

## Dual model of learning of wood technologist as educational innovation – implementation example in Faculty of Wood Technology WULS

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**Abstract:** *Dual model of learning of wood technologist as educational innovation – implementation example in Faculty of Wood Technology WULS.* A contemporary challenge for the Polish educational system is that on the one hand education at all levels should support innovation in the economy, and, on the other hand, preparing students to cope with a rapidly changing world and provide them the knowledge and skills necessary to find the work. The paper focuses on practical implementations of educational innovation by Faculty of Wood Technology, Warsaw University of Life Sciences, which for several years adapts its educational model to the changing economic ambient conditions. Firstly, it promotes multi-sectoral educational dialogue, especially with leading entrepreneurs from the wood processing industries, as well as seeking to cooperate with secondary schools, which aims to educate the staff adequately prepared for the current requirements of the labor market.

*Keywords:* education dialogue, dual model of learning, educational innovation, furniture industry

### INTRODUCTION

Today, in every area of human activity, a searching of innovation can be observed. It is all about "getting a new product, new service or new quality" (*Drucker 1992*). In the range of education – as in other areas – they are most often associated with the process of creating or adapting new educational solutions. The need for educational innovation is associated with the need to prepare young people for the changing social and cultural reality, as well as from the need to adapt to the current situation on the labor market. In education process it should be taken into account the fact, that the activities of most companies becomes more international, as well as becoming more and more noticeable competition and the prevalence of information technologies and the need for development and innovation. These phenomena affect the need to introduce new solutions in education, whose main purpose should be to prepare young people for a new, competitive labor market.

The results of the study of Human Capital Balance (Bilans Kapitału Ludzkiego - BKL) 2012, carried out by the Jagiellonian University commissioned by PARP (Polish Agency of Entrepreneurship Development) confirms that Polish graduates are prepared to work only in theory. The present educational system does not provide them the possibility of practical application of acquired knowledge. They have lack of skills, how to manage projects, as well as they are not able to apply of new technologies at work. Therefore, in the Polish education, the need for innovation, which will focus on developing experience, professional competence, interpersonal and self-organization can be observed. It is also important systematic implementation of priority Smart growth – according to the assumptions set out in the Europe 2020 Strategy (*Strategia... 2010*) – to seek and to take innovative actions in the field of education relating to promotion of the idea of entrepreneurship, raising professional skills, as well as the elaboration of a strategy to reduce unemployment within youth.

Faculty of Wood Technology, Warsaw University of Life Sciences (WULS), to meet these challenges, introduce systematic changes both, in the way of education – including changing of study programs, as well as a multi-sectoral educational dialogue, especially with the participation of entrepreneurs or employers and universities. These consistent, innovative

and tailored to the needs of the socio-economic development of the employers actions are aimed to promote innovations in education and training and develop the competitiveness of entrepreneurship, as well as to improve the transparency of professional qualifications.

#### INNOVATIVE, MULTILATERAL CO-OPERATION IN THE FIELD OF EDUCATION

Innovative actions in the area of education are changes containing elements of novelty, introduced deliberately into the educational system in order to improve educational practice. This may be a radical change, giving a completely new product, but also partial, leading only to his improvement. Educational innovations are an innovative system, organizational or methodical solutions, aimed at improving the quality of education and acquired skills. They include even investments relating to: occupational skills, research and innovation, as well as a much wider use of information and communication technologies – that will affect the economic growth and thus contribute in solving some social problems, e.g. unemployment.

Also, very important element of the innovative and modern education is the dual learning system as well as the construction of bridges between education, science and business.

The dual (double, alternate) education aims to include in the education process of future employers, as the most interested in hiring future high school graduates. In European countries already at secondary vocational entrepreneurs are involved to support universities with their knowledge and experience. Countries with the most developed dual system are:

- Switzerland - 87% of students in vocational and technical schools participating in the dual system of learning, and only 13% in vocational school system,
- Germany - 69% of students in vocational and technical schools train at dual education system, 31% taught in vocational school system,
- Czech Republic - 58% of all students in vocational and technical schools are trained in the dual vocational training system, 42% in vocational school system,
- Hungary - over 37% of students participate in the dual system of vocational training, while in the school system of vocational training educates 63% of the students,
- Netherlands - 33% of participants are taught vocational profession in the dual educational system; in the school education system involved 67% of the students (*Kabaj 2004*).

In Poland, higher education is still based on several weeks of summer practice system, that does not meet the expectations of employers.

As already mentioned, Faculty of Wood Technology Warsaw University of Life Sciences, for several years adapts its educational model to the changing economic ambient conditions. Understanding the needs of employers regarding the graduate profile initiate a process of changing the program with a degree in wood technology and to open a new degree course: furniture - which the program was consulted with some of the biggest actors of the wood processing sector. It is worth noting that the degree course was also created because of the needs of the furniture industry, which is one of the fastest growing sector of the economy in Poland. Among the most important evidence of this is annual production of more than 2% of gross domestic product (GDP). In addition, in Poland the furniture industry employs more than 7% of employees, while the EU average emerging at less than 4% [Project POIG.01.01.01-30-022/08]. In addition, the Central Statistical Office (CSO) data for 2013 show, that, compared to 2012, employment in the industry increased by 1.9%, reflecting the constant development of furniture companies, despite the general trend of declining employment in Poland. At the same time, from many years Poland remains among the leading

furniture exporters in the world (being 4<sup>th</sup> in the world – after China, Germany and Italy, and 3<sup>rd</sup> in Europe).

