

Regional development strategy as a perspective means to enhance the quality of vocational education services: the empirical analysis for eastern Ukraine (Donetsk oblast case)

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Paper received 11.10.21; Accepted for publication 02.12.21.

<https://doi.org/10.31174/SEND-HS2021-261IX48-08a>

Acknowledgements

We are grateful for the valuable feedback from Tetiana Sidasheva, Head of the Department of Education and Science of Donetsk Oblast State Administration. Earlier versions of this manuscript were presented at the Internationalization Workshop within the project *Progressive University Management* (Masaryk University, Brno, Czech Republic, 2017), International conference *Humanities and Social Sciences in the Era of Globalization* (Budapest, 2018), International conference *Science Without Boundaries Development in the 21st century* (Budapest, 2019), Ukrainian-British Forum *Excellence in Teaching and Learning in Higher Education* (Kyiv, 2019), Conference European Integration of Higher Education in Ukraine in the Context of the Bologna Process (Kyiv, 2019). We would like to thank the Donetsk Oblast State Statistics Office for data provision.

Funding

This research has been conducted within the framework of the Erasmus + KA2 project "Modernization of pedagogical higher education and the use of innovative teaching tools - MoPED", No. 586098-EPP-1-2017-1-UAEPKKA2-CBHE-JP funded by the European Commission. The funding body had no influence on the design of the study, collection, analysis, and interpretation of data and in writing the manuscript.

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Abstract. The paper presents the results of the case study of the process of regional development strategy elaboration in the sector of vocational education (Donetsk Oblast case, eastern part of Ukraine). As the result of the study it has been pointed out that the reforming of vocational education initiated by the Ministry of Education and Science of Ukraine has influenced not only prospects of development of vocational educational sphere in the country, but also the application of new strategies by institutions in the context of their positioning (with particular emphasis on the quality of educational services). The study provides a number of practical recommendations that can be considered as an initial mechanism for monitoring the needs of the regional labor market, providing professional training based on information on the approximate number of workers of different professions needed by regional employers to provide a basis to confirm the allocation of funds from the state (regional) budget, etc. The recommendations provided create the ground for successful functioning and development of the professional training system in the region in the direction of modernization of its basic structural elements in order to improve quality in the face of increasing labor market needs.

Keywords: Vocational Education, Vocational Educational Institution, Regional Strategy, Labor Market, Dual Form of Study.

Introduction. It is well recognized that education plays a critical role in eradicating conflicts, enhancing peace-building and reconciliation processes on conflict-affected territories, steering the vision for prosperous and sustainable society development. Armed conflict in the eastern part of Ukraine has had a significant and detrimental impact on human welfare, social and economic conditions and the state of education system in the region. Leading higher education institutions and vocational education institutions became displaced after 2014 and encountered significant problems while providing educational services on conflict-affected territories. At the same time as the 2018 World Development Report and the 2016 Global Education Monitoring Report have made clear – education saves lives, improves health and fosters shared understanding and values; it is a foundation block for nearly every other sustainable development goal outlined by United Nations. Thus, profound, well-grounded and innovative knowledge obtained as the result of education process is one of the important preconditions of efficiency, productivity and profitability of the conflict-affected eastern region of Ukraine. Strengthening education-services-providing capacities of higher and vocational education institutions, fostering their economic, administrative and methodological revitalization through demand-driven teaching services, professional skills training, restoration and strengthening of institutional and educational infrastructure needed for effective

providing of educational services in the region is the main objective of the internationalization process in higher and vocational education of the region, the realization of which will lead to economic recovery, restoration of critical infrastructure of the educational institutions, strengthening social cohesion in the region, increasing rates of employability, and finally to the promotion of peace and reconciliation in Donbas, eastern part of Ukraine.

Based on the aforementioned, the aim of the research is to analyze and identify the top-priority issues of Donetsk oblast higher and vocational education system within internationalization process, their relevance to the needs of the regional labour market, as well as to develop a set of recommendations for a broad range of stakeholders to use to resolve them. To achieve this goal, the following tasks were identified and implemented: - to analyze the impact of the changing socio-economic status of Donetsk oblast on higher and vocational education system; - to analyze the functioning of the regional labour market, to identify key trends and the extent of their impact on the development of educational sphere of the oblast; - to review the components of higher and vocational education system (personnel; logistical, institutional, functional, legislative and normative support; the degree to which training of workers meets the needs of the labour market, the use of the latest training programs and forms, etc.); - to calculate, as an ex-

ample, the degree to which the curricula at higher and vocational education institutions meet the needs of local labour markets; - to elaborate conclusions and proposals for modernizing this sphere of education within the context of internationalization process based on the needs of the regional labour market.

