



REGULATORY FRAMEWORK, METHODOLOGY AND TECHNOLOGIES OF MONITORING RESEARCH IN VOCATIONAL EDUCATION (IMPLEMENTATION OF EUROPEAN EXPERIENCE)

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Abstract.

Relevance: dynamic changes in the labour market affect the increase in the demand for skilled workers in relevant professions, which necessitates the implementation of appropriate monitoring studies. The effective functioning of professional (vocational) education (hereinafter – PVE) institutions will be facilitated by the introduction of structural units that will collect and analyze information on labour markets, educational services, monitor competitors, track new trends in the development of PVE and forecast changes in the economy.

Aim: determination of the regulatory framework, methodological approaches to monitoring studies in PVE and substantiation of methods, technologies for analyzing the results of training of PVE students.

Methods: analysis and synthesis to determine the state of development of the problem of monitoring research in PVE; generalization to formulate conclusions and recommendations on technologies for analyzing the learning outcomes of PVE and vocational higher education students; diagnostic (questionnaire, conversation) to clarify methodological approaches, methods and technologies of monitoring research in vocational education.

Results: it is established that in order to promote the modernization of the PVE system in accordance with the current and future needs of the labour market, there are carried out best international standards and practices to ensure the realization of the right of citizens to quality and affordable PVE, there are created conditions for the formation and development of relevant professional competencies of a person necessary for his/her successful professional activity and self-realization, as well as the development of human resources as a factor of economic growth of the state, monitoring of regional labour markets and promotion of employment of graduates; the European experience of using monitoring methods in the education system and technologies for obtaining and processing education system data was analyzed; it was found that pedagogical workers have a low level of competence in prognostic research in education, so it is recommended to strengthen the theoretical and practical training of future vocational teachers on the organization of monitoring research in PVE.

Conclusions: Ukraine has a legally balanced system of state monitoring. For the effective implementation of monitoring studies in the PVE, it is necessary to adhere to methodological approaches (system, information, technological, qualimetric, cluster), which determine the use of a group of methods (extrapolation forecasting, expert assessment, normative forecasting, reflexive, time series forecasting, forecasting by analogy, modeling) and technologies (online surveys and databases).

Introduction. Forecasting is a crucial stage of planning in any sphere of economy and education. As noted in the research of scientists of the National Academy of Sciences, Engineering, and Medicine (2018) of the United States of America, the results of forecasting the enrolment of students, their demand in the labour market are especially important, as they affect the financing of educational institutions, the number of teachers needed, requirements for educational infrastructure, etc. Modern economic development is characterized by increased rates of technological innovation, which leads to a constant change of relevant professional qualifications in the labour market (Dachs, 2018, p. 5). As a result, there is a growing interest of institutions and students in technologies for searching and analyzing information on the demanded professional qualifications in the labour market and ways to acquire them (OECD, 2017, p. 98). Careful observation and registration of labour market parameters regarding relevant occupations affects the priorities for the development of vocational education, has a vital impact on the demand for educational services and the sustainability of the educational institution (Serrano-Velarde, 2010, p. 41). The value of monitoring studies is also in the fact that they allow to identify trends in changes that occur in education, to track the results of management decisions (Kharkiv Academy of Continuing Education, 2013, p. 5). Therefore, in order to function effectively, educational institutions must have structures that collect, analyze and use information on labour markets and educational services to monitor their competitors, track new trends in education and anticipate significant changes in key markets (Hofer et al., 2020, p. 22).

In order to ensure monitoring research in the PVE institutions, it is necessary to be based on: a system of methodological approaches according to which monitoring research is organized; principles guiding research in the field of theoretical and practical problems of monitoring in the PVE institutions; technologies used in monitoring research (Hurzhii et al., 2021, p. 94). Furthermore, although sophisticated and innovative methodologies have been developed to measure education quality, the processes of linking research findings to implementation are still under development (Saito & van Cappelle, 2010, p. 4).

