education content, assessment criteria, descriptions of education qualifications and level descriptions in the national qualification frameworks. In all these tools the study outcomes are defined on various degrees of specified elaboration and meant for several goals (e.g. determine what abilities to expect from a person who has acquired a particular education qualification; for the study process management; for the assessment process management).

Even though there is not a common approach to the study results usage, the understanding of the main terms and principles develop such a European tool as the introduction of European credit points’ system for professional education and training, and European credit points’ transfer and accumulation system, for the study outcomes are their base.

With the wish to create a transparent education qualification system, at the same time determining the study ways for individual
students and employees, a flexible approach concerning the study organization is created.

When reforming the study programme, the main emphasis is put on the link between the content of the course/module/programme and the obtainable qualification. The main task of innovation is to reinforce studying as a process and to define the outcome precisely.

The study outcomes are written in compliance with their goal which is to determine education and professional standards, and to describe particular education qualification, as well as to determine purposefully the assessment criteria as reference points in the study process. The usage of the study results approach in programmes' descriptions promotes the compliance with the labour market demands. In general the education system is becoming more open, as a result giving educational institutions more autonomy in order to choose the ways for outcomes' achievements.

The Cedefop research about the study content of the professional education has discovered that the study outcomes on the education content and study programmes' level have got two main functions: regulative and didactic. In the regulative function the study content is a tool which guarantees equally high standard in the whole territory where the education is provided. In this case a stable base of the assessment has to be guaranteed for the study outcomes: they have to be measurable. In the didactic function the study content offers a framework for the study process direction. In this case it is possible to formulate the study outcomes widely, including competences which cannot be measured; values and roles, which the students are being prepared for during the education process, are reflected in them. (The Shift to Learning Outcomes; Policies and Practices in Europe - Cedefop, 2008). Right now both the formulations of the study outcomes in the study programmes and the propellant processes of these formulations in every higher educational establishment may vary depending on the usage task of the study outcomes formulation. The study outcomes approach is perceived as readiness, on the basis of the externally worked out standards, to determine educational institutions certain demands, as an asset for the quality assurance for the system in general, as an opportunity to adjust education to individual needs, as an opportunity to decrease the barriers to life-long learning and to improve the dialogue between education and labour market. Defining the study outcomes, the hierarchies of the study process conceptual stages are used in the higher educational establishments, which can be described using the study outcomes. The most popular ones are L.S.Vygotsky's
zone of proximal development, B. Blum's taxonomy of study goals, D. Kolba's experimental theory, etc.

In order to understand the study outcomes, it is important to understand relations between the study outcomes and competence.

The study outcomes are defined as a formulation about what a student should know, understand or what the student should be able to do after the study process completion. A competence means a publicly demonstrated ability (Valbis, 2005) to use knowledge, skills and personal/social and/or methodical abilities in work or study situations, simultaneously promoting the professional or personal development. Thereby a competence defines the personalities which are revealed at work. According to L. Spenser's cognitions, a competence is a human being's basic characteristics, which is in causal relationships with an efficient and outstanding work achievement, based on certain criteria. Basic characteristics mean that a competence is a deep and for quite a long time sustainable part of a personality and one can foresee the behaviour in different situations and professions. Causal relationships mean that a competence is a human being's ability to cause or foresee the behaviour and work achievement. The term “based on criteria” means that the competence foresees who will perform something well or badly, adapting a certain criterion or standard (Spenser, 2011) (see Figure 1).

Figure 1. Competence description (L. Spenser)
In the normative documents the term “an education qualification based on competences” is being used, whose meaning is explained the following way: the person is qualified to work in the particular branch or profession. As a result the study or work context becomes essential, which is awarded to a particular education qualification. The scientist J. Valbis in this connection mentions the following division of competences: professional or applied competence, social competence and individual or self-competence (Valbis, 2005). The scientist L. Spenser analyses five types of competences or the elements of a person’s basic characteristics.

- Motives as things about which a human being thinks constantly or which he/she wants to determine the behaviour. Motives lead, direct and determine the behaviour which is directed towards certain activities or goals.
- Features as physical characteristics and consequent feedback on the situation or information.
- Self-concept as a person’s attitude, values or self-image.
- Knowledge as information which the person has got in certain areas.
- Skills as abilities to carry out a physical or mental task. (Spenser, 2011)

The competence type has got a practical meaning in human resources planning. Human resources management approach based on competences is focused on people and their competences and not on the job and its requirements. As the author of the idea L. Spenser points out, the job responsibilities and content can change very quickly nowadays, depending on the organization structure or economic situation in the country. The competences of knowledge and skills are more general people’s characterization. The self-concept competences and the competences of features and motives are more hidden, “deeper” and are closer to the personality’s kernel (Figure 1). Therefore every organisation should find employees whose competences allow them to be flexible, open to changes and able to look into future. An essential difference between the study outcomes and competence is the fact that study outcomes include general knowledge and ethical, cultural and social skills which exceed the labour market needs. Some kinds of study outcomes cannot guarantee the compliance with the contextual type requirements, e.g. the study outcomes which have been defined in the comprehensive education study content. Taking into account the competence description, also the very study outcomes are formed in contexts in which the following factors are important:
qualification frameworks, external references, general standards, employment demands and descriptions of education qualification. The holders of the mentioned factors have a good knowledge of both the very factors and their usage, which is why the cooperation between the parties concerned should be promoted in order to use the study outcomes more widely. The study outcomes should be considered as a set of tools with what it is possible to achieve the goals of all parties concerned, e.g. increase of education and skills level, life-long learning provision, social inclusion, provision of equal education possibilities. At the same time it should be concluded that the study outcomes are expressed to a specified degree, which complies with the particular purpose (context).

