

COMPLEX SYSTEM OF QUALITY CONTROL OF SPECIALISTS' TRAINING AT HEI: PROJECT ORGANIZATION AND FUNCTIONING

AUTHORSHIP

Ihor Kolodii 

PhD in Pedagog, Associate Professor of Pedagogy and Innovative Education, Educational and Scientific Institute of Law, Psychology and Innovative Education, Department of Pedagogy and Innovative Education, Lviv Polytechnic National University.

ORCID: <https://orcid.org/0000-0002-7368-2239>

E-mail: kolodij-is@ukr.net

Halyna Yastrubetska 

Dr.Sc. in Philology, Associate Professor, professor, Department of Ukrainian Literature, Faculty of Philology and Journalism, Lesia Ukrainka Volyn National University.

ORCID: <https://orcid.org/0000-0003-1470-9232>

E-mail: galinaj@i.ua

Olha Kanibolotska 

Ph.D. in Pedagogics (in Methods of teaching), Associate Professor, Department of Teaching Second Language, Faculty of Foreign Philology, Zaporizhzhia National University.

ORCID: <https://orcid.org/0000-0002-9622-0731>

E-mail: kolga1512@gmail.com

Serhii Kubitskyi 

Candidate of pedagogical sciences, Head of the Department of Management and Educational Technologies National University of Life and Environmental Sciences of Ukraine.

ORCID: <https://orcid.org/0000-0002-7691-8606>

E-mail: kubitskiy@ukr.net

Tetiana Kolomiets 

PhD, Teacher of Department of Language Training, O.O. Bogomolets National Medical University.

ORCID: <https://orcid.org/0000-0002-5335-7789>

E-mail: Florencia77@ukr.net

Received in:
2021-08-10

Approved in:
2021-09-25

DOI: <https://doi.org/10.24115/S2446-6220202173B1600p.594-603>

INTRODUCTION

In a competitive global environment, the demand for quality education is increasing significantly, and quality and building a comprehensive system of quality control of specialist training is recognized as a component of training programs in higher education institutions (HEIs). A comprehensive system of quality control is also important in terms of increasing student mobility, multicultural learning environments, the concept of sustainable development, and the concept of lifelong learning (VARONISM, 2014).

The concept of quality in higher education began to develop in the early 1980s due to the commercialization of education, privatization, liberalization, and the introduction of the concept of stakeholders in education. "The review conducted for this paper reveals that several HEIs have tested quality management models originally developed for the industry" (BROOKES & BECKET, 2007). This necessitated the need to measure the quality of education and evaluate the components of the quality system, not only ensures the social and economic well-being of the country but also determines the status of the education system at the international level (UNESCO, 2005). Ensuring and improving the quality of higher education professionals has become

one of the very concepts of internationalization (MARINGE, 2010). The term "internationalization" is often associated with the mobility of staff, students, HEIs performance on the level of research, the level of international research, and academic cooperation, which determine the position of the institution in the world ranking of universities (Wihlborg and Robson 2018). Ensuring the quality of educational training programs and their compliance with international standards is becoming a serious problem in many countries (OECD & WORLD BANK, 2007).

Educational practice requires effective mechanisms for managing and controlling the quality of HEIs professional training, which would consider the specifics of the educational training process and the sequence of the specialist's personal development in the future. HEIs standards and regulations should provide a continuous process of improving the system of quality control of specialist training. The article aims to form the peculiarities of using the pedagogical technologies of designing and functioning of the integrated system of quality control of specialist training in HEIs.

LITERATURE REVIEW

The theory and practice of designing and functioning of a comprehensive system of quality control of specialist training in HEIs are actively researched in the scientific literature. Gabdrakhmanova, Kalimullina & Ignatovich (2016) describe the principles of designing a quality-oriented teacher education management system in higher education. Nurmanov (2020) examines the principles of the TQM (Total Quality Management) concept in the context of the development of scientific and methodological support and improvement of education