The purpose of the article is to determine the regulatory framework, methodological approaches
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to monitoring studies in PVE and to substantiate the methods and technologies for analyzing the learning outcomes of PVE students.

Methods: analysis and synthesis to determine the state of development of the monitoring research problem in vocational education; generalization to formulate conclusions and recommendations on technologies for analyzing the learning outcomes of PVE and vocational higher education students; diagnostic (questionnaire, conversation) to clarify methodological approaches, methods and technologies of monitoring research in PVE.

Results and discussion. According to the Law of Ukraine "On Education", monitoring is a system of consistent and systematic measures carried out to identify and track trends in the development of the quality of education in the country, in certain territories, in educational institutions (other subjects of educational activity), to establish the conformity of the actual results of educational activities to its stated goals, as well as to assess the degree, direction and causes of deviations from the goals. It can be internal and external. Internal monitoring of the education quality is conducted by educational institutions (other subjects of educational activity). External monitoring of the education quality may be conducted by any bodies, enterprises, institutions, organizations, other legal entities that carry out independent assessment of the quality of education and educational activities. Participation of educational institutions (other subjects of educational activity) and participants of the educational process in external monitoring of the education quality is voluntary, except in cases established by law (Verkhovna Rada of Ukraine, 2017).

Monitoring of the quality of PVE is regulated by the Law of Ukraine "On Education" (Verkhovna Rada of Ukraine, 2017), in particular, paragraph 2, Article 30 "Transparency and information openness of the educational institution" states that PVE institutions licensed to carry out educational activities are obliged to provide open access to the results of monitoring of the education quality on their websites (in case of their absence – on the websites of their founders).

In accordance with the regulations of the National Strategy for the Development of Education in Ukraine for the period up to 2021, the strategic direction of the development of the national education system in the context of its integration into the European and world educational space is to ensure the

national monitoring of the education system; development of the State list of professions for the training of skilled workers in vocational schools on the basis of labour market monitoring; creation of a system of information and analytical support in the field of management of educational institutions, information and technological support for monitoring education; creation of an effective system of methodological, scientific and methodical support for the modernization of national education, forecasting trends in the innovative development of the education system using the results of monitoring studies; generating innovative ideas, their identification, selection and implementation; forming an open information and analytical base of innovations in all subsystems of education (Verkhovna Rada of Ukraine, 2013).

Promising directions for ensuring monitoring and evaluation of PVE quality in Ukraine are: improvement of the system of external independent evaluation and monitoring of the education quality, remuneration of employees involved in conducting external independent evaluation; development of a model for conducting monitoring studies for different levels of education management; development of a indicators system of the education quality at the national level, which reflect the conditions, processes and educational results; monitoring the quality of resources, educational processes and results; participation in international comparative studies of the quality of education (TIMSS, PISA, PIRLS, etc.); modernization and updating of the system of educational statistics; providing the population, governing bodies, educational institutions with reliable information on the conditions and effectiveness of the education system at its various levels; publication of the results of the education system monitoring, in particular by means of information and communication technologies (Verkhovna Rada of Ukraine, 2013).

The expected results of the implementation of the State Target Social Program for the Development of Professional (Vocational) Education for 2022-2027, determination of its effectiveness include the creation of an education management information system (EMIS); development and implementation of a framework methodology for analyzing regional labour markets with the possibility of annual monitoring, updating relevant data – for planning educational activities and forecasting the need for personnel by profession (Verkhovna Rada of Ukraine, 2021c)

In order to facilitate the modernization of the Professional (Vocational) Education System in accordance with the current and future needs of the labour market, the best international standards and practices to ensure the realization of the right of citizens

to quality and affordable PVE, to create conditions for the formation and development of relevant professional competencies necessary for their successful professional activity and self-realization, as well as the development of human resources as a factor of economic growth of the state, regional labour markets are monitored and employment of PVE graduates is promoted (Verkhovna Rada of Ukraine, 2021b).