In order to check whether the study outcomes have been achieved, an appropriate assessment method is used. Coordination of the study outcomes, training and assessment helps to create the total study experience more harmonized, transparent and more purposeful for students.

The contextual approach, as it is stated in the European Commission recommendations for life-long learning promotion, divides several characteristic groups of the study outcomes and appropriate goals for them.

- Education- the study outcomes are expressed as education content, modules, course descriptions, education standards, standards of education qualification and assessment.
- Work – the study outcomes are included in the professional standards and descriptions, job descriptions, job advertisements, the performance measurement/assessment systems, as well as the employees’ selection systems.
- Career education- the information about the study outcomes can be found in the career education systems and in the information about professions and work places.
- Personal characterization – people communicate about the study outcomes, using curriculum vitae or their professional competence characterization.

As in the research framework the attention is paid to the analysis of the study programme, then it is essential in the development of the programmes’ descriptions to include the following aspects of the goals mentioned above: compliance with the professions and education standards, hierarchy of the education programme’s courses/modules,
assessment requirements, final requirements of the education qualification.

Taking into account the conceptual approach recommendations, the practical study outcomes have to be formulated clearly, they have to be really achievable during the given time for the module or programme, measurable (using the assessment criteria and methods) and open to a possibility that also students can show them, who have not taken part in the particular study programme. The study results have to be formulated so that they would support or accept a flexible approach to education and education proofs, thus promoting life-long learning. At the same time it means the programme’s development, using the study outcomes, has to be an interactive process, where first of all it is necessary to formulate the goals/tasks and provisional study outcomes. Assessing the study outcomes of both the programmes and various courses/modules in general, it is possible that the initial study outcomes will change.

Regarding the correlation between the study programme and study outcomes, the students’ readiness to participate enthusiastically in their study process management together with their faculty members plays the main role. When such changes are taking place, the study outcomes influence the development of pedagogy science, namely, the faculty members more and more often take upon themselves the role of a study consultant, thus activating more the study process. In order to implement the mentioned changes, the researcher Z. Cehlova offers a functional structure model of cognitive activity, which is based on the four internally connected parts of the study structure: motivation (lack of confidence, biological and social needs), cognition (perception, thinking), performance (programme of action, reaction and operation) and control. It is a structural cycle or cyclic process and it is a completed act (Cehlova, 2002). The conclusion is that in the study outcomes’ assessment it is important to analyse both the very study process and the study outcomes, where from the point of the process the study self-organisation is essential.

The study self-organisation is the student’s abilities and skills, which allow or do not allow them to achieve the self-defined or the faculty members’ determined goal. On a student centred work approach for the study understanding means that the self-organization abilities, including also knowledge and skills, development of thinking as study means are the base for really achievable study goals’ determination.

One can conclude that the efficiency of the study self-organisation process is characterized by the rationality of the outcome’s
achievement, namely, it allows us to foresee and plan the further work how to use self-determination, self-management and self-assessment abilities.

In a democratic study process the assessment about the student’s study achievements is done by the self-assessment, mutual evaluation, faculty member’s assessment (Krasti a, E., Pipere, A., 2004). Implementing the European Qualification System, skills, knowledge and competences are included in the professional standards, which can be checked in the examinations based on competences. (“Development of Skills and Competences and Innovations in the Teaching Methods”) Analytical Survey, topic No 7, Riga 2007, page 12. /

The assessment function can be related to the task to cognise the outcomes of progress and study process. The assessment is carried out in a form of a test, observation and interview. If the outcome is satisfying, then, without any doubt, the perceptions have been right. If the outcome has not been satisfying, then changes have to be done in the teaching and study process. Self-assessment has to be carried out simultaneously with the assessment.

Self-assessment is the assessment of the student’s study process, i.e. outcomes’ understanding about own studying: what I know (previous knowledge), what I acquired (transformation of the previous knowledge into a new one), what I am able to, what I can do better, how to use it, what needs to be changed.

Self-assessment functions as the feedback that assesses not only the acquired knowledge but also the changes in the student’s development, which promotes the sustainability of self-organization.

In the modern quickly changing world the study results promote the human being’s ability to solve problems appropriately, finding one’s way in information, evaluating it and systemizing it.

