

## **Cooperation in the Direction of the Professional Educational Institution to the Center of Excellence and Innovation of Industries**

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**Abstract.** Vocational education worldwide is getting more and more attention as labour market needs for skilled employees increasingly request new and innovative approaches in vocational education. Good experience has several vocational education schools willing to share those promising findings and gain new international experience. The study aims to develop reasonable suggestions for innovative vocational education school development with implementation of new technology requirements demanded by the labour market. Research methods applied: scientific finding studies and case study of vocational education school possible transfer for competence centre ensuring excellence in vocational education.

**Keywords:** cooperation; vocational education; professional educational institutions; innovation.

## **1. Introduction**

Vocational education worldwide is getting more and more attention as labour market needs for skilled employees are increasing and requirements develop very fast, creating challenges for future good cooperation of vocational education providers with different stakeholders: employers, public administrators, students, and the general public. Good experience has several vocational education schools willing to share those good findings and gain new international experience. The study aims to develop reasonable suggestions for innovative vocational education school development with implementation of new technology requirements demanded by the labour market. Research methods applied: scientific finding studies and case study of vocational education school possible transfer for competence centre.

Academic researchers have paid attention to issues related to vocational education excellence (Laužackas et al., 2009) with special attention to digital competence development (Diz-Otero et al., 2023; Fahrenbach & Luomi-Messerer, 2022) getting bigger and bigger importance as well as entrepreneurs views and requirements (Heinrichs, 2021; Heinrichs & Jäcklin, 2018) and entrepreneurial competence (Ferrerias-Garcia et al., 2019). Researchers have stressed that good vocational education is one of the most effective tools for reducing social inequalities (Henriksson, 2008). Requirements for different skills developments are stressed by researchers (Razmak et al, 2023) with attention to several aspects of skills development. Competence across Europe has been analysed and investigated in detail (Winterton, 2009). Important aspect in the development of competitive vocational education is good cooperation with employers (Brante & Sloka, 2022a; Brante & Sloka, 2022b). Corporate social responsibility is getting their importance in different fields (Davidavičienė & Raudeliūnienė, 2022). Knowledge management often is a key factor for successful organization development (Raudeliūnienė & Matar, 2022; Raudeliūnienė, 2022). Different fields have different requirements (Dootson et al., 2016) for vocational education graduates. European Training Foundation has analysed experience in European countries (European Training Foundation, 2020) and has suggested several possible solutions for vocational education excellence.

## **2. Research results**

The labour market is undergoing major changes. New professions arise, and old professions disappear. Rapid technological development is taking place. The needs of students involved in vocational education are becoming more and more individual. Skills must be renewed throughout the working life.

Vocational education, in order to meet the demands of the labour market, must follow and quickly respond to the changes caused by globalization, climate change, technology, digitalization, and the demographic situation.

In order to promote the development of vocational education and compliance with the requirements of the labor market, the change of the status of vocational education institutions was already started in 2010, with the concept of "Increasing the attractiveness of vocational education and the participation of social partners in ensuring the quality of vocational education" and "Guidelines for the optimization of the network of vocational education institutions 2010 - 2015 .for the year" it is planned to modernize vocational secondary schools by optimizing and differentiating them and creating competence centres for vocational education. The functions of the vocational high school are being expanded. For the vocational secondary school, the acquisition of the status of the competence centre of vocational education offers new challenges:

- creation of an innovative and modern professional education institution with material and technical provisions corresponding to modern technological requirements for various types of professional education in the sector;
- provision of methodical work for the needs of the industry, developing content (professional standards; flexible, quickly responding to labour market demand modular programs, professional qualification exam content), creating educational literature (textbooks, methodological tools);
- provision of continuing education of professional education pedagogues for the needs of the industry: pedagogues' internships in industry companies, practical activity improvement seminars

on the latest technologies in the industry for pedagogues and pedagogues in cooperation with students, students;

- organization of professional development of employees of industry companies, learning the latest technologies and work methods;
- ensuring the evaluation of the professional competence acquired outside the formal education system, advising persons on the possibilities of certifying the professional competence acquired in life experience and activities and obtaining a state-recognized professional qualification document, which promotes a person's competitiveness in the labour market;
- implementation of various professional education programs (in initial professional education - vocational education, professional secondary education programs for both general primary education and general secondary education graduates, professional further education programs, professional development education programs, modular education programs, etc.);
- organization of professional skills competitions and practical seminars for students, educators and representatives of professional organizations in the field, which increase the quality of professional education and promote professionalism;
- provision of professional education and professional qualification acquisition for students of European countries;
- involvement in various international projects related to the development of professional education.