quality management system in pedagogical higher education institutions. Chuchalin, & Zamyatin (2011) argue for giving freedom to HEIs teachers to develop educational programs (content and subject content), encourage research, and use innovative pedagogical teaching technologies. Smuts et al. (2017) examine the technological barriers in the educational process that students face while studying in HEIs in the "Moodle-based online learning environment". Pařová & Vejačka (2020) identified ways to transform the pedagogical process in higher education, advantages and disadvantages of distance learning technologies, pedagogical technologies to ensure quality control of training in HEIs under pandemic conditions. Pakhomova et al. (2021) investigate the state of the educational innovation process in HEIs and the implementation of new pedagogical approaches in the process of ICT-based student learning. Suradi, Kahar & Jamaluddin (2018) examine the assessment system for teaching e-courses. Rahnuma (2020) examines the evolution of quality culture in higher education, the concept of sustainability as an element of teaching and learning. Dobbins, Knill & Vögtle (2011) examine an integrated methodology for analyzing quality management in higher education, allowing for more systematic tracking of changes in European higher education systems. Vykydal, Folta & Nenadál (2020) present approaches to the development of quality management systems and their evaluation in universities.

A comprehensive system of quality control in higher education institutions includes independent monitoring of undergraduate students' residual knowledge from fundamental, vocationally-oriented, and specialized disciplines, as well as their proficiency in information technology and foreign language; quality control of graduate thesis projects and papers; quality assessment of graduates by employers (CHUCHALIN & ZAMYATIN 2011; MAHMUD, BRETAG & FOLTÝNEK, 2019). In the context of the persistent mismatch between the competence of graduate students and the needs of the labor market, employers' assessment of the quality of graduates is particularly relevant. The quality of specialists' training directly depends on the quality of curricula, scientific and methodological support of the educational process. Among the factors influencing this process are the availability of educational and methodological developments, implementation of new teaching technologies, systems of independent monitoring and assessment of students' knowledge and skills (including employers), and state certification of graduates of all levels (SAVKOVA et al., 2017).

Pedagogical technology is one of the special areas of pedagogical science (applied pedagogy), designed to ensure the achievement of certain tasks, improve the effectiveness of teaching and learning level, guarantee its high level (SURADI, KAHAR & JAMALUDDIN, 2018; BAKHMAT ET AL., 2018; HANABA & BAKHMAT, 2020). In the context of the design and functioning of a comprehensive system of quality control of training in HEIs, the pedagogical technology should be aimed at ensuring a high level of quality control of training through continuous monitoring of students' knowledge.

METHODOLOGY

The first part of the study evaluated the indicator Innovation in higher education in the Czech Republic, Hungary, Poland in 2020 to measure the ability of higher education teachers to implement innovations, technologies in the educational process, the use of different pedagogical approaches, trends in changes in the organization of the educational process and the relationship of such changes with the improvement of the quality control system of education.

The second part of the study uses secondary data from the OECD TALIS survey (2018) to identify pedagogical technologies for the functioning of a comprehensive system of quality control of training in HEIs. To identify the pedagogical technologies for assessing the state of the control system, the specific results of the responses of the interviewed HEIs teachers in the Czech Republic, shown in Table 1, were used. The sample consisted of 6,039 HEIs teachers, of which 72.4% were female, 27.6% were male.

Table 1: Questionnaire, which contains the pedagogical technology questions to assess the state of the HEIs training quality control system

Question	Variants of the answers
1. Approximately how many 60-minute hours did you spend on the following tasks during your most recent complete calendar week, in your job at this school? Include tasks that took place during weekends, evenings or other out of class hours. Exclude all time spent teaching, as this was recorded in the previous question. Rough estimates are sufficient. If you did not perform the task during the most recent complete calendar week, write 0 (zero). Round to the nearest whole hour.	<ul style="list-style-type: none"> a) Individual planning or preparation of lessons either at school or out of school b) Teamwork and dialogue with colleagues within this school c) Marking/correcting of student work d) Counselling students (including student supervision, mentoring, virtual counselling, career guidance and behavior guidance) e) Participation in school management f) General administrative work (including communication, paperwork and other clerical duties) g) Professional development activities h) Communication and co-operation with parents or guardians i) Engaging in extracurricular activities (e.g. sports and cultural activities after school) j) Other work tasks
2. In this HEI, who uses the following types of information to provide feedback to you? 'External individuals or bodies' as used below refer to, for example, inspectors, municipality representatives, or other persons from outside the school. Please mark as many choices as appropriate in each row.	<ul style="list-style-type: none"> a) Observation of my classroom teaching b) Student survey responses related to my teaching c) Assessment of my content knowledge d) External results of students I teach (e.g., national test scores) e) School-based and classroom-based results (e.g., performance results, project results, test scores) f) Self-assessment of my work (e.g., presentation of a portfolio assessment, analysis of my teaching using video)
3. Thinking about the feedback you have received during the last 12 months, did it lead to a positive change in any of the following aspects of your teaching? Please mark one choice in each row (1 - Yes, 2 - No).	<ul style="list-style-type: none"> a) Knowledge and understanding of my main subject field(s) b) Pedagogical competencies in teaching my subject c) Use of student assessments to improve student learning d) Classroom management e) Methods for teaching students with special needs f) Methods for teaching in a multicultural or multilingual setting