In conducting systematic monitoring of the employment of PVE graduates, an important role is given to public-private partnerships, which involves the participation of all stakeholders, including employers (Verkhovna Rada of Ukraine, 2019). The implementation of monitoring studies takes into account the provisions of the Human Development Strategy, which defines the goals and main tasks facing the state in ensuring the national security of Ukraine, as well as indicators of goals achievement that enable monitoring, effective planning, proper evaluation of social investments in human potential. The main tasks of the operational objective of the Human Development Strategy "ensuring the organization of distance learning by educational institutions, the use of digital technologies in education" include creating conditions for the use of digital technologies to assess the learning outcomes of students and conduct monitoring studies of the quality of education (Verkhovna Rada of Ukraine, 2021).

An important area of achieving the strategic goal "Creating an inclusive, innovative and educated society in which citizens have equal rights and opportunities to develop their talent throughout life" is the introduction of monitoring studies of the quality of PVE; launching an electronic system for monitoring the employment of graduates of educational institutions; strengthening the function of supervisory boards, monitoring and auditing the economic activities of educational institutions after the introduction of financial autonomy (Verkhovna Rada of Ukraine, 2021).

Determination and implementation of the general strategy for monitoring the quality of PVE belongs to the powers of the central executive body that ensures the formation of the state policy in the field of PVE (Verkhovna Rada of Ukraine, 1998).

At the same time, monitoring studies on the quality of educational activities and the quality of education in the manner prescribed by law are carried out by the Central Executive Body for Quality Assurance in Education and its territorial bodies (Verkhovna Rada of Ukraine, 2017).

Monitoring studies in the field of PVE are entrusted to the National Academy of Educational Sciences of Ukraine, in particular to its structural sub-

division, the Institute of Vocational Education (Radkevych, 2022), as well as the analysis of monitoring studies and submission of information on their results to the Ministry of Education and Science of Ukraine (Verkhovna Rada of Ukraine, 2004).

In addition, educational institutions, other scientific, scientific-methodological and methodical institutions in cooperation with relevant enterprises, creative unions, associations, societies, public associations, including specialized organizations (professional associations), employers' associations, independent institutions for evaluation and quality assurance of education participate in monitoring the quality of PVE, including international programs (Verkhovna Rada of Ukraine, 2017).

Pedagogical staff of educational institutions take an active part in monitoring the quality of PVE, which implies that they have the knowledge and skills to monitor pedagogical activities and analyze pedagogical experience, conduct educational measurements, apply educational technologies and teaching methods, effective ways of interaction of all participants in the educational process (Verkhovna Rada of Ukraine, 2017).

Monitoring of the quality of PVE and other studies in the field of education, including external independent evaluation, is systematically carried out by the Ukrainian Center for Educational Quality Assessment and its regional units (Verkhovna Rada of Ukraine, 2010).

According to Article 39 of the Law of Ukraine "On Education", conducting monitoring studies and developing medium-term forecasts of the need for a certain type of economic activity in personnel in terms of professional and partial professional qualifications is also entrusted to sectoral councils for the development of professional standards (Verkhovna Rada of Ukraine, 2017).

Subjects of public supervision (control) also take part in monitoring studies on PVE and publishing the results of such studies by: assessing the quality of learning outcomes, including monitoring of the state final certification, exams and other forms of learning outcomes assessment; quality of textbooks and other educational materials; allocation of education costs and targeted use of funds from the state and local budgets, other sources not prohibited by law (Verkhovna Rada of Ukraine, 2017).

The data obtained from the results of monitoring studies of the quality of PVE are reflected in the educational statistics of Ukraine, which is approved by the Central Executive Body in the field of education

and science in agreement with the Central Executive Body that implements state policy in the field of statistics (Verkhovna Rada of Ukraine, 2017).

