

INDUSTRY SKILLS CENTRES AS INSTITUTIONS SUPPORTING THE DEVELOPMENT OF VOCATIONAL EDUCATION IN LOWER SILESIA

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Purpose: The main objective of this article is to present the role played by the Industry Skills Centres (ISC) in developing vocational education in Lower Silesia. The aim is to identify how ISCs can contribute to educational and economic development in the region.

Design/methodology/approach: The author focused on analyzing available materials related to the role of Industry Skills Centres in the vocational education system, a new research area. Due to their innovative nature, the available literature is limited, and practical research is at an early stage of development. The bibliography, comprising seven entries, includes recent publications and materials, including government documents and organizations working in the field of education.

Conclusions: Recently, the Lower Silesian Industry Skills Centres have gained a key role in the vocational education system, responding to the needs of the dynamically changing labour market. Their activities not only support local businesses in attracting skilled workers but also promote innovation and integrate education with industry. ISCs also play a crucial role in shaping the workforce necessary for developing critical economic sectors such as automotive, IT, and renewable energy. Investment in these institutions, including in the National Recovery Plan, emphasizes a long-term approach to vocational education reform and effective collaboration between educational institutions and employers.

Research limitations/conclusions: As the available material on the above topics is limited and research on their effectiveness is still at an early stage, there is great potential for future research.

Social implications: The Sectoral Skills Centres in Lower Silesia will play a fundamental role in shaping a modern vocational education system. Their activities prepare young people for the challenges of the labour market and contribute to regional and social development by providing local companies with qualified personnel. Critical to ISC's continued success will be stable financial support, infrastructure development, and partnerships with industry, strengthening the effectiveness of vocational education in the region.

That being said, ISC also faces significant challenges. Among them is the need for stable funding, infrastructure upgrades, and closer business collaboration. The high cost of maintaining modern technology and appropriate learning environments can limit the availability of educational programs. Adapting educational offerings to the rapidly changing labour market remains a significant problem. Nonetheless, ISCs have the potential to become critical educational centres that offer quality education and training, which is essential in the face of the increasing demand for a skilled workforce.

Originality/value: The article may interest teachers and educators who want to understand how collaboration between education and industry can influence the quality of vocational education. Those working in local government may find valuable information on strategies to promote vocational education that contribute to the development of their regions. The author aimed the article at various audiences, including, but not limited to, entrepreneurs and managers from local companies looking for qualified staff to employ. In addition, young people and their parents seeking information about vocational training opportunities can learn about ISC programs that combine theoretical knowledge with practical skills to enhance employability. The article may also attract the attention of innovation and technology experts who see the potential in developing modern education programs. Finally, anyone interested in the future of the labour market and professional development can find relevant information on trends and challenges in vocational education, highlighting ISC as a critical player in this area.

Keywords: Industry Skills Centres, vocational education, integration of education and the labour market

Category of the paper: Research paper.

1. Introduction

Vocational education in Poland, including Lower Silesia, plays an essential role in meeting the needs of the labour market, as curricula in trade schools are designed with current and future economic trends and labour market needs in mind. Students gain practical knowledge that prepares them to work in industries facing a shortage of skilled workers. A key aspect of this type of education is the development of practical skills, which differentiates it from the general education system and makes graduates better prepared to enter the workforce quickly, increasing their competitiveness. A qualified workforce, especially in regions such as Lower Silesia, supports the local and national economy by providing companies with specialists in crucial industries such as manufacturing, automation, or logistics, which contributes to the region's competitiveness. Vocational education also plays an essential role in leveling the playing field for young people, offering stable and well-paid employment to those who do not choose the path of higher education. In Lower Silesia, thanks to the development of numerous economic zones, graduates of vocational schools have countless professional opportunities, often finding work immediately after completing their education. The region stands out from the rest of the country for its dynamic economic development, systemic approach to vocational education, and investment in Industry Skills Centres, which combine teaching with the real needs of industry. Local initiatives such as school-business collaborations, apprenticeships and employer engagement in education help to align education with labour market requirements, particularly in key sectors for the region.