Source: OECD (2018).

RESULTS

Measuring the innovation and pedagogical technologies of the HEIs educational process is important in the functioning of a comprehensive system of quality training. Innovative teaching and quality control technologies together ensure the quality of learning, student performance, and their ability to be innovative both within HEIs and after graduation in the professional process.

The main types of faculty innovation in the Czech Republic are knowledge innovation and innovative methods as well as technologies, tools, and instruments for teaching students. In the Czech Republic, 49.8% of students learn in a highly innovative environment (by type of innovation Knowledge, or methods). In comparison, the figure in Poland is much higher - 63.9%, in Hungary much lower - 43.6%. The percentage of graduates who play a significant role in presenting innovations is 80.8% in the Czech Republic, 62.99% in Hungary, and 67.9% in Poland (by the Knowledge or methods types of innovation). This means that learning in an

innovative environment does not yet mean a high potential for students to develop innovations through the efforts of teachers.

Table 2. Innovation in higher education in the Czech Republic, Hungary, Poland in 2020

Country	Innovation type: Knowledge or methods		
	Percentage of graduates working in highly innovative workplaces, %	Percentage of graduates who play a role in introducing innovation, %	Percentage of graduates working in highly innovative workplaces and playing a role in introducing innovation, %
Czech Republic	49,835	80,801	46,028
Hungary	43,638	62,99	33,838
Poland	63,913	67,921	48,764
Innovation type: Technology, tools or instrument			
Czech Republic	37,30	48,30	26,50
Hungary	28,80	30,50	14,50
Poland	30,40	18,80	10,70

Source: OECD Stat (2021).

By type of innovation technology, tools, and instruments in the Czech Republic 37.3% of graduates work in a highly innovative environment, while in Hungary it is 28.8 and in Poland 30.4%. At the same time, the proportion of graduates who play a role in presenting innovation is 48.3% in the Czech Republic, 30.5% in Hungary, and 18.8% in Poland. Thus, countries differ in the level of innovativeness of teaching in HEIs and the level of student involvement in innovation development. Table 3 shows the teachers' approximate estimates of the time (in 60 min) to perform various tasks in student learning, by teaching exception.

Table 3. An approximate teachers' estimates of time (in 60 min) to perform various tasks during student learning, except for teaching

	Number of respondents, persons	Span (maximum - minimum)	Minimum	Maximum	Average number of hours	Standard deviation, hours
Hours spent on tasks Indiv. planning or preparation of lessons	5956	60	0	60	7,31	5,354
Hours spent on tasks Team work and dialogue w. colleagues within school	5955	72	0	72	2,04	2,236
Hours spent on tasks Marking correcting of student work	5954	60	0	60	4,33	3,369
Hours spent on tasks Counselling students	5956	50	0	50	2,16	2,122
Hours spent on tasks Participation in school management	5953	50	0	50	,83	3,165
Hours spent on tasks General administrative work	5953	50	0	50	2,79	3,255
Hours spent on tasks Professional development activities	5949	90	0	90	1,91	3,123
Hours spent on tasks Communication and co-operation with parents	5951	50	0	50	1,09	1,541
Hours spent on tasks Engaging in extracurricular activities	5945	72	0	72	1,20	2,953
Hours spent on tasks other work tasks	5878	68	0	68	1,26	2,829
N of valid (per list)	5866					

a. Country ID - Numeric Code = Czech Republic

Source: OECD TALIS (2021).

