2022 European Quality Assurance Forum

Shaping or sharing? QA in a value-driven EHEA

Hosted by West University of Timisoara, Romania
17-19 November 2022

Call for contributions: Paper submission form

Deadline 22 July 2022

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Proposal

Title: Quality assurance and key performance indicators for dual higher education study programs – needs analysis for the development and implementation of higher education of dual study programs in Serbia

Abstract (150 words max): Dual study programs are hybrid form of higher education, which offer the participant the opportunity to complete a degree program at a higher education institution whilst simultaneously receiving a certification of practical vocational training or work experience in a company. Dual model study programs in higher education are viewed as an important educational system in German-speaking countries, yet for the majority of other European countries dual education is mostly implemented in secondary educational level. The recognized need for dual education at higher education level led to the establishment of the required legislative in Republic of Serbia and pressure to develop this type of study programs. While basic requirements for the accreditation of dual professional higher education study programs were adopted by Serbian National Council for Higher Education, the key performance indicators for the evaluation and self-evaluation of dual professional higher education study programs are still to be developed.

The corresponding sub-topic of the proposal:Public confidence in higher education institutions as autonomous, scientific institutions

Has this paper previously been published/presented elsewhere? If yes, give details. NO

Text of paper (3000 words max):

Quality assurance and key performance indicators for dual higher education study programs – needs analysis for the development and implementation of higher education of dual study programs in Serbia

Abstract

Dual study programs are hybrid form of higher education, which offer the participant the opportunity to complete a degree program at a higher education institution whilst simultaneously receiving a certification of practical vocational training or work experience in a company. Dual model study programs in higher education are viewed as an important educational system in German-speaking countries, yet for the majority of other European countries dual education is mostly implemented in secondary educational level. The recognized need for dual education at higher education level led to the establishment of the required legislative in Republic of Serbia and pressure to develop this type of study programs. While basic requirements for the accreditation of dual professional higher education study programs were adopted by Serbian National Council for Higher Education, the key performance

indicators for the evaluation and self-evaluation of dual professional higher education study programs are still to be developed.

Introduction

Across the Europe there is an obvious need to establish and strengthen a knowledge alliance between academic organizations, industrial enterprises and chambers of industry and commerce to ensure better labour market intelligence and improve innovation capacities of the academic and industrial stakeholders. Education providers are challenged to regularly update engineering curricula in order to respond to the rapidly changing business and technological environment (1). Work-based learning at higher education level is emerging as a win-win model of collaboration between higher education institutions (HEIs) and industry. Higher education institutions benefit from the opportunity to develop flexible and responsive curricula focused for acquiring current labour market-related skills applying dual model of study (1,2). In particular, this holds true for the engineering and applied sciences higher education institutions. On the other hand, companies and entrepreneurships with the capacity to join higher education process benefit from the inclusion of students into their working processes. Work-based learning help companies to overcome the lack of skilled workers, to improve the quality of workforce, easier recruitment and cost-effectiveness. Through the cooperation with HEI, companies can affect the formation of the curriculum adding the desirable knowledges and skills.

There are several forms of introduction of the work experience into higher education study programs, including internships, apprenticeships, practice courses etc. However, the highest level of incorporation of real-life work experience into education is offered in dual model study programs. Dual study programs are an emerging hybrid form of higher education, which offer the participant the opportunity to complete a degree program at a higher education institution whilst simultaneously receiving a certification of practical vocational training or work experience in a company (2). Dual studies substantially differ from "part-time" model of studies or working while studying concept when the type of work and the study program can be different. Crucial characteristic of dual studies is to make professional internship an integral part of the study programs (2–4). Students are enrolled/sign a contract that makes them studying at two different locations – at the higher education and the company. Dual education treats the company as a learning environment for students along with their university. Thus, dual higher education has to support the needs of the triangle: student-HEI-world of work, fulfilling the legal requirements of both higher education and labour legislative. Importantly, students are benefiting from widening of the educational opportunity through the dual model. In particular, students of poorer socioeconomic background have wider spectrum of possibilities to study and work, which increases their inclusion into higher education.

Currently in Europe, dual model study programs in higher education are viewed as an important educational system in German-speaking countries, yet for the majority of other European countries dual education is mostly implemented in secondary, but not tertiary, educational level (3). The recognized need for dual education at higher education level led to the establishment of the required legislative in different European countries and pressure to develop this type of study programs at the university level. Consequently, it opens the question of the quality assurance for these study programs with particular specificity in implementation.

Dual model education in Serbia

The concept of dual education is not a novelty. It started at the beginning of the 20th century at University of Cincinnati, USA, that introduced dual program for students of mechanical engineering in a near-by factory producing mechanical tools and further spread to English speaking countries. In Europe, the first and the most prominent dual education system was developed in Germany when they formed Baden-Württemberg Cooperative State University (in German: Duale Hochschule Baden-Württemberg, DHBW), as well as the successor of the Professional Academic of the Federal Unit Baden-Württemberg (Berufsakademie), founded in 1974 as a new educational institution (3).

In Serbia there is a long tradition of work-based learning at the level of secondary vocational education. However, the legislative covering this area is adopted only in 2017 (5). Concerning the higher education, The Higher Education Law of Republic of Serbia from 2017, provides ways to institutionalize the

cooperation between companies and higher education institutions, facilitating the work-based learning. Accreditation standards in Serbia include mandatory internships in all professional study programs. Finally, The Dual Model of Studies in Higher Education Law of Republic of Serbia was adopted in 2019 (6). Accordingly, the accreditation standards for study programs were updated and first dual model study programs in Serbia were accredited in 2021, majority of them in the academies of applied studies.