Thus, vocational education plays a crucial role in shaping the future workforce and responding to the dynamically changing labour market needs. It connects the world of education with the labour market and responds to growing economic and technological needs. It meets

the needs of the labour market by offering students practical skills that allow them to quickly find their way in their professions, making them more competitive. It also underpins the development of the economy by providing local companies with well-qualified employees, which translates into increased competitiveness for the region. It also levels the playing field for young people on the labour market, offering vocational school graduates stable employment, particularly in Lower Silesia's rapidly developing industrial sectors.

In the context of Lower Silesia, one of the most economically developed regions, investments have been made for years in developing vocational education to meet the demand for specialists in industries such as automotive, energy, or IT. One of the key elements supporting the development of vocational education is, and will continue to be, the Industry Skills Centres - modern institutions that link the world of education with the practical needs of the economy. ISCs offer students and teachers access to the latest technologies, training, and apprenticeships, enabling them to acquire the competencies needed to succeed in the labour market.

The main objective of this article is to present the role played by the Industry Skills Centres in the development of vocational education in the Lower Silesia region. The specific aim is to identify how ISCs can contribute to raising the region's education and economic development level.

2. Methodology

The author used the Desk Research method to prepare the above article. Without collecting primary data, desk research involves gathering information and data from available secondary sources, such as publications, reports, scientific articles, statistics, databases, archival materials, and online sources. It is one of the primary research methods used in social sciences, business, and other fields.

The author focused on the analysis of available literature and sources of information on vocational education, the labour market, and Industry Skills Centres and their influence on the development of vocational education in Lower Silesia. The author based his considerations on Polish literature, studying scientific articles and electronic sources.

The bibliography includes seven items. The number of bibliographic items is due to the highly new subject matter of the work - Sectoral Skills Centres and their role in vocational education are only gaining importance in Poland. Consequently, the available material is limited, and research into their effectiveness is still in its early stages. The publications included in the bibliography cover the latest available sources.

3. Industry Skills Centres – definition and goals

Industry Skills Centres are state-of-the-art educational units that aim to support the development of vocational education by directly linking the education system to the needs of the labour market. ISCs offer advanced technological facilities, laboratories, and workshops (tailored to the needs of the local labour market) that enable students to acquire practical skills in line with the latest industrial trends. These institutions are and will continue to be, a vital link between education and the business sector, facilitating young people's access to quality education and apprenticeships that allow them to adapt quickly to the labour market requirements. At the same time, the Sector Skills Centres collaborate with local businesses and educational institutions, providing knowledge and resources not only to students but also to teachers and vocational instructors, enabling them to develop their skills and access the latest technologies and teaching methods.

The Industry Skills Centre is a high-tech educational unit with a nationwide reach that is part of the education system. This facility goes beyond traditional models of vocational education, focusing on one area specific to a particular industry.

An industry skills centre is a nationwide education, training, and examination centre with a sectoral focus in one of the occupational fields defined in regulations issued based on Article 46c(1), which integrates schools providing vocational education, continuing education establishments, vocational training centres, universities and entities referred to in Article 3(1a) that operate in that occupational field, and which conducts:

- a) education and training,*
- b) supporting cooperation of schools, establishments and universities with employers,*
- c) innovation and development activities disseminating knowledge and new technologies as well as ecological and digital transformation,*
- d) supporting implementation of vocational counseling for students and professional activation of students, doctoral students, and graduates of studies*

addressed in particular to pupils, students, postgraduate students, teachers, university teachers, and employees, in this professional field (Act of 30 August 2023 amending the Act - Education Law and certain other acts).

The facility's activities include education, fostering collaboration between schools and employers, technological innovation, and career guidance. The unique nature of the ISC stems from its specialization and association with a national professional body, which ensures the integration of learning and professional practice.

The governing body of the ISC can be:

- local government units,
- natural persons or legal persons other than local self-government units, including professional organizations competent for a given professional field,
- ministers competent for the professions of vocational education.

The establishment and operation of an ISC require an agreement between the leading authority and the professional organization of the field in question unless the professional organization acts as the leading authority. Professional organizations must be nationwide in scope and operate under specific laws. An ISC must have a Council, and the educational offer is aimed at a broad audience, including pupils, students, and adults planning retraining (Ministry of Education and Science).

A vital element of the Industry Skills Centre's offer is an innovative, out-of-school form of lifelong learning - industry-specific vocational training, covering specialized skills valuable in a particular vocational field and digital and eco-transformation competencies. Pupils, students, and employees in the industry can benefit from this offer. The ISC also organizes further training courses for young workers and courses to acquire and update professional qualifications. In addition, the ISC is the only educational institution to offer industry-specific training for teachers of vocational subjects.