This innovative approach is in line with the presented by the Collegium Mazovia, a model based on the Finnish educational standards, which is idea Agora. The concept of this model involves the construction of strong social connections in different areas of activity of university/faculty, shaping appropriate attitudes and skills of future graduates, as well as their commitment to the university/faculty after graduation.

In the case of wood technologists, process of "tying" to faculty should start already at secondary school level. In Poland, there is about 30 of wood technology profiled secondary schools. Most of them have serious problems with recruitment, because young people do not have knowledge on further education.

Innovative education of universities should start with a strong cooperation with secondary schools, from which the students are recruited. The care and patronage of the faculty shows work opportunities after graduation. For more than two years such a program is run by Faculty of Wood Technology WULS with Technikum Drzewne in Zwierzyniec, Technikum Drzewne in Garbatka Letnisko and Zespół Szkół Zawodowych Towarzystwa Salezjańskiego in Oświęcim. In these three schools there are lessons given by faculty teachers, meetings are held with the youth on the faculty, as well as teaching materials are transferred. Referring to the dual systems, faculty for several years is conducting Internships Program for students in their last year of engineering and master studies, which helped to find 50 job positions for our students over the three years.

Innovative education model for Faculty of Wood Technology WULS is based on three main pillars: employers, schools and academic staff (see Figure 1).

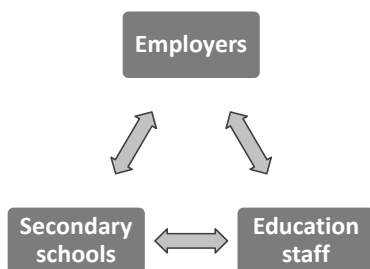


Fig. 1 Learning model on Faculty of Wood Technology (*source: own elaboration*)

The intermingling of different areas of education is not accidental at Faculty of Wood Technology WULS. This model corresponds to the patterns of Aalto University in Finland, which assumes interdisciplinarity, to build partnerships between students, staff and external ambient entities, which ensures an increase in creativity, exchange of information, increasing criticism of existing solutions.

Currently on the Faculty of Wood Technology, the incremental implementation can be observed, of opening up to the student and his adaptation to the needs of the labor market by introducing new subjects, such as project management, entrepreneurship and innovative approach to guaranteeing to student the opportunity to individual program of study during the internship. Equally important is the cooperation with entrepreneurs, not only by their participation in the internship program, frequent seminars with practitioners and field trips. The Faculty encourages employers to support secondary schools of woodworking profile. An example is the involvement of employers in the wood knowledge contest, organized by the

faculty of Wood Technology WULS for profiled secondary school students, and strongly supported by industry.

## CONCLUSIONS

The most important actions for innovative education, that are systematically implemented at the Faculty of Wood Technology WULS, include: promoting the ideas of entrepreneurship through mobility programs for young professionals, business involvement in defining the models and learning programs, as well as promoting education in directions consistent with the employers' needs. The cooperation with secondary schools is also very important, which aims to create a modern and innovative dual training model prevalent in Europe. It contributes, among others, to strengthen cooperation between schools and universities and to disseminate scientific passion, creativity and innovation of students, and to integrate the entire business society. In addition, close cooperation with business, the effect of which include changes in learning programs, gives a guarantee of effective education.

In summary it can be assumed, that, thanks to the implemented educational innovations, the knowledge that students acquire, is more practical, closer to the demands and expectations of employers, and, in the long perspective, gives the students the chance to get a good work position after graduation a such Faculty.

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**Streszczenie:** *Dualny model kształcenia technologa drewna jako innowacja edukacyjna – implementacja na przykładzie Wydziału Technologii Drewna SGGW w Warszawie.* Współczesnym wyzwaniem dla polskiego systemu edukacyjnego jest to, aby z jednej strony edukacja na wszystkich szczeblach sprzyjała innowacyjności gospodarki, a z drugiej strony przygotowywała uczniów i studentów do radzenia sobie w szybko zmieniającym się świecie i dawała im wiedzę i umiejętności niezbędne do znalezienia pracy. W artykule skoncentrowano się na praktycznych wdrożeniach innowacji edukacyjnych przez Wydział Technologii Drewna SGGW w Warszawie, który od kilku lat dostosowuje model swojej edukacji do zmieniających się warunków otoczenia gospodarczego. Po pierwsze promuje wielosektorowy dialog edukacyjny, zwłaszcza z udziałem największych przedsiębiorców z branży drzewnej, jak również dąży do współpracy ze szkołami średnimi, która ma na celu kształcenie kadr adekwatnie przygotowanych do aktualnych wymogów rynku pracy.

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