The following pedagogical technologies of the quality control system are most often used in HEIs: observation of the teaching process by the HEIs administration or by members of the HEIs management (82.8% of teachers reported this type of quality control), assessment of student learning results (e.g. performance results, project results, test scores) (60.5% of teachers reported this form of quality control), self-assessment of teacher's own work (analysis of own presentations or videos) (54.1%), external student results (national tests) (44.7%), student responses to the questionnaires (12.6%).

In general, it is the HEIs administration or management that performs quality control of HEIs training, because all types of pedagogical verification technologies account for the highest percentage of "yes, being used". Also, fellow teachers perform quality control of teaching and student learning. In doing so, HEIs use different forms of control simultaneously (e.g., both external HEIs review and administration or peer review).

Table 4. Share of the types of quality control used in Czech universities by HEIs teachers' responses, % of control technologies used by control bodies

	External individuals or bodies	HEI principal or member(s) of the HEI management team	Other colleagues within the HEI	I have never received this feedback in this HEI
Observation of my teaching	26,2	82,8	34,9	4,2
Student survey responses related to my teaching	19,2	41,0	41,4	17,0
Assessment of my content knowledge	13,2	37,8	25,2	36,1
External results of students I teach (e.g., national test scores)	27,5	44,7	12,8	24,8
HEI-based and classroom-based results (e.g., performance results, project results, test scores)	19,4	60,5	26,0	12,7
Self-assessment of my work (e.g., presentation of a portfolio assessment, analysis of my teaching using video)	6,8	26,6	14,2	54,1

Source: OECD TALIS (2021).

The results of the correlation analysis indicate that a direct significant relationship was found between the proportion of students with low levels of academic achievement and such forms of quality control: peer review of HEIs teaching (0.044), which is used in 34.9% of teachers; administration or members of the HEIs management team conducting surveys of student teaching quality (0.061), which is used in 41% of teachers; administration or members of the HEIs management team conducting external results of students (0.035), which is used in 44.7% of teachers.

Table 5. Correlation between the types of teaching quality control and low student performance (only significant correlation coefficients)

		Percentage of students with Low academic achievers
Observation of classroom teaching other colleagues within the HEI	Pearson correlation	,044**
	Meaning (double-sided)	,001
	N	5858
Student survey responses Principal or member(s) of management team	Pearson correlation	,061**
	Meaning (double-sided)	,000
	N	5668
Student survey responses other colleagues within the HEI	Pearson correlation	-,071**
	Meaning (double-sided)	,000
	N	5668
My students' external results External individuals or bodies	Pearson correlation	-,029*
	Meaning (double-sided)	,026
	N	5667
My student's external results Principal or member(s) of management team	Pearson correlation	,035**
	Meaning (double-sided)	,008
	N	5667
HEI-based and classroom-based results Principal or member of management team	Pearson correlation	,049**
	Meaning (double-sided)	,000
	N	5703
HEI-based and classroom-based results other colleagues within the school	Pearson correlation	-,041**
	Meaning (double-sided)	,002
	N	5703

** . Correlation is significant at the 0.01 level (double-sided).

* . Correlation is significant at the 0.05 level (double-sided).

a. Country ID - Numeric Code = Czech Republic

Source: OECD TALIS (2018).

The inverse significant relationship was found between the share of students with a low level of academic achievement and such forms of quality control of training: conducting a survey of students by colleagues within HEIs (-0.071) conducted in 41.4% of teachers; conducting surveys of students by external quality control authorities (-0.029) conducted in 27.5% of teachers; conducting an internal evaluation of learning outcomes by colleagues within HEIs (-0.041) conducted in 26% of teachers. At the same time, the proportion of students with low academic performance in the Czech Republic is within 1-20% - 48.2% according to faculty evaluations, within 11-30% - 28%, within - 31-60% - 10.7%.