The analysis of pedagogical research in accordance with the tasks actualized at the present stage made it possible to identify the main methodological approaches in the organization of training of future specialists: competence-based, activity-based, personality-oriented, differentiated, culturological, axiological, competence-oriented, meta-subject, acmeological, system-activity, synergetic, informational, etc.

In addition, quite often approaches are widely used in the training organization of future specialists: gender, technological, environmental, humanistic, anthropological, innovative, individual, research, interdisciplinary, regional historical, socio-cultural, integrative, individual-personal, humanistic-personal, professionally oriented, subject-activity, cluster, inclusive, knowledge-based, network, modular-competent, andragogical, cultural-historical, project, cybernetological, qualimetric, creative, contextual, activity-competent, ecological, phenomenological, naturalistic, art-pedagogical, health-preserving, practice-oriented, entrepreneurial, phenomenological, age-oriented, paradigmatic, problematic, process, multicultural, personality-centered, personality-humanistic, hermeneutic, variable, constructivist, age-based, resource-based, market-based, heuristic, anthropo-ecological, cognitive, philosophical and ideological.

There is also a group of approaches that can be called rarely used or author's: semiotic, formal, system-synergetic, spatial, culture-centred, biographical, ethnopsychological, coaching, ethno-cultural, dogmatic, reproductive, sectoral, systemic, system-value, gender specific, caste, procedural, intuitive-practical, etc. Thus, the number of approaches used in modern education is significant, and by the nature of its direction is quite a multidirectional phenomenon.

Due to the need to generalize approaches to monitoring research in vocational education, the methodology for determining methodological approaches to digital learning in modern PVE institutions was used (Hurzhii et al., 2022).

Taking into account the results of the expert evaluation, a Pareto diagram was constructed (Fig. 1), which shows the distribution of data in descending order of their frequency (sum of rating values). It was found that five approaches received more than 70% of the total sum of ratings. Let us define such approaches as the main ones.

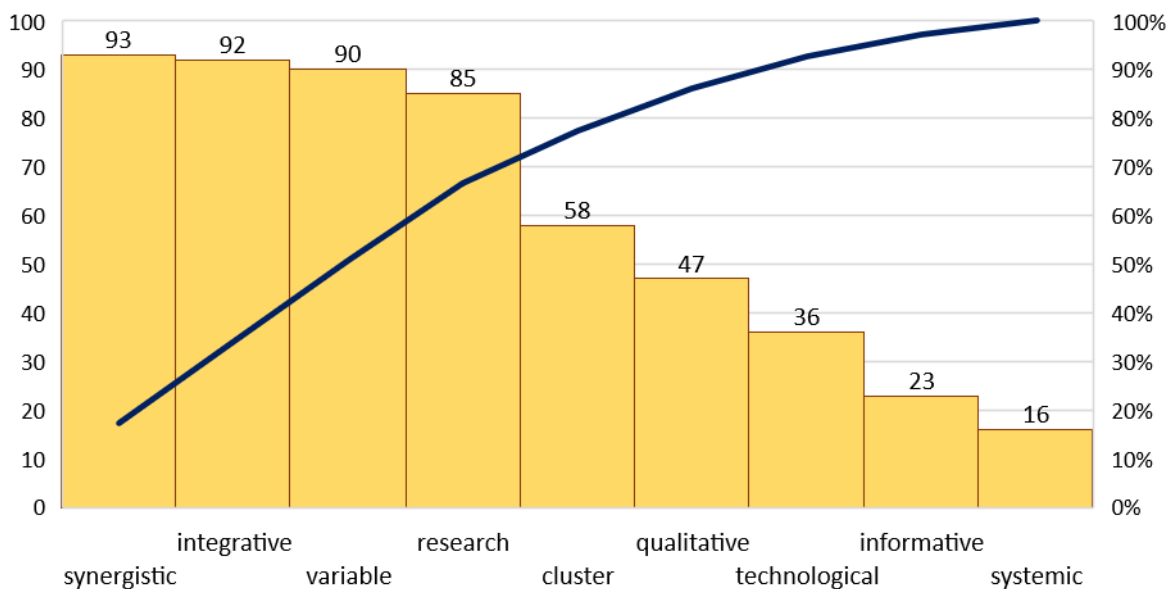


Fig. 1. Distribution of expert assessments of methodological approaches to monitoring studies in vocational education (Pareto diagram)