Those vocational education institutions that are able to full-fill the functions characterizing vocational education competence centres acquire the status of vocational education competence centres. By April 1, 2022, 18 vocational education institutions subordinated to the Ministry of Education and Science in the Republic of Latvia, and 3 subordinated to the Ministry of Culture in the Republic of Latvia had acquired the professional education competence centre status.

What is a professional education competence centre? A high-level professional education institution that ensures high quality of education, closely cooperates with industry employers in the implementation of educational content and professional education programs, as well as in the further education of pedagogues and employees in the industry, implements learning based on the students' work environment and gains international experience by participating in European Union-funded in projects.

Considering the fact that highly qualified specialists contribute to the economic development of the country, ensure the growth of the national economy, and increase the competitiveness of the country, vocational education policymakers in the European Union are constantly occupied with the question of how to ensure the competitiveness and attractiveness of vocational education, because the basis of economic development is human skills. It is necessary to take the next step to advance professional education and excellence by introducing innovations in the learning process.

Vocational education institutions that are able to accept new challenges and provide effective vocational education by fulfilling certain quality criteria are moving toward excellence.

The new challenges of vocational education have also been accepted by the state of Latvia in the "Latvian National Development Plan for 2021 - 2027", setting the task until 2027 of "strengthening vocational education institutions as centers of sectoral excellence and innovation, especially in areas of smart specialization, creating flexible learning and sectoral development adapted offer of adult education, promoting inter-institutional and international cooperation and the introduction of new technologies", especially pointing out the need to strengthen the prestige of vocational education, vocational education institutions as centres of excellence and innovation, flexible training offer, including the implementation of a modular approach, cooperation with employers (labor environment-based learning, sectoral expert councils), as well as the availability of adult education, especially for the low-skilled workforce.

Based on the task defined in the "Latvian National Development Plan for 2021 - 2027", the "Education Development Guidelines for 2021 - 2027" has a precisely defined task of strengthening vocational education institutions as centres of excellence and innovation in industries:

- strategic specialization of vocational education competence centres and creation of cooperation models with other vocational education institutions, systematic provision of methodical support for the improvement of educational programs according to the development of sectors, thus creating

vocational education competence centres as a resource and coordination centre of excellence of vocational education institutions;

- inclusion in internationally competitive cooperation networks and international mastery ratings of young professionals for faster implementation of innovations in professional education in Latvia.

The policy of the European Union in vocational education is implemented by the European Training Foundation (ETF), cooperating both with the vocational education institutions of the European Union countries and promoting the growth of the quality of vocational education in various countries of the world. Currently, the European Education Fund cooperates with 243 Centres of Vocational Excellence (CoVEs) from 39 countries (9 European Union countries, 16 European Education Fund partner countries, and 14 African countries). Based on the definition given by the European Education Foundation, Centres of Excellence in Vocational Education (CoVES) are "vocational education institutions that provide quality vocational education, promoting the acquisition of skills in demand in the region, thereby promoting the employment and development of the region. Centres of Excellence in Vocational Education work closely with employers, including small and medium-sized enterprises, to promote innovation, applied research, entrepreneurship and reskilling". Those are:

1. Drivers of professional education development.
2. Providers of good governance of the vocational education institution.
3. Providers of examples of good practice in the implementation of professional education to other professional education institutions.
4. Implementers of good partnerships between cooperation partners involved in professional education.

Specialists of the European Education Foundation (European Training Foundation, 2020) have compiled the characteristics of centres of excellence in vocational education: characteristics. Centres of excellence in professional education are:

- Attractive to learners because they offer responsive, flexible, personalized learning paths, the latest technologies, and quick access to employment and higher education;
- inspiring for educators and leaders, as they offer advanced practice models in teaching, professional development, and further education of educators, organizational development, and management;
- persuasive for policymakers as they show how, with greater autonomy and collaboration, education providers can become a driving force for continuous improvement of education systems.

