Time for a Change in the Philosophy of Higher Education: Rethinking Teaching & Learning in Higher Education in Line with Education 4.0

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Abstract

Technological advancements and innovations have resulted in significant changes in many aspects of our lives, including the manufacturing industry. These significant changes in the industry have had an impact not only on production but also on education systems. However, it may be questioned whether the higher education system, which must adapt to the evolving and changing challenges of the modern world, meets the needs of the new generation and prepares the workforce of the future. It appears that traditional teaching methods are no longer useful in the modern era. Thus, the purpose of this paper is to make recommendations that would enhance higher educational philosophy and teaching and learning procedures. This research aims to examine three potential substitute systems that could replace existing methods of teaching and learning processes where knowledge transmission is provided through teachers, which prioritizes the transfer of theoretical knowledge over the development of skills necessary for modern life. These alternative approaches are: innovative and online systems, on-the-job training, product or project based learning systems.
Key words: Innovative and online systems, On-the-job training, Product or project based learning systems, Education 4.0

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Introduction

Traditional educational philosophy and processes have always been a system that includes teaching in which teachers take an active role and learning processes in which students take a passive role. In this system, it is assumed that knowledge can be divided into parts and transferred to students in a systematic way. However, this traditional learning and teaching process is no longer functional for the modern university. Today, the philosophy of education should include a more complex system that includes teachers, students and other stakeholders. The learning environment should be more student-centred, productive, creative and also innovative. According to Skills for 2030 - OECD report (2019), there is a huge gap between the qualifications and real skills that university graduates possess. Thus, to close this gap and possibly replace current teaching and learning in higher education, the following three approaches could be helpful: (1) Innovative and online systems, (2) On-the-job training, (3) Product or project based learning systems, which allow students to practice their production skills and stay up to date with the rapidly evolving business world.

Innovative and online systems

The last decade has seen significant transformations in the contemporary university structure, for example, the emergence of new physical and digital learning spaces, the search for social and economic usefulness and applicability of what students learn, and the integration of technological advances into learning activities. Therefore, such changes necessitate changes in practices, resources and activities in education and training processes (Jiménez, 2020). The technology available today has the potential to improve the quality of education and training processes in higher education, but universities are not sufficiently utilising this potential. For regional and national development, it is no longer possible to guide and develop university students with classical teaching methods. According to Laurillard (2012), the technologies available for learning and teaching have changed significantly in the last decade, so it is inevitable that these innovations in technology will change traditional teaching processes. Education processes need to be more applied, student-centred, creative, innovative. In order to improve the quality of teaching, academicians should use modern technology and assume the role of assisting and organising the learning process rather than transferring knowledge.

The development of processes that require the use of technology such as distance education is a very critical issue universities must address soon. Sart (2013) states that the use of technology should be encouraged to solve the country's problems in education and other scientific fields. Sadi et al. (2010) state that in a modern university, there should be effective technology planning, digital libraries, online access to course resources and continuous communication with lecturers via the internet. Educational practices in universities have had to change in recent years; with technological changes, changes in spaces, resources and roles, teaching and learning activities have to change. New forms of teaching and learning need to emerge, focusing on new ways of producing more efficient and effective teaching and learning processes. Therefore, it should be realised that the classical way of teaching can no longer meet the requirements of today's world and the labour market, and more modern technologically equipped applied education processes should be adopted by universities.

On-the-job training

On-the-job training opportunities should be increased with the help of external stakeholders so that students can get to know the field in the best way and acquire professional skills First of all, the education system in which students are passive and theoretical knowledge is transferred to students through memorization has lost its functionality both in the future professional life of the individual and in the business world, and that there is a need to move to more practical applied systems in which students learn by taking part in the market. According to Bouillion & Gomez (2001), the biggest problem that educational institutions face today is that students are raised in isolation from society. He states that education and training processes are carried out away from real life and that students cannot apply the knowledge they learn at school. Ortaylı (2019), states that university graduates are not sufficiently qualified, and explains the situation by stating that students cannot acquire the needed skills since they cannot participate in real work circumstances. Laurillard (2002) also states that our teaching methods have not yet developed enough to catch up with the changes in our age. He states that the widespread and dominant teaching model is still the model in which the student is passive and is the direct recipient of knowldege, and that the dominant learning style is still trying to be realized in the form of lectures, books and homework away from technology and real life circumstances. Therefore, the students need to move to systems where they can learn by practicing on the job.

In this framework, Çelik and Aydın (2015) suggest that initiatives for university-industry cooperation should be increased since the work experiences that students will gain by performing the profession increase their perception levels and awareness. Çay et al. (2015) highlight that there is a need for intermediate staff graduated from vocational schools in many sectors, but there is a problem in the employment of qualified personnel, and the most important

reason for this is that applied vocational education cannot be provided sufficiently, and it is pointed out that students can only acquire the practical knowledge at school not the skills required by the professionIn this context, universities must move away from the traditional method of transferring theoretical knowledge and toward applications that place students in real-world work environments, giving them the opportunity to apply their theoretical knowledge and develop the skills they'll need to succeed in the business world.

Product or project based learning systems

Since there is a gap between the skills being produced by universities and those needed in the labor market, project-based and product-based teaching and learning should be another issue that has to be encouraged in higher education. These methods are very helpful in teaching students the skills required by the business world. Today the increase of unemployed people with university degrees is notable. According to the latest official data of Turkish Statistical Institute (TUIK, 2022), the number of university students withdrawing from the employment market has increased by 565,000 in 2020. The higher education aims to prepare future graduates for the working world but, on the other hand, companies need professionals look for skills that are far from those taught in the university context (Mengual-Andrés, 2013).

Product-based learning has a strong emphasis on creating the ultimate product, which propels profitable enterprises and develops entrepreneurial abilities (Santoso et al., 2023). Through group collaboration and exploration of the subject, project-based learning facilitates the development of soft skills and improves engineering language competency (Bhinder & Protsenko, 2022). Furthermore, it facilitates students' understanding of the subject matter by bridging the theoretical and experimental learning gaps (Soni & Verma, 2022). Higher education can meet labor market demands, increase student motivation and involvement, and enhance the quality of the educational process by implementing project-based learning.Project, on the other hand, is more concerned with the project development process and helps students acquire language skills as well as computer competencies (Anugraha, & Padmadewi). In addition, project-based learning improves students' hard skills, soft skills, and engineering language competency. This helps students collaborate, solve problems, and communicate effectively, which eventually helps businesses and educational institutions (Daineko et al., 2022).

Conclusion

To summarize, it is evident that more innovative systems, such as online education, more production- and application-oriented educational programs, and on-the-job training, would be more beneficial in terms of equipping students for their future. Nowadays, students should be taught more than just academic or theoretical knowledge; rather, a university education should focus on creativity, production, and the generation of new ideas. The ineffective teaching methods cannot be used in today's universities. This educational philosophy should include innovative and production-oriented (Education 4.0) systems that involve educators, learners, and other stakeholders. Product- or project-based learning and evaluation approaches may be useful for promoting student creativity and assisting them in adapting to the business world.

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