Materials and methods. The methodological basis of the study was the comprehensive analysis of the data on employment and labour market (especially the youth segment); educational services, in terms of type, form, and subordination of educational institutions in 2005, 2010, 2015 and the following years, etc.; formal statistics and operational data provided by the statistical authorities, employment centres, the Department of Education and Science, higher and vocational education institutions for further analysis and comparison; the findings of a study carried out under the auspices of the Ministry of Education and Science of Ukraine and the European Foundation for Education (EFE); methodological recommendations for determining the correspondence of the level and qualification structure of personnel training in educational institutions, based on the needs of the regional labour market; methodological approaches to determining the needs of the oblast for labour over the short-term period of time.

Results and discussion. Before the events of 2014, Donetsk Oblast was a powerful industrial region of Ukraine, which accounted for 13% of the country's gross regional product, 20% of its industrial product and almost 25% of the country's exports. Its main developmental characteristic was the high share of the real sector in its economy, in particular, heavy industry. The leading positions in heavy industry were held by metallurgical production (40 – 45%) and the production of various raw materials, including coal. Due to the specific structure of the industry, and the location of certain types of resources, large companies dominated in Donetsk Oblast, where a significant portion of the economically active population was employed. The needs for training workers for those companies determined the number, specialization, and territorial localization of the Donetsk Oblast higher and vocational education institutions. Along with economic prerequisites, socio-demographic and settlement factors had a significant impact on the formation of the VET institutions network. For many years Donetsk Oblast was distinguished in Ukraine by the largest number of urban settlements and the highest population density.

The situation changed substantially after the events of 2014. In just the first year of the armed conflict in the eastern part of Ukraine, the physical volume of the gross regional product of Donetsk Oblast dropped by 33%. The structure of the industry was partially changed. While maintaining a leading role of metallurgical production, the share of food products, beverages, and tobacco products, as well as engineering, dropped sharply. Since a significant part of industrial enterprises and social infrastructure facilities were located on the territories no longer under government control, it led to a complete breach of economic bonds, a dramatic reduction in output of certain products, and a redistribution of the economic potential between different centres in the region. The changing structure of the region's economy and imbalances in the distribution of economic potential has led to a shift in labour demand. Consequently, while the situation in the labour market of

Donetsk oblast is very dynamic and multi-vectored, the severity of the problems is gradually dropping. Still, occupational, regional, and other disparities remain significant, and these have to be considered in the preparation of the regional order for labour training in education institutions system.

Workers in Donetsk Oblast are trained for 16 sectors, covering over 110 labour occupations. The list of training areas mainly aligns with the economic structure that existed before 2014. The main areas of training are: 1) mining; 2) metallurgical production; 3) general occupations in electrotechnical production; 4) occupations common to all sectors of the economy; 5) railway transport; 6) road transport; 7) construction, installation and maintenance operations; 8) agriculture; 9) public catering; 10) trade and commerce; and 11) services. Specialized state and non-state-owned institutions train workers for the following occupations: firefighter and rescuer, rescuer, driver, sailor, rescue sailor, and logger. The sectoral (industrial) and territorial concentration of directions and occupations of worker training in the region also have their own specifics.

A review of the number and dynamics of professional education graduates of Donetsk oblast reveals the presence of certain trends that have emerged recently under the influence of the development of the labour market and the economy of the region. Over 55% of graduates come under such sectors as "public catering," "general occupations of electrotechnical production," "Automobile transport," and "Services." The following occupations were leading in terms of the number of graduates in 2017 - 2018: "cook, pastry chef" (almost 650 persons), "wheeled vehicles maintenance technician," "Hairdresser/hair stylist" (430 persons), "Tractor driver, vehicle maintenance technician, Category "C" driver" (over 300 persons), and "Electric/gas welder, gas welder" (over 220 persons). The number of graduates in 2013 - 2018 grew in the tertiary sector of the economy. However, the reduction of the number of graduates exceeded 45% in the sectors of the economy traditionally dominant in Donetsk oblast, such as "metallurgical production" and "railway transport." This situation is explained, in the first place, by changes in the structure of the region's economy in recent years, as well as transformations in the job preferences of modern young people. Today, young people are not really attracted to working in mines, quarries, and large industrial companies.