Thus, monitoring studies in vocational education should be carried out on the basis of the following methodological approaches:

- systemic (allows to analyze various factors of influence on the system of vocational education in their dialectical relationship);
- informational (means effective use of the potential of information activities necessary to study the specifics of vocational education);
- technological (involves the use of digital technologies in the analysis of processes taking place in the vocational education system);
- qualimetric (focuses on taking into account the requirements of standards, provides for quality assessment based on certain criteria);
- clustering (allows you to consider a fairly large amount of information, compressing it and making it compact and visual).

The methodology of monitoring studies in vocational education is based on both general and specific forecasting methods. The basis of these methods is conducting analytical research, preparing a database, studying and combining information into a single whole.

At the same time, students, teachers, employers should be involved in monitoring the results, which ensures that research is focused on the needs of the population and increases the sustainability of the impact of the results on decision-making (The Future is Now, 2019, p. 34).

Extrapolative forecasting is an effective method of forecasting that assumes that patterns that have existed in the past will continue into the future and

that these patterns are regular and measurable (Fildes, 1992, p. 81).

The expert assessment method is widely used, which is based on rational conclusions and intuitive decisions of highly qualified specialists regarding the objects of forecasting (Boiko, 2018, p. 9).

Since the PVE system is constantly undergoing planning processes for the short and long term, it is useful to use normative forecasting (Normative forecasting, 2022). Thanks to the normative method, it is possible to explain the relationship between the forecast and public policy decisions in the field of education. This method requires first defining the expected future outcome and then planning policies and measures to achieve these outcomes.

Vocational education problems require strategic cooperation as well as different perspectives and types of knowledge. The application of the reflexive method allows analysts to identify barriers and turn them into opportunities for solving educational problems. Reflexive monitoring is an innovative method of monitoring and evaluation that aligns day-to-day activities with long-term plans (Mierlo et al., 2010, p. 13).

Many forecasting problems are related to the time component. Therefore, time series forecasting is a method of forecasting events through a sequence of time. It predicts future events by analyzing past trends, assuming that future trends will be similar to historical trends (Paul, 2020, p. 2).

A useful evaluation method that is often used in practice is forecasting by analogy, which allows forecasting based on historical experience, analysis

of similar systems, and the use of induction and deduction. Experts list analogies, assess their similarity to the target and compare the results with possible target results. Then, based on this information, analysts make a forecast (Hyndman & Athanasopoulos, 2018, 93-94).

A special place in the forecasting system belongs to the modeling of various characteristics and individual aspects of the educational process both at the general education and professionally oriented levels within the national socio-cultural space (Lodatko, 2022, p. 3). The modeling method allows to study the objects and phenomena of the vocational education system on models in order to obtain explanations of the processes and formulate predictions.

Whatever forecasting methods are used in the study of vocational education, the main purpose of their application is to ensure the reliability of the forecast and the reliability of the results. Thus, the main methods of monitoring research in vocational education are: extrapolation forecasting; expert evaluation; normative forecasting; reflective; time series forecasting; forecasting by analogy; modeling, etc.

The availability of digital technologies and the Internet provide the technological infrastructure for universal access to data and computing power. Advances in mathematics, computer science, engineering, and other disciplines have made possible the implementation of scalable, empirically tested computational models that transform data into actionable insights. Data visualization and new interfaces are being developed to help communicate computational results to diverse stakeholder groups (Börner et al., 2018, p. 12573).