Centres of excellence in professional education contribute to human capital development, the attractiveness of professional education, internationalization of professional education.

In December 2020, the European Education Fund established a network of professional education excellence centres (ETF Network for Excellence - ENE), which aims to:

- promote the exchange of ideas, practices and experiences between centres of professional excellence, both at the national and international level. The development and exchange of excellence is supported by the ENE Self-Assessment Tool (ENESAT), which helps centres align their development with that of other network members. In addition, ENE works on development partnerships, through which groups of centres of excellence work together to improve certain areas, such as work-based learning for students, to ensure effective implementation of career education to develop green education.
- in cooperation with the organization "Skillman.eu", ENE provides webinars on the main issues of professional excellence. The European Education Foundation has launched the Innovative Educators Community, an online platform dedicated to innovation in teaching and learning.
- reflects the European Union's initiative on centres of excellence in professional education through the Erasmus+ program. The European Union provides long-term funding for the development of platforms and support services for centres of excellence in vocational education. The European Education Foundation attaches particular importance to the contribution that centres of excellence in vocational education can make to the improvement of vocational education and training systems, as well as to the internationalization of vocational education.

ENE operates in 10 priority areas of activity:

1. Lifelong learning and professional excellence;
2. Education and business cooperation (e.g., work-based learning, public-private partnership);

3. Pedagogy and professional development;
4. The entrepreneurial dimension of professional excellence;
5. Industry 4.0/5.0 and digitalization;
6. Autonomy and institutional development (financing, management, governance);
7. Going green – supporting sustainable goals;
8. Thoughtful specialization – innovation, ecosystem and SME mobilization;
9. Excellence in social inclusion and equality;
10. Career orientation and professional excellence.

In order to implement European policy in vocational education, Latvian vocational education institutions developed "Development and investment strategies of vocational education institutions for 2021 - 2027". The strategies developed by vocational education institutions were evaluated and coordinated by the Ministry of Education and Science. In the strategies of several vocational education institutions, including the development and investment strategy of the Ogre technical school, the challenges of the European Union's policy in vocational education were accepted to be included in a unified European education space and as a strategic goal for the period of 2021-2027 - to become a centre of excellence and innovation of industries, which will reflect national and regional economic priorities, creating the necessary conditions for further development, attracting investments, motivating new students to choose professions in demand in the rapidly changing labour market, and achieving European and global education quality levels.

Ogre Technical University plans its strategic development, being convinced that professional education provides everyone involved with benefits such as cooperation, competitiveness, career growth, recognition, publicity, and prestige.

| For the student      | Quality secondary education and demand in the labour market profession   | Professional growth by participating in activities related to the profession | Competitive specialist in the labour market or student in a higher education institution |
|----------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| For the entrepreneur | Participation in vocational education activities, WBL, practice          | Qualified specialist according to sectorial requirements                     | Recognition, publicity of the company                                                    |
| For the VET          | Qualitative learning process in cooperation with employers of the sector | Participation in events and activities organized by the sector               | Prestige of the VET                                                                      |

Fig. 1: Benefits of professional education (Source: Ilze Brante construction)

**Ogre technical school vision (overall goal).** To become an internationally recognized, accessible and sought-after center of excellence and innovation of industries, which offers competitive lifelong professional education and provides all kinds of methodological support to both vocational education institutions and employers in the methodological fields under management.

**The mission of the Ogre Technical School.** To build the Ogre Technical College into a Center of Excellence and Innovation of the industries, based on the pillars - personalization, lifelong learning, digitization, internationalization and green education. Ogre Technical School already implements personalized education, i.e., it pays attention to the individual needs and interests of students. By introducing modular programs and developing more and more adult education, high-quality, effective and interesting teaching and learning, adapting to the learning style, personal characteristics and priorities of each learner, becomes a priority. In the field of continuing professional education,

professional development and non-formal education, the aim of the Ogre technical school is to promote a culture of lifelong learning in society, to provide a quality education offer, to ensure access to world knowledge, to reach low-skilled people, thus increasing the importance of each individual's personal knowledge, which would allow them to work professionally and develop creatively, as well as to be competitive in today's changing world.