The events of 2014 influenced the socio-economic development of Donetsk Oblast and affected the activity of the VET system - the region, the number of VET institutions decreased by almost three times compared to 2013. Currently, there are 44 VET institutions under control of the Cabinet of Ministers of Ukraine on the territory of Donetsk Oblast, including 38 classic institutions of this type. The total number of VET institutions remained almost unchanged during 2014-2019; however, the number of VET students and graduates decreased significantly (Table 1).

The production and educational specialization of the VET institutions in Donetsk Oblast was formed mainly under the influence of two factors - peculiarities of the regional economy structure and labour market needs. Most VET institutions are characterised by wide educational offer, which means they provide training for workers of different occupations. Agrarian (9 institutions), construction

(3 institutions), mining (2 institutions) and other institutions belong to the specialized category. However, in recent years, a well-defined specialization has been violated in most cases. This situation echoes the 1990s, when training of new working professions enabled VET institutions to “survive” under the difficult conditions of a market economy. Therefore, some VET institutions of Donetsk Oblast can be considered specialized only conditionally, based on their name.

Table 1. Performance indicators of the VET institutions in Donetsk Oblast

Year	Number of institutions by the end of year, units	Number of VET students, thousand persons	Number of students enrolled in VET, thousand persons	Number of qualified graduates, thousand persons
2013	111	36,2	20,3	21,2
2014	44	13,8	7,1	7,8
2015	47	13,0	7,5	6,7
2016	46	12,6	7,2	6,2
2017	45	11,4	6,0	6,2
2018	44	10,6	6,7	6,3

As we have indicated, in the VET system of Donetsk Oblast, the training of workers is conducted in 16 areas of economic activity, which consolidates more than 110 occupations. The most widespread training in the VET institutions is training of workers in such areas of economic activity as “public catering” (22 institutions), “general occupations for electrical machinery” (20 institutions), “occupations common to all sectors of the economy” (19 institutions) and “motor transport” (16 institutions). However, the training of workers in the field of metallurgical production, production of artistic items and jewellery, forestry is carried out only in several VET institutions. Primary data analysis showed that VET institutions not always provide training in all the licensed specialties they have.

The analysis of the quantity and dynamics of the VET graduates of Donetsk Oblast indicates the existence of certain trends formed recently under the influence of the labour market and economic development of the region. The following occupations were leading in terms of the number of graduates in 2017-2018: “cook, pastry chef” (almost 650 people), “wheeled vehicle maintenance technicians”, “hairdresser-stylist” (430 people each), “tractor driver, vehicle maintenance technician, category C driver” (over 300 people), “electric and gas welder” (over 220 people). The dynamics of the number of graduates in 2013-2018 indicates the increase of activities of the tertiary sector of economy. Meanwhile, the reduction in the number of graduates exceeded 45 % in the sectors of economy traditionally dominant in Donetsk Oblast such as metallurgical production and railway transport.

Training of workers in the VET system should meet the needs of the regional labour market. According to a survey of employers conducted by the regional employment service, the largest number of vacancies in 2019 are among such occupations as seller of food and non-food goods, vehicle driver, fitter-repairman, turner, electrical equipment maintenance technician, underground fitter, underground equipment technician, underground miner. These jobs are offered by powerful industrial enterprises, mine administrations and mines. High workforce demand of enterprises is misleading, since vacancies appear because of high staff turnover, resignations due to insecure work and

wage arrears. It is notable that with all the job vacancies available there are a large number of unemployed workers with the relevant qualifications. The analysis shows a certain imbalance between the directions of workers training and the demand in specialists in the labour market, especially at the level of city employment offices.

