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**Applied Sciences Approaches in Higher
Education Institution in Kosovo**

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Abstract: In a fast-changing global economy where the path to employability and competitiveness is determined by the ability to apply know-how knowledges and skills, a closer cooperation between education providers and businesses is inevitable in order to have employment growth and economic development. Study programmes that are focused on applied sciences and interlink their curricula with labor market, and orientated toward practice and cooperation with the industry, prepares students to faster enter in the market and as such increases employment of graduates. Education with applied science approaches focuses on development and strengthening of students' skills, research, innovation, and knowledge the way the economy functions, the demands of the market and steps for creation of values. In Kosovo, programmes with applied study approaches, have not been very common, and currently there is only the University of Applied Sciences in Ferizaj (UASF), as a public university that offers applied study programmes, whereas at the University of Prishtina (UP) there are some individual initiatives with the focus on applied sciences.

Keywords: education; applied science; employability; businesses; industry; labor market; knowledge; skills

1. Introduction

Education is the basis for development of human capital and strengthening personal development. Education enhances the lives of individuals and improves the society as a whole, (Baum, Ma & Payea, 2013), it supports individuals to develop communications, leadership, decision taking, creativity, team working and other skills in order to face the changes of the world, and reflect these skills and experiences to improve employment prospects (Zhou, 2016). 'Knowledge, skills and competences have to be maintained and refined in order to keep pace with the constantly changing outside world' (EHEA website).

Applied study programmes also include elective courses and programs on entrepreneurship (ta et al. 2016) with a focus on problem-based learning (Tan & Ng, 2006) with students in a centre, and project-based learning (Jones & English, 2004), by giving students the opportunity to be engaged directly in projects. It includes interaction and increase of cooperation between universities and industry for development of student's competencies on business approach and business start-up (Guimón, 2013).

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For the improvement of the applied study programmes, it is necessary to establish and increase cooperation between the Higher Education Institutions (HEIs) and industry, in order to support the demands of the business (Zavargo & Soo, 2009), and make sure that graduates' qualifications meet the expectations of the labor market and as such increase employability. Experiences have proved that involvement of the businesses in academia and in the development of curriculum, focusing on supporting the knowledge-based economy (Zavargo & Šumić, 2011) will enhance the knowledge, innovation and prepare graduates to be ready for work.

Applied study programmes have not yet been very common in Kosovo. UASF, currently is the only public University that offers applied study programmes in Kosovo. UASF, organizes learning combined with practical work and reflects local economic needs in the curriculum and study programmes. UASF together with international and local partners organizes different academic and business activities, and this ensures close partnership and cooperation for both institutions.

Apart from the UASF, there are some individual initiatives at University of Prishtina (UP) Faculty of Mechanical Engineering (FME), Faculty of Civil Engineering and Architecture (FCEA) and some other Faculties.

2. The Legal Framework in Kosovo

The Kosovo Higher Education System is regulated by the 2011 Higher Education Law. The current Law does not have any provisions on applied sciences, nor for the Universities like UASF operating with applied study programmes, and as such it does not provide much opportunities for HEIs development on applied sciences. The Law on HEIs has been revised in 2018 and the working group agreed to include in the new Law provision on Universities of Applied Sciences (UAS), however it is still not known to which extent the revised Law includes provisions on applied sciences and programmes. Inclusion of special provisions on applied science in the new Law, for UASF and other Universities that in the future are developed toward profiling their programmes will be vital for operation, accreditation, promotion and awareness raising of young generation on the benefits of education in applied sciences.

Another document that guides medium-term development of education in Kosovo, is the Kosovo Education Strategic Plan 2017-21. KESP 2017-21 makes specific reference on development of study programmes that reflect labour market needs, inclusion of practical classes and scientific research. It calls for increasing of cooperation between Universities and business community so the graduates are prepared with skills and knowledges needed in the labor market, and are in line with business needs for increasing employment and economic development of the country (KESP 2016).

Unlike Kosovo, UAS in Austria operates under the University of Applied Sciences Studies Act (*Fachhochschul-Studiengesetz – FHStG*). The Federal Ministry of Education, Science and Research (BMBWF), and other legal entities under public law provides degree programmes for the UAS, and other private entities that offer UAS degree programmes (HERAS Project, Brochure, 2018). The Agency for Quality Assurance and Accreditation in Austria (QA Austria) is responsible for accreditation of applied science programmes. With regard to funding there is a mixed system, part of the funding comes from the Federal Government and part it comes from the UAS providers like regional territorial authorities or other public and private institutions (*Bundesgesetz über Fachhochschul-Studiengänge, Fachhochschul-Studiengesetz – FHStG 2019*) (HERAS Project, Brochure, 2018)

3. Implementation of Applied Study Programmes in Kosovo Universities

University of Applied Sciences in Ferizaj (UASF)

UASF delivers applied study programmes with curricula developed in close cooperation with the industry and ensures that practice compliments theory and students knowledges and skills are in line with the needs of the market (UASF Strategy 2017). The UASF approach is more interdisciplinary and practice result oriented in order to meet the society demands. UASF main focus and objectives is professional development of student, linked with professional practices, and prepare graduates for professional work. Whereas, the benefit for industry is that graduates are ready to enter in the market and there is no need for further investment on training and coaching, and have general knowledge and understand the progress and challenges of businesses.