Online survey technology plays an important role in the monitoring research system. With the help of the survey, it is possible to find out the structure of educational needs of young people; priority types of educational institutions, types and levels of vocational education that are in demand in the market of educational services; desired areas and motives for choosing future employment; the state of awareness of students, employers, teachers about the state of the labour market, etc.

Among the existing services for collecting and processing information through surveys, the most popular are:

1. Google Forms, which is part of the free web package Google Docs Editors.

2. Survio is a software for conducting surveys, market research, customer satisfaction assessment and feedback. Scope of application: market research, service provision and graduate support departments.

Human resources departments can use it to check potential candidates and collect opinions of existing team members, teachers can optimize the educational process (<https://www.survio.com>).

3. SurveyMonkey is a service for creating surveys, sending questionnaires in bulk and identifying trends. The service allows you to quickly create surveys, customize their design and look, swap questions, conduct A/B testing, embed surveys on websites and social networks, compile very detailed and visual reports, protect data and integrate tools with MailChimp, GroSocial, CleverReach and other services (<https://www.surveymonkey.com>).

In addition, use such services as: Examinare, FOQUZ, FormDesigner, Mentimeter, Polldaddy, Polys, Questionstar, SimpleForms, Simpoll, stepFORM, Testograf, Typeform, WebAsk, etc.

The next important aspect of monitoring is the study of the employment problems of PVE graduates based on the materials study of employment services and education authorities, statistical data from government agencies, etc.

The website of the State Statistics Service of Ukraine (<https://ukrstat.gov.ua>) presents information on various sectors of the country's economy in the form of tables.

To process information, database technology is used, which contains such resources as information (specially structured information – spreadsheet), human resources (specialists who create and maintain databases); information processes related to the presentation and systematization of information, its storage and retrieval; information systems (Database and Spreadsheet Software: Tools & Management, 2013).

Microsoft Excel, a program designed to work with spreadsheets, is widely used in various environments (Microsoft Windows, Windows NT, Mac OS, Android, iOS and Windows Phone).

Taking into account the provisions of the National Qualifications Framework (Cabinet of Ministers of Ukraine, 2011), the concept of "Professional competence of a teacher in monitoring research" is a dynamic combination of knowledge, skills, abilities, ways of thinking, views, values, other personal qualities that determines the ability of a teacher to systematically use a set of methodological, methodical, organizational and technical procedures in order to obtain reliable data in the field of vocational education for their further use in scientific or practical work.

In order to effectively assess the training of vocational teachers to conduct monitoring research in vocational education, we will use the four-component

structure (Pryhodii, 2021, p. 6) to substantiate the criteria and relevant indicators of the professional competence of the teacher to conduct monitoring research:

- motivational (interest in prognostic studies in education; awareness of the role of monitoring in the system of vocational education at the present stage of development of society; desire to increase knowledge on the use of monitoring in education);
- cognitive (knowledge of ways, means of searching for information about the labor market, demand for professional qualifications, the state of vocational education; knowledge of monitoring research methods; knowledge of technologies for obtaining and processing data in monitoring research);
- activity (to search for information on the state, needs and prospects for the development of the vocational education system; to master the methods of monitoring research; to apply technologies for obtaining and processing data in monitoring research);
- reflective (ability to manage, self-organize and control own activities during monitoring studies; to assess the relevance of the selected methods and technologies to the tasks arising in the monitoring of vocational education).

For assessment, four levels (Kryvorot & Pryhodii, 2022, p. 36) of competence in monitoring research are justified:

Initial level – the teacher has fragmentary knowledge of ways, means of finding the necessary information; can show some skills in using monitoring research methods; does not show interest in monitoring; does not seek to expand knowledge independently.

Low level – the teacher has basic concepts and knowledge of monitoring; his/her skills are selective and not systematic; is not able to choose the best methods and technologies of monitoring; is aware of

the importance of monitoring of vocational education, but does not demonstrate perseverance in his/her own professional growth in this field of knowledge; has doubts about his/her ability to deepen knowledge independently.