The education and training offered by the institution complement the vocational education and training provided in the education system and the higher education and science system and support lifelong learning in line with the Integrated Skills Strategy 2030 idea.

The ISC's activities also support integrating education and business, promoting innovation, and developing technology, particularly in the context of digital and ecological transformation. The centre also aims to support career counseling and cooperation between schools, universities, and employers, which distinguishes ISC from traditional vocational training institutions (Ministry of Education and Science).

ISCs, therefore, act as centres of excellence, offering opportunities for upskilling and retraining. In this way, they become a crucial element of sustainable regional development strategies, responding to the dynamically changing needs of the labour market. In Lower Silesia, the Industry Skills Centres play a significant role by supporting individual industrial sectors. Their activity is essential in modernizing vocational education, increasing the region's competitiveness against other parts of the country.

The main goals and tasks of the Industry Skills Centres focus on supporting the development of vocational education by adapting education to the real needs of the labour market and promoting innovative solutions in technical education. Above all, ISCs are designed to ensure that students can access modern technologies and tools to acquire practical skills crucial in a rapidly changing economy. These institutions also play a key role in integrating the education system with local industry, offering students opportunities for direct contact with the real needs of companies and organizations, which promotes better adaptation to the labour market after education.

One of ISC's primary objectives is to tailor curricula to the industries' specific requirements, which means working closely with businesses and the private sector to identify current and future professional competence needs. As part of this collaboration, ISCs organize internships, work placements, and workshops that allow students to gain valuable experience. As a result,

graduates of schools cooperating with ISCs are more likely to be employed, and local businesses can count on an influx of well-trained staff (Gazeta Prawna, 3.01.2024).

In summary, ISCs act as centres of professional development for teachers and adults. Improving the qualifications of teaching staff is an important task of these institutions, as teachers and instructors need to keep up to date with new technologies and industry trends in order to transfer knowledge and skills to students effectively. Therefore, ISCs organize training courses and workshops for teachers to improve their professional and teaching competencies.

Finally, an essential task of ISCs is to promote vocational education in society and to support young people in making decisions about their career paths. ISCs are often involved in information campaigns and activities to make vocational education more attractive, which is particularly important in counteracting stereotypes about vocational schools. Such initiatives motivate young people to choose an educational path that offers genuine career prospects.

The role of the Sectoral Skills Centres in the vocational education system is crucial, as they are modern centres that effectively link/combine education with the needs of the economy and the labour market. One of the most critical tasks of ISCs is facilitating access to practical, high-tech tools and skills, which is particularly important in rapidly changing industries such as automotive, IT, or renewable energy. Through access to state-of-the-art infrastructure - laboratories, workshops, and equipment - students can gain work experience in actual working conditions, significantly increasing their competitiveness in the labour market after graduation.

ISCs also play an important role in integrating vocational education with local businesses. This cooperation includes not only the organization of internships and apprenticeships for students but also the joint development of curricula that meet the current needs of the labour market. This makes the education process more flexible and dynamically responsive to changing economic realities, enabling companies to have well-trained professionals ready to take up employment immediately after graduation.

The National Recovery and Resilience Plan (NRP) included the decision to establish industry-based skills Centres under Component A: 'Economic Resilience and Competitiveness'. Specific objective A3 is to strengthen the education and lifelong learning system to meet the needs of the modern economy and foster innovation, technology transfer, and green and digital transformation. Reform A3.1 plans to prepare human resources for the needs of a modern economy and the ability to respond to crises.

Investment A3.1.1 supports the development of vocational education, higher education, and lifelong learning, emphasizing cooperation between vocational schools, universities, employers, research and development institutions, and other economic actors and promoting vocational education. In particular, it is planned to establish 120 sectoral skills centres as centres of vocational excellence (CoVEs).

The project operator is the Foundation for the Development of the Education System, which plans to establish all ISCs by the end of 2024, with the first 20 to be established by the end of 2023. Implementation requires cooperation with nationwide professional organizations, state-owned companies, or bodies running vocational schools.