Table 6. Percentage of students with Low academic achievers, %

	Number of students	Percent
None	495	8,2
1% to 10%	2910	48,2
11% to 30%	1690	28,0
31% to 60%	648	10,7
More than 60%	152	2,5
Total	5895	97,6
Not Reached	65	1,1
Omitted or invalid	79	1,3
Total	144	2,4
	6039	100,0

Source: OECD TALIS (2018).

Thus, despite the different pedagogical technologies of the functioning of a comprehensive system of quality control of training specialists, among students, there is a high proportion of those who have a low level of academic achievement, and the correlation coefficients indicate

a very low degree of relationship between the success of students and different types of pedagogical technologies of quality control of education.

DISCUSSION

The results of the study confirm the trends found in HEIs TQM, which integrates and embraces the interests of different stakeholders (students, teaching staff, employers, government, and municipalities) and hence is a comprehensive approach to quality management that can promote change and innovation (Brookes & Becket, 2007). Consequently, three levels of comprehensive HEIs quality control system can be distinguished in the Czech Republic: 1) national, which occurs through various forms of quality control by external stakeholders (individuals or bodies); 2) internal administrative quality control through various forms of participation by the administration or members of the HEIs management team; 3) internal quality control through various forms of teacher control within HEIs. The comprehensive system of quality control of HEIs based on the TQM approach thus ensures the formation of a highly innovative learning environment: the proportion of graduates who work in such an environment is 49%. At the same time, the level of participation of graduates in the development and presentation of innovations is 80.8%, which means the effectiveness of the TQM approach to ensure the functioning of a comprehensive system of quality control. As Vykydal, Foltá & Nenadál (2020) have stated, the EFQM model of excellence has been chosen in the Czech Republic as the appropriate basis for quality assessment in higher education institutions.

The Czech higher education system is autonomous and universities control all internal processes, including entry criteria, teaching, research programs, and quality control. Staff autonomy implies an exclusive form of academic self-governance, the state only provides funding for HEIs (Dobbins, Knill & Vögtle 2011; Dobbins & Knill, 2009). This study confirms that the quality control system of HEIs in the Czech Republic is also autonomous and mainly involves the inspection of teaching and learning by the HEIs administration or staff. However, HEIs have an independent advisory think tank at the suggestion of the OECD to deal with the competitiveness and technological progress of HEIs. HEIs in the Czech Republic also have a state accreditation body that consists exclusively of academics and thus excludes interested parties. However, more significant in controlling the quality of training is an array of aspects that have not changed since 1999 in the country due to the Bologna process. These include the power of the professoriate, strong collegial control, the dominance of academia in governing bodies, and the lack of entrepreneurship in governance. Kabók, Radišić & Kuzmanović (2017) classify the Czech Republic as "Countries with acceptable higher-education competitiveness and commitment towards adequate functioning of higher education according to the higher-education objectives".

CONCLUSION

This study has revealed the differences between the countries (the Czech Republic, Poland, and Hungary) in terms of the level of innovativeness of HEIs teaching and the level of involvement of students in the development of innovations. The most commonly used pedagogical technologies of the system of quality control in HEIs in the Czech Republic are the following: observation of the teaching process by the HEIs administration or by the members of the HEIs management (82.8% of teachers reported this type of quality control), assessment of student learning (60.5%), self-assessment of teacher's own work (54.1%), external student results (national tests). Despite the different pedagogical technologies of the functioning of a comprehensive system of quality control of training, there is a high proportion of students who have a low level of academic performance, and the correlation coefficients indicate a very low degree of relationship between the success of students and different types of pedagogical technologies of quality control of education. In the Czech Republic, three levels of comprehensive quality control system of HEIs can be distinguished: 1) national quality control which takes place through various forms of quality control by external stakeholders (individuals or bodies); 2) internal administrative quality control through various forms of participation by the administration or members of the HEIs management team; 3) internal quality control through various forms of teacher control within HEIs. A comprehensive system of quality control of HEIs based on the TQM approach thus provides the formation of a highly innovative learning environment.