Being aware of the learning (study) outcomes’ role in the higher education quality provision, in Liepaja University study programmes’ self-assessment process within the framework of the Quality Management System the students’ opinion survey was carried out. The survey results confirm the existence of the study outcomes in the study programmes offered by Liepaja University. The survey was carried out during the time period from February, 2013 till March 31, 2012. Within the framework of the research three study branches, i.e. language and literature studies, mother language studies and language programmes (hereinafter 4 programmes of language studies), art programme (hereinafter 3
programmes of art studies) and programmes of information technology, computer engineering, electronics, telecommunication computer control and computer science (hereinafter 3 programmes of information technology studies) and 2nd and 3rd year Bachelor’s and Master’s studies level students took part. In total the data of 106 questionnaires was analysed.

In the offered survey there were analysed the students’ opinions about their chosen programme. To find out the students’ opinion about the anticipated study outcomes, the respondents’ replies to four questions were analysed. Is the study programme competitive in Latvia? Does the study programme prepare competitive employees in the labour market? Do the study courses broaden their horizons? How do you think it would be possible to improve the study programme?

The data was collated taking into account the percentage between the existent students number in the study branch and the total number of students involved in the research. As a result positive or negative replies can be submitted in the language studies 38%, art studies 20% and information technologies studies 42% cases. As the survey data confirms, the respondents acknowledge all programmes of the three study branches as competitive ones in the labour market in Latvia. However, the most positive replies were received from the study branches where the students of language studies (53% completely or partly agree) and information technology students (40% completely or partly agree) study. In its turn, in the art branch positive replies were submitted by 20% of the respondents. The most negative replies were received from the students of the art branch study programmes (Figure 2).

Figure 2. The study programme is competitive in Latvia
Analyzing the respondents' replies to the question: “Does the study programme prepare competitive employees in the labour market?” the following replies were obtained. Positive replies were submitted by 38% (completely and partly agree) of language studies, 20% (completely and partly agree) of art and 30% (completely and partly agree) of information and technology programmes’ students. Negative attitude was expressed by 3 % (completely disagree) of information technology students (Figure 3).

Comparing the results of both questions, one can conclude that the number of positive replies has deceased in the language and information technology study branches, but it has remained stable in the art branch which indicates of distinct understanding about the study branch in general and about the achieved study outcomes in the language studies and information technology studies’ branches.

Analysing the respondents' replies to the question: “Do the study courses broaden your horizon?”, the following replies were received. 40% of language studies, 32% of information technology studies and 20% of art studies’ branch students agree completely or partly to such a statement. However, the most negative (completely or partly disagree) replies were given by the information technology branch students (11%). The obtained data confirms the dominance of professional competence in the technology study programmes and the
dominance of individual competence in the language studies and art studies' branch (Figure 4).

Figure 4. Study courses broaden my horizon

Collating the respondents’ replies in the study branches to the open question: “How do you think it would be possible to improve the study programme?”, in each branch three, the most similar improvements were chosen which comply with the theoretical characterization of the study outcomes analysed in the research. In the language studies’ branch the respondents suggest the following improvements: balance the timetable of lectures and seminars, so that it would be possible to carry out the practical work more often in the classes than at home, increase the number of foreign lecturers in particular study courses, e.g. foreign literature; more practical work in translation, writing.

Collating the respondents’ replies in the art studies branch the following improvements have been suggested: organise creative workshops and festivals, in which the professionals of the branch are involved; promote the collaboration with other study programmes and higher educational establishments; upgrade the courses/modules’ programmes with the topicalities of the branch in Latvia and the world.

Collating the respondents’ replies in the information technology study branch, the following improvements have been suggested: include topicalities in the study process and pay attention to the students’ interests; use video conferences as a collaboration tool with other higher educational establishments in Latvia and Europe; increase
the number of work to be carried out together with the professionals in the programme.

Collating the obtained replies, the students in all study branches think that the aspect of the social competence has to be improved. However, in the professional competence aspect of international collaboration has to be improved.

CONCLUSIONS

1. The analysis of the European Higher Education planning documents reveals the role of higher education institutions in the economic growth and welfare provision.

2. The study programmes’ innovative offer foresees the change of paradigms from the knowledge provision to the problem solving. It promotes a sustainable development of the society, which is guaranteed by the so called knowledge triangle or the correlation between education, research and entrepreneurship.

3. An innovative offer of the study programmes is determined on the basis of learning (study) outcomes approach, which in the European level higher education policy documents is the main principle in the education sector on going collaboration.

4. International researches about the professional education study content reveal the presence of two basic functions in the learning (study) outcomes: regulative and didactic, which influence the formulations of the learning (study) outcomes in the programmes’ descriptions.

5. On the basis of the learning (study) process conceptual stages’ hierarchies in the study outcomes descriptions, the reflection of the competence or a human being’s basic characterization (L. Spenser) has to be promoted when based on particular criteria.

6. On the basis of the offered context approach by the European Commission for a life-long learning promotion, the leaning (study) outcomes serve as a tool for the development of the study quality assurance system.

7. Within the research framework on the basis of the model of the cognitive work functional structure (Z. Cehlova), the correlation between the programmes’ content and study outcomes was analysed, emphasising the learning (study) self-organization, whose essential aspect is self-assessment. The obtained data confirms the dominance of professional and individual competence in the study programmes. The respondents mention the social competence as the one to be improved. In its turn, in
the professional competence aspect the international collaboration should be improved.

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