On 4 July 2023, the first contracts in the ISC Project Competition were signed, and the recruitment process for subsequent phases is underway. Funding covers the construction of infrastructure, the creation of an institutional structure, the employment of staff, and the development of training curriculum documentation. The total amount of support is PLN 1,429,000,000, with anticipated grants in the range of PLN 9,000,000 to 16,000,000 for each of the 120 areas (Foundation for the Development of the Education System).

Ultimately, there will be 120 Industry Skills Centres located throughout the country. The current locations of the centres in individual voivodeships are shown on the map below.

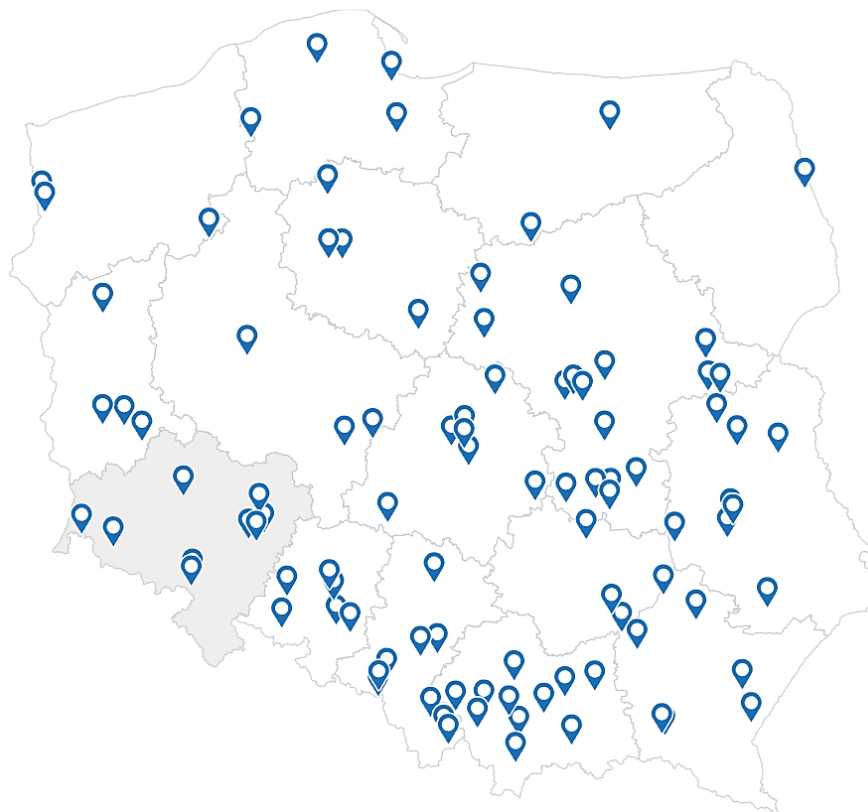


Figure 1. Industry skill Centres as of 24/10/2024.

Source: <https://www.frse.org.pl/kpo-ISC-mapa> (24.10.2024).

4. The role of the Industry Skills Centres in the development of vocational education - the example of Lower Silesia

Industry Skills Centres play a crucial role in developing the skills of both students and workers, offering advanced educational infrastructure and state-of-the-art training programmes that are tailored to the real needs of the labour market. One of the main ways in which ISCs support students' skills development is by providing access to modern laboratories, workshops, and technological tools. Students can work on equipment used in industry, which allows them to gain practical skills in conditions close to the natural working environment. In this way, education at ISC is not limited to theory but becomes accurate preparation for work in specific industries.

There are currently nine Industry Skills Centres in Lower Silesia. The table below shows the variety of vocational fields supported by ISCs in Lower Silesia and their geographical distribution in the region. It indicates the growing importance of vocational and continuing education in the context of local labour market needs. It is worth noting that most ISCs are planned to be established by the end of 2024, suggesting intensive development of these institutions in the coming years.

Tabela 1.