REFERENCES

- Brookes, M. & Becket, N. Quality management in higher education: A review of international issues and practice. *International Journal of Quality Standards*, 2007, 1(1), 85-121.
- BAKHMAT, N. V. et al. Multimedia education technologies usage as the condition for quality training of the managers of socio-cultural activity. *Information Technologies and Learning Tools*, 2018, 64(2), 98-109. Available at: <https://doi.org/10.33407/itlt.v64i2.2027>. Access: May 28, 2021.
- HANABA S.; BAKHMAT N. Methodological orientations and educational strategies in the formation of the modern age thinking. *Philosophy* 2020, 29(3), p. 277-285.
- CHUCHALIN, A. I. & ZAMYATIN, A. V. Higher education institution integrated Quality management system. *International Journal of Quality Assurance in Engineering and Technology Education (IJQAETE)*, 2011, 1(1), 30-43.
- DOBBINS, M. & KNILL, C. Higher education policies in Central and Eastern Europe: convergence toward a common model? *Governance*, 2009, 22(3), 397-430. Available at: <https://doi.org/10.1111/j.1468-0491.2009.01445.x>. Access: May 28, 2021.
- DOBBINS, M.; KNILL, C. & VÖGTLE, E. M. An analytical framework for the cross-country comparison of higher education governance. *Higher education*, 2011, 62(5), 665-683.
- GABDRAKHMANOVA, R. G.; KALIMULLINA, G. I. & IGNATOVICH, V. G. Professional pedagogical education quality management. *International Electronic Journal of Mathematics Education*, 2016, 11(1), 103-112.
- KABÓK, J.; RADIŠIĆ, S. & KUZMANOVIĆ, B. Cluster analysis of higher-education competitiveness in selected European countries. *Economic research-Ekonomska istraživanja*, 2017, 30(1), 845-857.
- MAHMUD, S.; BRETAG, T. & FOLTÝNEK, T. Students' perceptions of plagiarism policy in higher education: A comparison of the United Kingdom, Czechia, Poland and Romania. *Journal of Academic Ethics*, 2019, 17(3), 271-289.
- MARINGE, F. The meanings of globalization and internationalization in HE: Findings from a world survey. *Globalization and internationalization in higher education: Theoretical, strategic and management perspectives*, 2010, 1, 17-34.
- NURMANOV, A. A Managing the Quality of Training of Pedagogical Personnel's on the Basis of TQM- (Total Quality Management): On the possibilities of using modern information and communication technologies in improving the assessment competence of future teachers. *Archive of Scientific Publications JSP*, 2020.
- OECD & WORLD BANK. *Cross-border tertiary education: a way towards capacity development*, 2007. Available at: <https://www.oecd.org/education/innovation-education/cross-bordertertiaryeducationawaytowardscapacitydevelopment.htm>. Access: May 28, 2021.
- OECD. Teaching and Learning International Survey (TALIS) 2018 Teacher Questionnaire, 2018. Available at: <https://www.oecd.org/education/school/TALIS-2018-MS-Teacher-Questionnaire-ENG.pdf>. Access: May 28, 2021.
- OECD Stat. Part 1 - Comparing innovation in education with other sectors, 2021. Available at: <https://stats.oecd.org>. Access: May 28, 2021.
- OECD TALIS. The OECD Teaching and Learning International Survey TALIS 2018 Data, 2018. Available at: <https://www.oecd.org/education/talis/talis-2018-data.htm>. Access: May 28, 2021.