The importance of economic performance indicators of the VET institutions has increased significantly in recent years, as the financing of the vocational education system is provided mainly from the regional budget. The amount of financial resources allocated annually to the VET system is growing. Thus, for 2015-2019 the total budget of the VET institutions in Donetsk Oblast increased from UAH 240,9 million to UAH 450,0 million. Since, along with the growth of expenditures, there was a decrease in the number of the VET students, this led to an increase of financial costs per student from UAH 21,5 thousand in 2015 to UAH 48,1 thousand in 2019. In general, though not always, there is a pattern that the more people study in the VET institution, the lower the financial cost per student is.

In recent years the VET system of Donetsk Oblast has been gradually reformed. The dual training is introduced in 20 VET institutions and covers nearly 50 vocational occupations. The process of establishing of three training and practical centres is ongoing on the basis of the state-owned «Kramatorsk Centre for Technical and Vocational Education», Mariupol Higher Metallurgical Vocational School and Kramatorsk Higher Vocational School. By the Decree of the Ministry of Education and Science of Ukraine №1133 of 20.08.2019, state-owned «Kramatorsk Centre of Technical and Vocational Education», Mariupol Higher Metallurgical Vocational School and Mariupol Motor Transport Vocational Lyceum were approved as the VET centres for the organization of internships for supervisors of on-the-job training, vocational education teachers and vocational and theoretical educators.

Donetsk Oblast has a number of VET institutions which differ significantly from each other in terms of development. To evaluate the prospects of their further activity, to establish training and practical centres and centres of excellence on their basis, the ranking of the VET institutions of Donetsk Oblast was determined. The ranking was performed separately for agrarian and non-agrarian vocational institutions. The informational basis for ranking was the official performance indicators of the VET institutions, including number of students, number of graduates, proportion of unemployed graduates, etc. The number of people undergoing advanced training or retraining and the financial costs to prepare one student were taken into account. For agricultural VET institutions, such indicator as nett income from agricultural activity per 1 hectare of farmland was additionally used. Assessment of the current state of development of the Donetsk Oblast VET system enabled to identify the main problems of its activity (Table 2).

The need to reform the VET system of Donetsk Oblast is obvious. However, it requires legislative changes at the state level. During the last years a number of normative documents, regulations, orders, programmes and concepts related to various aspects of the VET system activity have been developed, approved and implemented in Ukraine. They include modern approaches to reform of the VET system in Ukraine, which comply with European and world practices in modernization of vocational education. We

should also point out the Concept of modern vocational (vocational and technical) education for the period up to 2027, as well as the draft order of the Cabinet of Ministers of Ukraine “On approval of the action plan for 2019-2027 on the introduction of the Concept of state policy implementation in the field of vocational (vocational-technical)

education”. These trends and tendencies, modern changes in the socio-economic development of Ukraine make the conceptual framework around which the perspective vision of the VET system of Donetsk Oblast, as well as the Strategy of its reform, has been developed.

Table 2. Main issues of the VET system of Donetsk Oblast

№	Issue	№	Issue
1.	Outdated material and technical resources that do not meet the current requirements	6.	Discrepancy between the directions of training, the number of the VET graduates and the needs of the regional labour market
2.	Unsatisfactory conditions for training, accommodation and entertainment of students in most VET institutions	7.	Duplication of training, violation of educational specialization by most VET institutions
3.	Reduction of the number of vocational students and graduates, increase of the share of small-scale VET institutions	8.	Unresolved problem of graduates’ employment, including those who have signed agreements with enterprises
4.	Outdated content, structure and methods of workers training, preservation of Soviet system of vocational education	9.	Absence of successful examples of the VET institutions reform, dominance of paternalistic attitudes among heads of educational institutions
5.	Focus of VET institutions on the training of workers as in the late 20 th century.	10.	Loss of attractiveness of vocational education, fall in prestige of the VET institutions

The aim of the Strategy shall be to reform the existing VET system taking into account the best world practices, to increase its efficiency, the quality of training, to create conditions for employment of young people and adults, to ensure their inclusion in the regional labour market and socially useful activities.