Middle level – the teacher demonstrates knowledge and understanding of the need for monitoring studies; controls his/her own activities on the organization of monitoring studies; accumulates information about new ways, means of searching and methods of information processing, but not always successfully applies them; demonstrates persistence in independent deepening of knowledge, is interested and sufficiently inquisitive in analyzing the state of vocational education.

High level – the teacher knows and understands the specifics of searching for information about the labor market, the demand for professional qualifications and vocational education in general; is able to establish and maintain contacts with the state employment service, social partners on the organization of vocational education; constantly improves skills and practical skills in monitoring; finds and persistently analyzes new ways, means, methods and technologies for searching and processing information; pays considerable attention to independent work to deepen knowledge; is aware of the need for monitoring as an important component of professional activity.

The survey of teachers (138 participants) on the problem of monitoring in the field of vocational education (Fig. 2) showed that most teachers have a low level of professional competence, the main reason for this situation is the lack of mechanisms for their systematic involvement in this type of activity and appropriate theoretical and practical training.

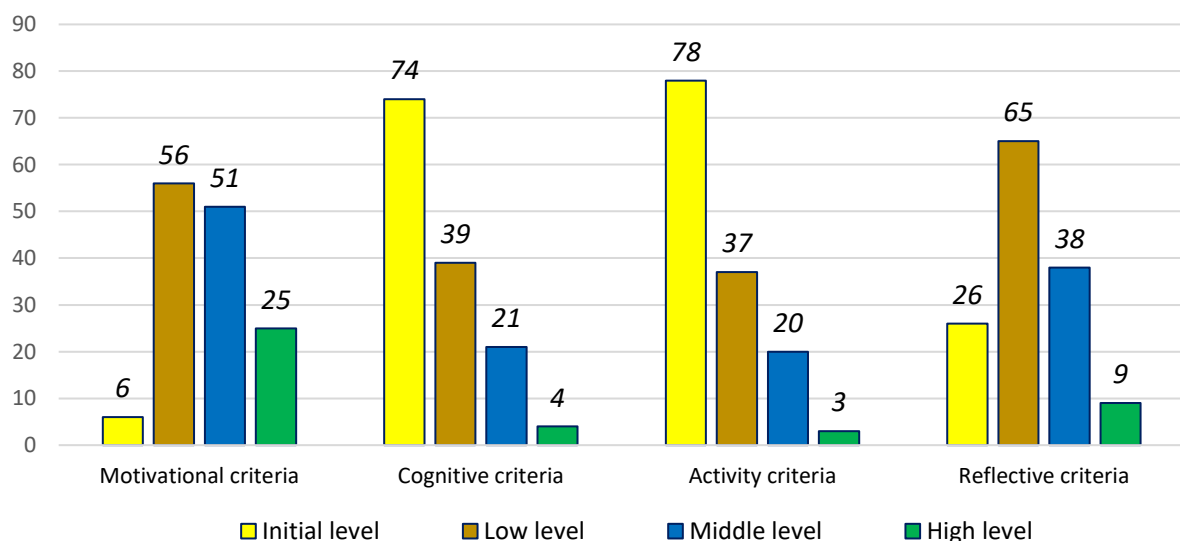


Fig. 2. Levels of professional competence of a teacher in conducting monitoring studies (ascertaining stage)

It was found that within the motivational and reflective criteria, teachers demonstrated high and average results (55% and 30% accordingly), which indicates their readiness to objectively assess the level of their own preparation for this type of professional activity and awareness of the role and place of monitoring in the modern education system.

It has been found that most teachers have insufficient knowledge and experience in monitoring research in vocational education (low level of cognitive criterion – 54%; activity criterion – 57%). The main reason for this situation is the lack of mechanisms for their systematic involvement in this type of activity and appropriate theoretical and practical training.