Today's modern knowledge society offers ever-new challenges to professional education institutions. The intensive use of information communication technologies in the learning process and the creation of a digital environment is one of the priorities of the Ogre Technical University, as the importance of digitization in the educational process is growing day by day. Ogre Technical School offers and plans to use modern, innovative and interactive teaching methods in the future. In recent years, internationalization has become an important and significant driving force for the growth of Ogre Technical College. Ogre Technical University plans to continue to use internationalization as a method that improves the educational process, prepares students for a multicultural, continuously changing environment, attracts foreign students and teachers, as well as raises the prestige of the educational institution.

Green education - one of the basic solutions to global environmental problems - climate change, consumption of natural resources, deforestation, environmental pollution - is education. OT understands the importance of teaching knowledgeable, persistent, critical-thinking leaders. Therefore wants to bring environmental issues to life in the lives of learners and employees, creating an opportunity to explore and improve OT's immediate environment using environmentally friendly tools, as well as creating a more interesting and relevant curriculum to modernize the environment. On April 1, 2022, amendments to the Law on Professional Education were approved. Based on these amendments, in December 2022, a new status of vocational education institutions was determined by order of the Cabinet of Ministers of the Republic of Latvia. Vocational education institutions that have successfully secured the status of vocational education competence center get the name "technique." The progress of Latvian vocational education institutions toward the status of a center of industry excellence and innovation has begun.

1. In accordance with the order of the Ministry of Education and Science of April 6, 2021 No. 1-2e/21/119 "On the tasks of professional education competence centers" methodical leadership in specific sectors is determined for professional education competence centers. For example, the Ogre technical school has been assigned top management in five areas of methodical work by order of the Ministry of Education and Science.

Table 1: Comparative analysis of the criteria of professional education competence centres and the Centre of Excellence and Innovation of the industry (Source: Ilze Brante construction)

| Professional education competence centre criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Industry Centre of Excellence and Innovation Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Quality of education. Assessment of success in professional qualification exams.<br>2. Preservation of the student contingent.<br>3. Cooperates with employer and industry professional organizations.<br>4. Learners from other vocational education institutions are also trained to work with the latest technologies.<br>5. Ensures further professional education and development of workers and other persons in the industry.<br>6. In cooperation with the professional organizations of the sector, the educational institution in at least two sectors performs the functions of the regional or sector methodical center, the center for further education of | 1. Quality of education and the success rate of students.<br>2. Close cooperation between the educational institution and the industry's professional organizations and companies.<br>3. Ensures improvement of professional skills and competence of pedagogues.<br>4. Creating a culture of lifelong learning - continuing education and digitalization, implementing adult education programs and raising the qualifications of those working in the industry.<br>5. In the context of lifelong learning, a closer connection is created between initial professional education and further education, which is of great importance for educators and |

| Professional education competence centre criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Industry Centre of Excellence and Innovation Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>teachers and the assessment of professional competence acquired outside the formal education system, including:</p> <p>6.1. develops the content of professional education programs in the professions of the corresponding branches;</p> <p>6.2. ensures the exchange of pedagogues' experience and internships at both the national and international level;</p> <p>6.3. organizes seminars, conferences, competitions, olympiads and methodical events for students and teachers both at the national and international level;</p> <p>6.4. develops the necessary teaching and methodical materials for students and teachers and publishes them on the website of the educational institution;</p> <p>6.5. ensures the assessment of professional competence acquired outside the formal education system;</p> <p>7. Participates in projects financed by European Union structural funds or other foreign financial instruments.</p> <p>8. Ensures the implementation of career education measures for learning career management skills and individual career counselling for choosing further education and employment.</p> <p>9. offers opportunities for students to participate in international exchange programs, as well as internships within the framework of European Union programs.</p> | <p>the development of digital learning platforms and e-environment.</p> <p>6. Uses the latest technological solutions in the learning process, implements innovation policy.</p> <p>7. Sustainability – the green link in professional education draws attention to the area of environmental cleanliness and maintenance, energy efficiency saving and emission reduction measures, the direction of green policy.</p> <p>8. The European educational space and the international dimension of professional education:</p> <p>8.1. Transparency and comparability of qualifications;</p> <p>8.2. Joint programs and qualifications;</p> <p>8.3. Opportunities provided by Erasmus+ and Europass;</p> <p>8.4. Adjustment of labour market demand and supply;</p> <p>8.5. Promotion of the competitiveness of European vocational education;</p> <p>8.6. Cooperation with countries outside the European Union.</p> |