The regional Strategy for reforming the VET system of Donetsk Oblast might be implemented because:

- at the national level, a proper legislative basis has been created to allow the process of reforming the VET system of some regions to begin;
- at the level of central and regional authorities, there is awareness of the need to reform the VET system and a clear vision of the ways of its implementation;
- international organizations actively assist central and regional authorities in developing mechanisms for the modernization of VET;
- in recent years, employers have shown interest in changing approaches to the training of workers in the VET system of Donetsk Oblast, who, on the one hand, experience a shortage of specialists, on the other hand, are dissatisfied with the graduates’ qualifications and the training system;
- elements of dual form of education are being introduced actively in Donetsk Oblast, the process of training and practical centres creation has started, preparation for the centres of excellence establishment is ongoing;
- most heads of the region’s VET institutions realize the need for change, although they treat this process with caution and reservations;
- Donetsk Oblast State Administration is interested in the VET system reform, since a regional order for training of workers is formed with its participation and the financing of vocational education is provided from the regional budget;
- the need for reform in the VET system of the region is also recognized by ordinary citizens, future vocational students and their parents, since the external look of VET institutions and forms and programmes of study do not meet modern requirements and affect negatively the image of vocational education.

The main issues with the development of professional education system of Donetsk oblast were determined by a

comprehensive analysis, involving a review of the changes that occurred there in recent years, interviews with educational institutions senior management representatives, surveys of students, teachers, and supervisors of on-the-job training. Issues identified included:

1. Outdated infrastructure, which prevents the provision of quality training to workers in the light of modern requirements and internationalization process in education. Thus, updating of infrastructure is one of the priorities for improving the quality of education services provision at institutions.
2. Lack of proper conditions for students to study, live, and enjoy recreation. Most educational buildings and workshops are in the need of renovation, heat insulation, window replacements, etc.
3. Dropping numbers of students and graduates.
4. The unresolved issue of employment and wages for students during their apprenticeship. Apprentices receive 50% of their wages at large companies, in accordance with existing arrangements. Another 50% goes to educational institutions, which allows them to at least partially support their current needs.
5. Duplication of the same training programmes at several institutions often located in one city. First of all, this concerns popular occupations such as "cook, pastry chef," "hairstylist, manicurist," "food salesperson," and "wheeled vehicle maintenance technician." In fact, students are trained in these occupations without any regard to the real needs of the labour market.
6. The imbalance between the development of the labour market and the educational services market leading to an over-saturation of the labour market with skilled workers of certain occupations and shortages of others. A review of labour market vacancies shows almost no need for all the cooks and hairstylists that are been trained in such abundance at several institutions in the oblast.
7. The mismatch of education curricula with the labour market demand. It would be most effective to have an apprenticeship in the summer for working occupations, in particular for cooks, partly for builders, tractor drivers, for some other occupations.
8. Paternalism and unwillingness to change among senior management, teachers, and supervisors of professional training. Over 38% of education institution managers and

almost 37% of teachers and supervisors of professional training believe that their institutions should be upgraded exclusively at the expense of the state budget.

9. The diminishing prestige of professional education now observed in many regions of Ukraine. Young people of today aim for standards of living that significantly differ from those of their parents. Today, working in mines or at large companies in difficult environmental conditions is not attractive to young people. Low wages, lack of job security, opportunities to find work abroad, and other factors reinforce this unwillingness.

Taking into account the regulatory documents approved in 2018-2019, in particular the Concept of state policy implementation in the field of vocational (vocational-technical) education "Modern vocational (vocational-technical) education for the period up to 2027", the draft order of the Cabinet of Ministers of Ukraine «On approval of the action plan for 2019-2027 on the introduction of the Concept of state policy implementation in the field of vocational (vocational-technical) education», the Strategy of reforming the VET system of Donetsk Oblast includes three stages.

During the first stage (2020-2021), a number of tasks needs to be implemented, which will enable the formation of a proper regulatory, financial and organizational framework for the region's VET system reform.

The second stage (2022-2024) involves a wide range of tasks for the reform of the region's VET system. During this stage it is necessary to complete the development of the competency-based curricula, to create supervisory boards at VET institutions, to continue the process of optimizing the educational institutions network and the establishment of training and practical centres, to form a system of monitoring of vocational education graduates, to complete the process of VET institutions rebranding, etc.

During the third stage (2025-2027), all objectives of the Strategy should be implemented: the process of the VET institutions network optimization completed, their optimal specialization determined, new training and practical centres and centres of excellence created, the workers training in new occupations started, a new image of the VET institutions and of vocational education system formed.