The attempts of higher institutions to develop dual study programs often revealed difficulties in finding the companies with the capacity and motivation to accepts students for work-based learning. As well, revealed is a need for the establishing of the system for the efficient and uniformed accomplishing of the paperwork required for the inclusion of students in the working processes (contracts, learning agreements, monitoring procedures, payment negotiations, work safety procedures etc.). Concordantly, the development of the basic training program for the mentors from the companies is recognized as a need. Even more, it become obvious that often companies cannot immediately recognize the benefits from the involvement of students in their working processes. Even in the highly socially responsible companies the legally established payment rate for the students were recognized as a significant financial burden for small enterpriser.

All these difficulties revealed the need for the establishment of the quality assurance system for the dual higher education. While basic requirements for the accreditation of dual professional higher education study programs were adopted by Serbian National Council for Higher Education, the key performance indicators for the evaluation and self-evaluation of dual professional higher education study programs are still to be developed.

Parameters for quality assurance in dual higher education

The accreditation system ensures the quality of higher education institutions and study programs through the ensuring compliance with the minimum standards. However, adherence to the minimum standards in the academic community cannot be considered as the ultimate indicator of quality. On the contrary, quality as "excellence" in achieving its performance is an academic approach, according to which only the highest levels of quality are understood as realized true academic quality. Accordingly, the ranking of higher education institutions and study programs recognizes excellence as a ranking category (7,8).

Key performance indicators are instruments for performance monitoring and assessment at higher education institutions (9). Their main objective is to make quality conclusions in an objective manner and to prepare a work plan for the future. Measuring, ie analyzing indicators requires systematic planning and execution; a plan for measuring and defining baseline values, as well as benchmarks whose comparisons assess the improvement of the institution's performance. Establishment of key performance indicators is a first step in rewarding excellence in learning, teaching and skills development. Thus, it is needed to develop a system for the evaluation of this specific study model that blend academic teaching with the world of work. Developed system can be subsequently used for profiling and ranking of institutions and study programs. It is clear that great diversity of potential indicators exists. It is important to have quality system in order to serve a greater variety in needs of students, the labor market and society. It is necessary to optimize selected indicators to provide values, limits and margins for both quantitative and non-quantitative indicators. This process needs to be done through several iteration, discussions and optimizations of different parameters and indicators in order to get reliable, set of performances and indicators for dual higher education study programs. Established system for performance evaluation facilitates process of dual study programs quality control, thus enabling the HEIs to easier recognize weaknesses and threats and improve their performance, striving to the excellence.

In addition to the higher education quality standards that HEI has to adhere to, the company providing training needs to take account of the minimum quality standards from when a training place is offered until the time of completion of training. Thus, quality assurance for dual education must combine the elements of QA at the HEI level, company level, but also at the intermediate level that involve chambers or other types of professional associations. At the same time, dual education QA has to take into consideration elements that affect input (equipment available at the training venue, qualification of the trainers, training plans etc.), process (learning methods, motivation of trainers etc.), output (successful

learning, final mark etc.) and outcome (transfer of what has been learned, utilization of the qualification etc.) (10).

Among cornerstones of quality assurance in company-based training are occupation principle, practical orientation and examination procedures (10). The occupation principle secures that the applicants who have completed training in a recognized training occupation have the opportunity to exercise numerous specific work tasks that are in line with the description of the qualifications. Practical orientation assume that qualifications are in line with labour market requirements and are adapted to meet current and future developments in a timely manner. Learning objectives are formulated in a technologically neutral way so as to retain validity as continuous alterations take place in the world of work. Bearing in mind that students are trained in different companies for the same final qualification, very important part of the dual education process is the examination procedure. In order to get the certification, students have to demonstrate mastery of the necessary occupational skills, possession of the required occupational knowledge and competences and familiarity with the teaching material. Thus, clear examination procedure has to be established.

In general, four quality dimensions are recognized for the dual higher education (4). First dimension that characterize dual higher education is study concept and learning objectives. The main added value of dual study programs is the double qualification of students through a scientific study and a practical training related to theoretical and science-based training contents and this has to be clearly visible in the program curriculum (4). Second quality dimension of dual programs is admission and support of dual students, including support measures like the option of an individual coaching or mentorship but also concrete and permanent supervisors on both sides – the HEI and the company – that support the students through their study (4). Third dimension includes quality of program design and examination. The HEIs and companies have to develop adequate educational concepts for the theory-practice-transfer- Although the HEIs has the total responsibility for the grading and the examinations, it is recommendable to have the involvement of the company stuff into examination process, particularly into final thesis development (4). Forth dual education quality dimension is program management and quality control that includes clear task descriptions and a systematic communication process between the HEIs and their industry partners, but also careful consideration of dual programs financing (4).

Conclusion remarks

In order to keep pace with the rapid technological advancement and increasing innovation pressure, Republic of Serbia higher education strategy emphases work-based learning and dual education as the pathway to create a flexible, adaptable and active learning workforce. While basic requirements for the accreditation of dual professional higher education study programs were adopted by Serbian National Council for Higher Education, the key performance indicators for the evaluation and self-evaluation of dual professional higher education study programs are still to be developed.
Establishment of the clear quality control system directed toward both HEI and companies will enable the HEIs to easier recognize weaknesses and threats and improve their performance in dual higher education, thus increasing innovative potential of the country and its harmonization with the European educational area.

Discussion questions for the session:

How to overcome difficulties in finding the companies with the capacity and motivation to accepts students for work-based learning?

What key performance indicators are relevant for the dual higher education and how to optimize selected indicators to provide values, limits and margins for both quantitative and non-quantitative indicators?

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