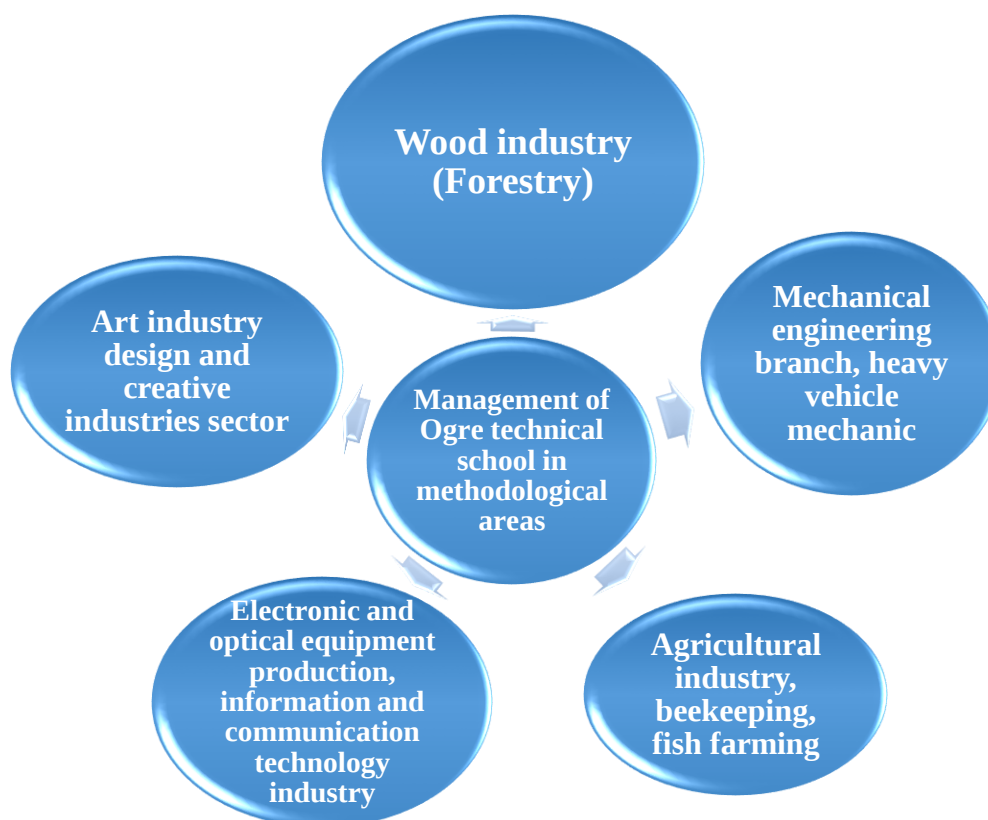


Fig. 2: Ogres Technical University of methodical management branches in 2023 (Source: Ilze Brante construction)

2. Vocational education institutions, and technical schools, in cooperation with the professional organizations of the sector, determine in which sectors the specific technical school will become the centre of excellence and innovation of the sector.
3. In cooperation with the European Education Fund, guidelines are being developed for the creation of criteria for industry centres of excellence.
4. A comparative analysis of the criteria of professional education competence centres and industry excellence and innovation centres is carried out.

### 3. Conclusions

Vocational education is becoming increasingly crucial in contributing to realizing competitive labour market creation.

Closer cooperation of vocational education schools, companies, and higher education establishments is a precondition in realisation of innovative approaches in vocational education.

Requirements for skills development have to be created in close cooperation of different stakeholders, where the most important are entrepreneurs.

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