Conclusions. Ukraine has a legally balanced system of state monitoring. For the effective implementation of monitoring studies in the PVE, methodological approaches (system, information, technological, qualimetric, cluster) should be followed, which

determine the use of a group of methods (extrapolation forecasting, expert assessment, normative forecasting, reflexive, time series forecasting, forecasting by analogy, modeling) and technologies (online surveys and databases).

For the effective organization of PVE, a teacher should be able to monitor the professional qualifications in demand in the labour market, have the ability to establish and maintain links with the state employment service and social partners, identify general trends in the organization and implementation of the educational process, taking into account the needs of students.

There is a low level of training of pedagogical staff on these issues, so it is recommended to strengthen the theoretical and practical training of future vocational teachers on the organization of monitoring studies in PVE institutions.

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НОРМАТИВНА БАЗА, МЕТОДОЛОГІЯ ТА ТЕХНОЛОГІЇ МОНІТОРИНГОВИХ ДОСЛІДЖЕНЬ У ПРОФЕСІЙНІЙ ОСВІТІ (ІМПЛЕМЕНТАЦІЯ ЄВРОПЕЙСЬКОГО ДОСВІДУ)

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Реферат.

Актуальність: динамічні зміни на ринку праці впливають на підвищення рівня затребуваності роботодавцями кваліфікованих робітників з актуальних професій, що зумовлює необхідність здійснення відповідних моніторингових досліджень. Ефективному функціонуванню закладів професійної (професійно-технічної) освіти (далі – П(ПТ)О) сприятиме запровадження структурних підрозділів, що забезпечуватимуть збір та аналіз інформації про ринки праці, освітні послуги, спостереження за конкурентами, відстеження нових тенденцій розвитку П(ПТ)О та прогнозування змін у галузях економіки.

Мета: визначення нормативної бази, методологічних підходів моніторингових досліджень у П(ПТ)О та обґрунтування методів, технологій аналізу результатів навчання здобувачів П(ПТ)О.

Методи: аналіз та синтез для визначення стану розробленості проблеми моніторингових досліджень в П(ПТ)О; узагальнення для формулювання висновків і рекомендацій щодо технологій аналізу результатів навчання здобувачів П(ПТ)О та фахової передвищої освіти; діагностичні (анкетування, бесіда) для з'ясування методологічних підходів, методів та технологій моніторингових досліджень в професійній освіті.

Результати: встановлено, що з метою сприяння модернізації системи П(ПТ)О відповідно до сучасних та перспективних потреб ринку праці, кращих міжнародних стандартів і практик для забезпечення реалізації права громадян на якісну та доступну П(ПТ)О, створення умов для формування і розвитку актуальних професійних компетентностей особи, необхідних для її успішної професійної діяльності та самореалізації, а також розвитку трудових ресурсів як фактору економічного зростання держави проводиться моніторинг регіональних ринків праці та сприяння працевлаштуванню випускників закладів П(ПТ)О; проаналізовано європейський досвід використання методів моніторингу у системі освіти та технології отримання й обробки даних системи освіти; встановлено, що у педагогічних працівників на низькому рівні сформована компетентність з прогностичних досліджень в освіті, тому рекомендується посилити теоретико-практичну підготовку майбутніх педагогів професійного навчання з питань організації моніторингових досліджень у П(ПТ)О.

Висновки: в Україні існує законодавчо виважена система державного моніторингу; для ефективного здійснення моніторингових досліджень в П(ПТ)О варто дотримуватися методологічних підходів (системного, інформаційного, технологічного, кваліметричного, кластерного), що обумовлюють використання групи методів (екстраполяційного прогнозування, експертної оцінки, нормативного прогнозування, рефлексивний, прогнозування часових рядів, прогнозування за аналогією, моделювання) та технологій (онлайн-опитування та баз даних).

Ключові слова: моніторинг, дослідження, П(ПТ)О, методи моніторингу, технології моніторингу, методологічні підходи моніторингу.

Received: 05 October 2022

Accept: 09 December 2022