Implementation of the Strategy objectives for the reform of region's VET system, requires concentration and coordination of efforts of various institutions and public organizations. The Department of Education and Science of the Donetsk Oblast State Administration is responsible for the implementation of the Strategy objectives for the reform of the VET system. Considering the complexity and multidimensionality of the tasks, it is necessary to set up a coordination council to monitor and control the implementation of the VET system reform Strategy. It should include representatives of the VET institutions, the educational and methodological centre of vocational education in Donetsk Oblast, the state employment service of the region, the regional council of vocational education and employers on a voluntary basis.

Monitoring the implementation of the Strategy objectives of the VET system reform is one of its compulsory elements. The purpose of the monitoring is to evaluate the state of Strategy implementation in order to prevent undesirable consequences or deviations from the set course of reforms. The Strategy monitoring should include several

areas: 1) monitoring of the external environment, in particular changes in the economic and social development of the country, the legal framework in the field of vocational education, the situation in the labour market, etc.; 2) monitoring of the internal environment, first of all, changes in the structure of the regional economy, in the labour market, in the course of demographic processes; 3) monitoring of Strategy objectives implementation, in particular the approved plan and the results achieved.

Based on the results of the monitoring, annually the Department of Education and Science of Donetsk Oblast State Administration, together with the members of the coordination council, organizes a discussion of the Strategy objectives implementation in terms of strategic, operational goals and specific objectives, as well as the results achieved.

Conclusions. As the result of the research a general system of measures for reforming professional education in the region within the context of internationalization process has been developed including mechanisms that would operate at both the national and regional levels. Those include:

1. To align the real needs of the labour market with the curricula of the regional education institutions, based on an improved methodology for determining workforce vacancies. At present there is an excess of vacancies over the number of graduates in the mining industry and in electrical production, and a certain surplus of trained workers in the service and catering sector. The dynamic with the number of graduates is the opposite. However, it is difficult to objectively assess how the curricula match the needs of the labour market because of shortcomings in the vacancies methodology.

2. To improve the mechanisms of employment for graduates, first of all, through the signing of agreements with companies that would guarantee employment. Resolving this issue is important both to ensure the proper functioning of the institutions and to create a positive image of professional education.

3. To encourage employers to participate in training workers. It is important to involve in the process not only large companies but also representatives of small- and medium-sized enterprises, small companies, possibly NGOs and business associations. At the regional level, within the framework of socially responsible business, it is necessary to develop a system of preferences for SMEs in relation to employment and apprentice remuneration.

4. To stimulate educational institutions to further introduce the dual form of study and file a request with the Ministry of Education and Science of Ukraine to amend the curricula, which will enable students who are trained for the occupation of tractor driver, cook, chef, plasterer to take practical training in summer period. That will significantly improve the quality of study process and the acquisition of appropriate occupational competencies by students.

5. To create conditions that would attract young supervisors of on-the-job training, who are able to work with modern equipment, to work at educational institutions. They are the ones who are able to provide a new quality of training and to make practical training more fun and attractive for students.

6. To upgrade the infrastructure through various sources

of financing - state, regional, private, to apply for international grants.

7. To update curricula and training methods. The preparation of new curricula designed to train various categories of graduates, adults, etc., is also an important task. They should be adaptable to the rapid changes in the labour market and designed for different categories of the population.

8. To expand the list of occupations that are trained at the region's VET institutions. These are the occupations that meet the requirements for high-tech production, in particular, *installer of transparent and ventilated facades, assembler of process pipelines, construction plumbing technician, roof builder, floor laying worker, construction rigger, construction carpenter, façade worker, electric equipment technician, lifting machine operator, mechanic of technical systems in buildings, communications network installer, industrial robot operator, etc.*

9. To align the areas of training of professional personnel and educational specialization of institutions, and to

eliminate duplications of occupations at several institutions in one city.

10. To activate and diversify work on increasing the prestige of professional education.

Thus, the process of optimizing higher and vocational education institutions work within the context of internationalization process in the region is the most painful of the measures to reform the professional education system of Donetsk oblast. The complexity of its implementation lies in the fact that this optimization affects social interests of a large sector of population: senior management, teachers, supervisors of on-the-job training, support personnel. It is clear that the staff of educational institutions are not supportive of these efforts, as evidenced by the results of the questionnaires. Only about 10% of teachers, supervisors of on-the-job training and representatives of senior management of educational institutions indicated in their questionnaires that optimizing the network is an important component for reforming professional education.

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