Industry Skills Centres in Lower Silesia - data as of 23.09.2024

Area	Contact details
Underground mining, processing of metal ores and mineral resources	The final recipient of support: Miedziowe Centrum Kształcenia Kadr sp. z o.o. Address: Lubin, ul. Marii Skłodowskiej Curie 172A Website: https://ISC.mckk.pl/
Logistics	The final recipient of support: Międzynarodowa Wyższa Szkoła Logistyki i Transportu we Wrocławiu Address: Wrocław, ul. Sołtysowicka 19b Website: https://ISC-logistyka.pl/
Mechatronics	Final recipient of support: Gmina Wałbrzych – miasto na prawach powiatu Address: Wałbrzych, ul. Ogrodowa 2a Date of creation: till 31.12.2024
Occupational therapy	The final recipient of support: Daniel Sobczyk Address: Wałbrzych, ul. Jana Matejki 6 Date of creation: till 30.05.2025
Industrial automation	The final recipient of support: Gmina Wrocław Address: Wrocław, ul. Kielczowska 43 Date of creation: till 31.12.2024
Electromobility	The final recipient of support: Gmina Wrocław Address: Wrocław, ul. Borowska 105 Date of creation: till 31.12.2024
Electrics	The final recipient of support: Gmina Wrocław Address: Wrocław, ul. Strzegomska 49a Date of creation: till 31.12.2024

Cont. table 1.

Power engineering	The final recipient of support: Powiat Zgorzelecki Address: Zgorzelec, ul. Francuska 6 Date of creation: till 31.12.2024
Hospitality	The final recipient of support: Województwo Dolnośląskie Address: Olszyna, Biedrzychowice 20 Date of creation: till 31.12.2024

Source: Fundacja Rozwoju Systemu Edukacji, data as at 22.10.2024, <https://www.frse.org.pl/kpo-bcu-mapa>, dostęp: 22.10.2023.

Industry Skills Centres are introducing new approaches to teaching and training in response to the rapidly changing labour market. In the face of technological advances, globalization, and the increasing demands of industry, traditional methods of vocational education need to be revised. ISCs, as state-of-the-art educational institutions, integrate innovative teaching strategies with practical skills, adapting education programmes to the real needs of employers and global trends.

Industry Skills Centres also find their place in the Lower Silesian Vocational Education Development Strategy (DSREZ), which sets out the main directions for the development of education in the Lower Silesian Voivodeship, taking into account the needs of all stakeholders in each of the four subregions (jeleniogórski, legnicki, wałbrzyski, wrocławski).

The Lower Silesian Vocational Education Development Strategy (DSREZ) serves as a guideline for all actions involved in cooperation to develop vocational education in the region. Vocational education is defined here broadly as a set of actions that support complete preparation for functioning in professional life - starting from early vocational preorientation at the pre-school stage to lifelong counseling and support in the process of lifelong learning.

The DSREZ strategy identifies eight areas of impact (cooperation with employers, practical learning, flexible skills acquisition, human resources, monitoring and information flow, career counseling, stakeholder cooperation, organization, and management), the key to developing the province's vocational education policy. Strategic objectives were identified for each area and broken down into more detailed operational objectives. Work on the detailed implementation guidelines included attempts to determine courses of action. In addition, each area, key, but not the only entities responsible for the implementation of the activities, were designated, and exemplary indicators were identified to assess the impact of the strategy.

Thus, DSREZ integrates the activities of various institutions and unifies the approach to the development of vocational education, enabling effective implementation of the strategy in response to regional labour market needs and supporting the harmonious development of vocational qualifications as part of the lifelong educational process (the University of Lower Silesia DSW, Marshal's Office of the Lower Silesian Voivodeship).

The activities of the Sector Skills Centres as complementary entities will support the implementation of the individual DSREZ objectives:

- Strategic objective: To implement and develop effective education methods at all stages of life.
- Strategic goal: Development of an effective model of cooperation for vocational education personnel and improvement of professional qualifications.
- Strategic goal: Development of cooperation solutions for the development of vocational education (Supporting the building of alliances and partnerships for vocational education, including cross-sectoral ones, for networking and exchange of experience between stakeholders from border regions, e.g., through building educational industry clusters and cooperation with ISC).
- Strategic goal: Building and development of effectively functioning vocational counselling.
- Strategic goal: To create mechanisms for effectively organizing and managing regional vocational education.

In summary, Industry Skills Centres represent a modern approach to vocational education that responds to the challenges of the changing labour market. By combining practice with theory, introducing modern technology into teaching, flexible educational programs, and close cooperation with industry, ISCs prepare students and workers for the challenges of today's economy.

5. Challenges and prospects for the development of Industry Skills Centres

The Sectoral Skills Centres, as new centres of lifelong education, have the potential to become technologically and organisationally advanced centres of education, training, and vocational examination. Their programs will be accessible to pupils, students, doctoral students, lecturers, and employees, thus fostering the integration of the academic and professional communities with employers. Each ISC is obliged to provide teaching staff with appropriate qualifications, modern teaching facilities, safe and hygienic learning conditions, infrastructure adapted to people with disabilities, supervision to improve the quality of education, and documentation of continuing education, including an annual training plan (Kwiatkowski, 2023).