UASF for more than a decade is in close collaboration with the Salzburg University of Applied Sciences (SUAS) - Fachhochschule Salzburg. Both Universities has benefited a lot through the exchange of good practices, knowledge transfer, mobility and enrichment of student education with real-business experiences.

All these good practices with the aim to further enrich theory with practice, UASF has translated into concrete steps by establishing cooperation with local and international businesses, where both parties benefit by further advancing the theoretical part with concrete practices and development of business activities. Through MoU signed UASF students finish internship in different businesses, develop theses/ research, practical work, as well as UASF is engaged in supporting the industries through their engagement (UASF Strategy, 2017).

Following signing of MoUs with different businesses, UASF in 2016 established Industrial Board, which consist of members from industry and other different businesses (UASF Strategy 2017). The goal of the board is to increase the quality of education, with the activities focused on providing advice and suggestion to the Senate within the University on all matters including the revision of curricula in line with the labor market needs, and support realization of the professional practices in their businesses. Other activities of the board are cooperation with UASF on research, innovation, project development and coordination, and development of joint projects. The Board also support UASF students with scholarships and other types of funding for research.

UASF partnership with the industry resulted with successful accomplishment of plenty of activities, as the organization of consultant sessions with the Board for revision of the study programmes, preparation of new programmes in line with the business needs, organization of internship, students visit to the companies, organization of the exhibition jointly with companies, and preparation of job fair with plenty of possibilities for UASF graduates (UASF Strategy, 2017).

Faculty of Mechanical Engineering (FME)

FME as part of the UP Hasan Prishtina, with the oldest engineering disciplines in thermoelectric and thermal engineering, constructions and mechanization, communication, renewable resource systems, and mechanics to design and manufacture machines and devices of all types. The programmes offered at the FME aim to provide knowledge based on practice as well as professional training.

In the past FME cooperated with numerous economic organizations and business partners inside and outside Kosovo and together identified the requirements of the economy for development of training programmes and upgrading of student's skills in different levels. This tradition of cooperation continues today, but with a smaller intensity, and currently the focus of the FME is cooperation with the small private economy, and other economic entities of Kosovo. For the purpose of providing professional-

scientific assistance to this economy, numerous meetings and round tables were organized with private economy representatives. FME has recently, established the Innovation Centre, and is working toward establishment of cooperation with innovation companies (project ALLED, Kosovo 2016).

The Faculty of Agriculture and Veterinary (FAV)

FAV is part of the University of Prishtina “Hasan Prishtina”, with the disciplines in agro-economy, biotechnology, plants, vineyard and veterinary. Agriculture is considered as the key sector in providing food security and plays a significant role in the economic activities in the country. Within the Faculty there were some initiatives of the academic staff for joint projects with animal and food industry addressing relevant and immediate topics in veterinary and public health. In addition, seminar have been organized with the food industry and relevant executive and legislative institutions in this field of the aimed research. However, these initiatives were more at the individual rather than at the Institutional level (project ALLED, Kosovo 2016).

FAV is essential for development of student’s agriculture skills and knowledge, however within FAV there are no training programmes which prepare graduates for these jobs in the field of agriculture, and there are no measures in place to create the right skill sector competences (project ALLED, Kosovo 2016).

Faculty of Civil Engineering and Architecture (FCEA)

FCEA is part of the University of Prishtina “Hasan Prishtina”, with section on Civil Engineering and Section of Architecture. FCEA is equipped with laboratory of material and construction, and in order to be closer with the industry in 2015 established the advisory board, with the mission to support students with the internship and other areas of interest. This tradition of cooperation at the level of institution was not very active, however academic staff with their own initiative have started to establish cooperation with businesses, so students and graduates are able to finish internship in different businesses based on the area of study (project ALLED, Kosovo 2016).

3.1. Donors Support on Applied Sciences

Among the main donors supporting the HEIs and applied sciences in Kosovo is the Austrian Development Cooperation (ADC/ADA), with projects activities focused on innovation, research, labour market needs, cooperation, and applied sciences. Other donors that supported applied sciences are UNICEF – “Innovation Lab Kosovo”, EU through Erasmus + and Horizon 2020.

With the ADC/ADA funds, during the HigherKOS project “Modernisation of higher education and improvement of the system of research in the field of forest, energy and environment protection” which was implemented during the years 2013-2015, the project activities were mainly focused on supporting the foundation of the UASF as an independent academic institution in 2015. In addition, project also supported improvement of cooperation between Universities and industry, development of applied study programmes, and modernisation of teaching methodologies. For the establishment and development of these reforms in the education system focusing on applied sciences, a fundamental role has played Salzburg University of Applied Sciences (FHS). New curriculum has been developed together with the support of FHS with study programme more attractive and modern, workshop for improvement of academic and management capacities were held, there were mobility of staff and students from both Universities, organization of job fair and other activities which contributed to further enhancement and development of the staff and students’ capacities and at the same time strengthened cooperation with industry (project HigherKOS Kosovo 2015).