- Pakhomova, T. O., Komova, O. S., Belia, V. V., Yivzhenko, Y. V., & Demidko, E. V. Transformation of the pedagogical process in higher education during the quarantine. *Linguistics and Culture Review*, 2021, 5(S2), 215-230.
- Pařová, D., & Vejačka, M. Improving the Quality of Entrepreneurial Education by ICT Education of HEI Pedagogical Staff. In *2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO)* (p. 564-569). IEEE, 2020. Available at: <https://doi.org/10.1109/IACC.2017.0156>. Access: May 28, 2021.
- Rahnuma, N. Evolution of quality culture in an HEI: critical insights from university staff in Bangladesh. *Educational Assessment, Evaluation and Accountability*, 2020,32(1), 53-81.
- Savkova, V., Mora, M., Gómez, J. M., & Pampuha, I. Conceptual design of QMM-HEI-SP: a quality management model for HEIs students' performance. *International Journal of Information and Decision Sciences*, 2017, 9(3), 247-275.
- Smuts, R. G., Lalitha, V. M., & Khan, H. U. Change management guidelines that address barriers to technology adoption in an HEI context. In *2017 IEEE 7th International Advance Computing Conference (IACC)* (p. 754-758). IEEE, 2017, January.
- Suradi, N. R. M., Kahar, S., & Jamaluddin, N. A. A. Identification of software quality characteristics on academic application in higher education institution (HEI). *Journal of Telecommunication, Electronic and Computer Engineering (JTEC)*, 2018,10(2-7), 133-136.
- UNESCO *Guidelines for quality provision in cross-border education*. Paris: UNESCO Publishing, 2005.
- Varonis, E. M. Most courses are not born digital: An overview of the Quality Matters peer review process for online course design. *Campus-Wide Information Systems*, 2014.
- Vykydal, D., Folta, M., & Nenadál, J. A study of quality assessment in higher education within the context of sustainable development: A case study from the Czech Republic. *Sustainability*, 2020,12(11), 4769.
- Wihlborg, M., & Robson, S. Internationalization of higher education: Drivers, rationales, priorities, values and impacts. *European Journal of Higher Education*, 2018, 8(1), 8-18.

Complex system of quality control of specialists' training at HEI: project organization and functioning

Complexo sistema de controle de qualidade da formação de especialistas nas IES: organização e funcionamento de projetos

Sistema complejo de control de calidad de la formación de especialistas en IES: organización y funcionamiento del proyecto

Resumo

O artigo tem como objetivo formar as características especiais do uso de tecnologias pedagógicas de concepção e funcionamento do complexo sistema de controle de qualidade da formação de especialistas em ISIs. A metodologia do artigo baseia-se na análise estatística dos resultados do levantamento de professores do IED (2018) da OCDE talis (2018) da República Tcheca, que nos permite determinar as tecnologias pedagógicas do funcionamento de um sistema abrangente de controle de qualidade de especialistas em formação em ISIs. A amostra incluiu 6.039 professores do IES, dos quais 72,4% eram mulheres e 27,6% eram homens. Os resultados mostram diferenças entre os países (República Tcheca, Polônia e Hungria) no nível de inovação do ensino de HEIs e no nível de envolvimento dos alunos no desenvolvimento de inovações.

Palavras-chave: Tecnologias pedagógicas. Controle de qualidade do treinamento. Sistema de controle de qualidade. IES. Qualidade da formação de especialistas.

Abstract

The article aims to form the special features of using pedagogical technologies of designing and functioning of the complex system of quality control of specialists' training in HEIs. The methodology of the article is built on the statistical analysis of the results of the OECD TALIS (2018) survey of HEIs teachers in the Czech Republic, which allow us to determine the pedagogical technologies of the functioning of a comprehensive system of quality control of training specialists in HEIs. The sample included 6,039 HEIs teachers, of whom 72.4% were women and 27.6% were men. The results show differences between the countries (the Czech Republic, Poland, and Hungary) in the level of innovativeness of HEIs teaching and the level of involvement of students in the development of innovations.

Keywords: Pedagogical technologies. Quality control of training. Quality control system. HEIs. Quality of specialists' training.

Resumen

El artículo tiene como objetivo formar las características especiales del uso de tecnologías pedagógicas de diseño y funcionamiento del complejo sistema de control de calidad de la formación de especialistas en IES. La metodología del artículo se basa en el análisis estadístico de los resultados de la encuesta TALIS (2018) de la OCDE a profesores de IES en la República Checa, que nos permiten determinar las tecnologías pedagógicas del funcionamiento de un sistema integral de control de calidad de la formación de especialistas en IES. La muestra incluyó a 6.039 docentes de IES, de los cuales el 72,4% eran mujeres y el 27,6% eran hombres. Los resultados muestran diferencias entre los países (república checa, Polonia y Hungría) en el nivel de innovación de la enseñanza de las IES y el nivel de participación de los estudiantes en el desarrollo de innovaciones.

Palabras-clave: Tecnologías pedagógicas. Control de calidad de la formación. Sistema de control de calidad. IES. Calidad de la formación de especialistas.