Although they play a crucial role in supporting the development of vocational education in Lower Silesia, they face several challenges that may affect their effectiveness. The most critical issues are funding, infrastructure development, and cooperation with local industries.

One of the main challenges facing ISCs is stable and sufficient funding. Many Centres are funded by public and private resources, meaning their operations depend on effective collaboration with various stakeholders, including local governments, state institutions, and companies. Unfortunately, limited funding may lead to problems in maintaining modern technologies and infrastructure (after the period of investment support), which consequently affects the quality of education. More funding may also limit the availability of courses or the size of training groups. This is particularly problematic given the dynamic development of the labour market, which requires constant adaptation of the educational offer to new needs.

Another challenge affecting ISCs is the development and modernization of infrastructure. Industry Skills Centres need state-of-the-art equipment to offer students and employees access to up-to-date technologies and tools used in industry. Given the rapid technological development, investment in equipment is essential, but the cost can be significant. In addition, centres must ensure adequate working conditions for students, which involves upgrading buildings, workshops and laboratories. The lack of adequate infrastructure can limit opportunities for practical training, which is one of the cornerstones of vocational education.

Collaboration with industry, while one of the pillars of ISC's work, can also be challenging. The sectors that the centres work with are often characterised by a rapid pace of change, which requires flexibility in adapting curricula to current market needs. However, establishing lasting and effective company partnerships can take time and effort. Companies expect graduates to be fully prepared for the workplace, but differences in expectations and the constraints of available resources can lead to skills gaps. In turn, companies may need help to regularly engage in developing educational programmes, making it difficult to update and adapt them to current market requirements.

The creation and effective use of the opportunities offered by industry skills centres can be a significant boost further to strengthen the position of vocational education in Poland. Vocational education already covered 58.5% of students in the 2022/2023 school year, which is confirmed by the high employment rate of graduates - 82% in 2022. The expected increase in young people's interest in vocational education is due to the development of the labour market in sectors such as industry, construction, and services, as well as attractive offers from EU countries. Given these trends, the role of integrated educational institutions in lifelong learning is becoming increasingly important (Kwiatkowski, 2023).

In summary, Industry Skills Centres face several challenges, including securing stable funding, developing a modern infrastructure, and establishing sustainable partnerships with industry. These aspects are crucial to providing high-quality vocational education that meets the needs of the changing labour market while also being areas that require ongoing attention and support from the government, educational institutions, and companies.

6. Conclusions

The Industry Skills Centres in Lower Silesia are a crucial element of the vocational education system, which adapts education to the needs of the labour market. Their activities respond to local businesses' needs and support innovation and cooperation between education and industry. ISCs integrate theoretical knowledge with practical skills, increasing graduates' competitiveness. Students benefiting from the offer of these centres gain access to modern technology and apprenticeships, making it significantly easier for them to find employment in a rapidly growing region.

ISCs also make it possible to train a workforce that lays the foundation for developing critical sectors of the economy, such as automotive, IT, or renewable energy. The investment in these centres, included in the National Recovery Plan, demonstrates a long-term approach to vocational education reform and the importance of collaboration between schools and employers. ISCs are committed to promoting vocational education among young people, which contributes to overcoming stereotypes associated with this type of education.

However, it should be noted that ISCs face several challenges, such as securing stable funding, upgrading infrastructure, and establishing sustainable partnerships with industry. The high cost of maintaining state-of-the-art equipment and learning conditions can limit the availability of educational programmes. In addition, adapting educational programmes to the dynamically changing needs of the labour market remains a significant challenge. Despite these difficulties, ISCs have the potential to become leading vocational education centres, providing high-quality education and training, which is essential in the context of the growing demand for skilled workers.

In conclusion, the Industry Skills Centres in Lower Silesia play and will continue to play a crucial role in the modern vocational education system. Their activities prepare young people for the challenges of the labour market and support regional and social development by providing a skilled workforce to local businesses. Financial support, infrastructure development, and partnerships with industry will be critical to the further development of ISC and the effectiveness of vocational education in the region.

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