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ERASMUS+ program supporting project for enhancing university-industry collaboration in South Africa

The aim of the three-year-long Erasmus+ SUCSESS project is to improve the employability of university graduates in South Africa through collaboration between Higher Education Institution (HEI) students, teachers, and the industry in knowledge triangles. South African universities are still relying on rather traditional pedagogies, where huge groups of students are listening to lectures. The focus is on increasing knowledge which is tested through written exams. After graduation, the competition for the best jobs is severe. The South African partner universities in the SUCSESS project have acknowledged the need to develop the work life competences of the students to improve their employability.

Improved employability through strengthening the knowledge triangle

Employability can be defined as “a set of achievements- skills, understandings and personal attributes- that make graduates more likely to gain employment and be successful in their chosen occupations in a way that benefits the graduates themselves, the industry and the community” (Yorke 2004; Yorke & Knight 2006). Work-readiness is strongly related to employability. Work-readiness has been described as a set of complex attributes that allow graduates to apply their knowledge to problem identification and problem-solving when they start working. Employability is thus linked to the probability of getting a job whereas work-readiness is related to the ability to be meet the requirements of a certain position successfully.

To improve the employability and work-readiness of graduates, there is a need for HEI transformation. In the new way of thinking about the role of the HEIs, the focus will be on learning rather than on teaching, and students are required to actively take responsibility for their own learning process (Jakubik 2020; Birkle et al. 2017). Through this new way of offering education to students, they will gain competences and skills rather than just the current knowledge. Competences can be divided into (Lubbe et al. 2020; Kubler & Forbes 2006):

- Cognitive skills (identifying and solving problems)
- Generic competencies (teamwork, communication, project management)
- Personal capabilities (lifelong learning, emotional intelligence, adaptability, creativity)

- Technical abilities (digital and technological skills)
- Organisational awareness (business operation skills such as financial and commercial principles, understanding organizational culture)

The role of teachers in the transition

To reach the competences listed above, HEIs must make changes in their ways of working. Traditionally in higher education, teachers have been subjects and students objects. In contemporary pedagogical approaches both these practitioners are seen as subjects and learners seeking and providing knowledge (Jakubik 2020). Thus, the role of the teacher is changing from an expert of a substance to an expert of pedagogy and didactics (Holmberg et.al 2017). Ritalahti (2015) states that in communities of inquiry, where teachers and students are co-learners, the roles inevitably change. The change of traditional roles is not easy for any of the practitioners.

The Knowledge Triangle

The Knowledge Triangle (KT) formalises the interaction between research, education and innovation, which has been one of the core missions of HEIs. Through KTs, HEIs can enhance the generation of knowledge to meet the needs of society. Societies of today are knowledge-based whose demand of innovations, products, services, and processes is increasing (Meissner & Shmatko 2016; Vonortas 2017). Corejova, Furova, Rostasova, Kurotova & Chinoracky (2020) state that one of the missions of HEIs is to transfer innovations and technologies to the market through the cooperation between HEIs and the business sector. KTs enhance this collaboration and creativity, assuming that innovations are created in open-source networks of collaboration, and research outputs are integrated to education and business development (Mavroeidis & Tarnawska 2015).

In this article, we regard that in everyday HEI life, KT is often a grassroot activity which focuses on the cooperation between university teachers, students, and business representatives. It can also be interpreted as a tool for enhancing learning, networking and, eventually, increasing the employability of the participating students and the business know-how of teachers.

The South African setting

The concept of employability is a key issue in South African HEIs because the country is suffering from extremely high youth unemployment also among university graduates. To find out the key challenges of employability, the first phase of the SUCSESS project comprised research about university-industry collaboration carried out in the project partner countries, i.e., South Africa, the UK and Finland. The aim of the research was to find out how students, teachers and industry people perceive the value of student - industry collaboration for enhancing the competences required for future employment. In

this article we focus on the findings from the teachers' interviews only. The results are based on the gap analysis completed as the first work package of the SUCSESS project. (Lubbe et al. 2020)

The first part of the study targeting South African teachers was related to identifying work-readiness and competences important for graduates to succeed in the job market. The competences identified were the following (Lubbe et al. 2020):

- Being mature (emotionally more than age-wise)
- Having the correct mindset for the work environment
- Having the ability to accurately transfer learnt skills to a variety of situations
- Understanding that work is a long-term commitment as opposed to seasonal
- Being able to move from the role of a student to that of a professional employee

The interviews with teachers in South Africa also offered an understanding of the challenges in HEI - industry co-operation. Interviewees highlighted that cooperation with the industry calls for resources allocated for it, as it takes time to build relationships with the industry. There are obvious challenges associated with industry collaboration. First, it may be difficult to get started as the student numbers and teachers' workloads as well as the inflexible bureaucratic processes involved are overwhelming. Second, the collaboration with the industry is not incentivised, nor is it a part of the performance indicators or promotional criteria of academia, all of which may lessen the interest and motivation to devote time to finding collaboration partners and projects from the industry. Further, some teachers also fear that students misbehave and show a lack of interest, which may further hinder collaboration efforts with the industry. Finally, teachers are worried that industry could only agree to cooperate in exchange for free labor, without giving much thought to relevant competences and skills.

Despite these hurdles, the South African teachers see clear benefits in cooperation with the industry: the teaching will potentially become more relevant and up-to-date. Also, there might be increased research opportunities in collaboration with the industry.

The teachers interviewed for the research also identified key factors for successful cooperation with the industry. Long-lasting and personal relationships as well as open communication between all parties were recognised as essential elements in cooperation with the industry. Mutual understanding and common goals were also mentioned as important aspects. Clear rules and structures as well as formalised collaboration agreements were seen as vital. However, the resource needs of industry collaboration must be recognised as well: teachers should be compensated for their increased efforts, e.g., through linking collaboration to performance goals. Teachers also mentioned that they need to get training in how to engage with the industry. HEIs should also offer financial resources for the collaboration activities, especially for projects that have costs involved.

Conclusion

There needs to be a shift in attitudes, a clear personal interest, and passion to develop cooperation with the industry at South African HEIs. As already experienced at HEIs in Finland, it is a demanding process which takes several years. Pedagogical development is also a process that must be supported by the management of the HEIs. If industry collaboration is voluntary, teachers must be convinced of the benefits of collaboration for their own career development as well as student learning. The former role of a teacher being an independent actor transferring her/his expertise to the student, seen as a passive object, should be encouraged to change. The optimal transformation would result in cross-disciplinary teacher teams planning student-industry collaboration activities which will enhance the competences graduates need for employability.

The research conducted in the first phase of the SUCSESS project is the starting point of the next phases of the project. The next step is to train lecturers at the partner HEIs in South Africa to pilot various student - industry collaboration projects in the following phase of the SUCSESS project. One of the key challenges identified in the research is that, especially when compared to most programmes at Finnish HEIs, South African universities are running programmes and courses with a huge number of students. The teachers lack resources to try new pedagogical approaches related to, e.g., experiential learning and learning in projects commissioned by the industry. Therefore, the SUCSESS project aims to inspire the South African lecturers to start with small and concrete changes. One of the main outputs of the SUCSESS project will be a handbook for student-industry collaboration projects in the South African context.

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