Cooperation between UASF and FHS continued also during implementation of the project HERAS – Higher Education, Research and Applied Science (2017-2020), funded by ADC/ADA. During this project applied study programmes have been developed, workshop with industry have been organized, scientific conference organized, and applied science work has been promoted throughout Kosovo through the round table promotion event (project HERAS, Kosovo 2017).

With support of UNICEF – “Innovation Lab Kosovo”, FME and the Faculty of Civil Engineering and Architecture students implemented project to increase the awareness on environment by combining technology and plant.

With the support of HERAS project Mechatronics students developed an electrical wheelchair for the people with disabilities. Through this project student’s skills have been developed on project planning, by working closely with business that supported in designing and development of the wheelchair (HERAS Project, Brochure, 2018)

4. Discussion and Recommendations

Wider implementation of applied science approaches among the HEIs creates condition for building students’ capacities that are closer to the real labour demand, labour market position, and practical teaching aspects. Such implementation provides a more efficient and sustainable approach, especially in the context of preparing graduates for the labour market needs, job growth, and providing with skills and knowledges relevant to the sectors.

Creation of the work force that fits to the market means finding ways to capture and institutionalize the university-industry cooperation. It requires intensification of the dialogue between businesses and universities, and that in the three main areas as identified by the European Parliament: lifelong learning, mobility and partnership and good practice. Lifelong learning includes formal and informal leaning, knowledge, skills, throughout our life, needed to challenge the future and knowledge-based society and economy. From the side of Universities, it requires creation of the flexible, student-centered learning as well as fostering cooperation with businesses for development of education programmes.

Fostering cooperation between university and industry is very important for transferring knowledge and technology, where the needs of both parties are merged to achieve results, namely in one side creation of the studies that reflect market needs and on the other side development of innovative processes and products. ‘The contribution of higher education to jobs and growth, and its international attractiveness, can be enhanced through close, effective links between education, research and business the three sides of the ‘knowledge triangle’ (European Commission, 2011, p. 10).

Share and identification of good innovative practices between university and industry builds the bridge between demands and supply on the labour market. Such efforts can result in development of joint products and activities, collaboration on research and other services.

Implementation of the applied sciences approaches in Kosovo requires institutional and systematic approach for creation of condition, provisions, and providing continues support to HEIs. It requires, planning, development and implementation of applied study programmes, with curricula developed together with the industry in order to prepare graduates for the labour market. However, implementation of applied sciences approaches faces a number of challenges and that at the level of educational system, institutional and individual aspect.

The applied sciences degree programmes in Austria are supported and regulated by the highest state organ, namely the BMBWF and AQ Austria. In addition, the provision in the legislation contains the main principles for designing studies, scientific doctrines, scientific methods, freedom of teaching for organization of courses, content, methodology and other aspects under which the UAS and institutions offering University of Applied-Sciences degree programmes operates at university level

In the case of Kosovo where the applied sciences approach at the HEIs are at the initial level, the system plays a significant role. At the policy level it requires compilation of an overview of national priorities in terms of economic sectors on the basis of national-level, and establishment of an overarching strategic plan for applied sciences approach at the HEIs. On the other hand, establishment of an overview on the labour-market needs, requires collection and use of the macro-level data as well as micro-level information, and propose a plan for full stakeholder engagement related to the applied sciences approach and practices. Ministry of Education Science and Technology (MEST) needs to develop regulations and other policy documents that supports applied sciences approach, with specific objectives and target plans.

At the institutional level, Universities in Kosovo need to develop new study programmes in terms of evidence-based demand analysis, strengthen university-industry cooperation for new projects and curriculums, and enhance cooperation in research and other projects. Universities need to create new structures for planning, focusing on providing learning and teaching that is more related to society and economy, by building student knowledge and skills relevant to the labour market needs. Creation of the partnership and mobility of staff of Universities in Kosovo with Universities in Europe, like in the case of the UASF with SUAS, will have an impact in the development of academic and scientific capabilities of the students and prepare them for labour market in the region.

At the individual level, academic staff needs to mainstream their knowledge and utilize as institutional effort, whereas HEIs institution should be interested to use such knowledge. Motivation should come from both sides, so both academic staff and institutions benefit at the same time. In one side it is the culture and approach of HEIs toward students-cantered leaning, research, entrepreneurship and projects development, and on the other side the academic staff should reach the statute where they urge for continues academic development and engage in on-going exchange of information with other staff on projects and other initiatives. Applied science approaches in HEIs in Kosovo determines a clear road for development in the future, where the challenges and opportunities are addresses thoroughly and used for building reforms and opportunities in HEIs.

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