

РОЗДІЛ II

МОДЕРНІЗАЦІЯ ЗМІСТУ ПРОФЕСІЙНОЇ ПІДГОТОВКИ КВАЛІФІКОВАНИХ РОБІТНИКІВ

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SIMULATION TRAINING CONTENT SKILLED WORKERS MACHINE PROFILE

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theory.

Abstract

The article deals with the problem of modeling the content of training skilled workers engineering profile as methodological, theoretical and methodological problem of modeling educational systems, processes and phenomena, such as vocational education, the ways of its solution by practical results and their scientific value. The leading idea is the provision of the fact that one of the powerful tools of research, development, implementation and use of quality content training future professionals including skilled workers as core machine profile and performance criteria of vocational education is its design, namely formalization (schematization and simplification) in a manner that would allow in this complex system to measure and evaluate the training of future professionals to track those characteristics that play a role in defining models of vocational education and its elements and to be studied, evaluated and managerial influence requiring the use of modern achievements of various branches of science, including mathematics, computer science and statistics.

The diversity of modern enterprises makes the need for such skilled workers who are competent in their chosen professional field. Today the labor market requires a clear definition of professional competence of skilled workers in different sectors. The transition from industrial technologies to scientific information production, the rapid development of information all spheres of society, including the introduction of modern technologies require corresponding changes in the training of qualified personnel for engineering - a key sector of the economy, its backbone.

The above needs when preparing skilled workers to apply engineering competency profile approach. In addition, in recent decades, often used in teaching began studies modeling method. It is not surprising, because modeling is one of the key technologies of system analysis in the study of complex, multi polistrukturnyh and systems operation is determined by a large number of internal and external factors.

Since 2004 to 2014 in Ukraine on 13.00.04. - "Theory and Methods of Professional Education" defended over 108 theses, which are present in the description keywords "content" "professional" "training", including 19 doctoral work, including various aspects of training teachers devoted 12 works, specialists of other specialties - 7 works,

including in terms of this study is to provide research V.K.Fedorchenko (training for tourism), AP Konoha (training future specialists in sports and health tourism in higher education), M.M.Kozyar (training the units of emergencies) O.V.Matviienko (training of specialists in information support system of non-production sphere) V.H.Motorinoyi (training future teachers of mathematics). This situation is understandable, since the future specialist, as a result of the functioning of educational systems depends on the teachers. Note also work N.M.Sobchak dedicated to the research content and form of the training of social workers in the system of uncertain US education and research and Kozak NV (didactic bases of training future teachers in Germany (second half XVIII - the end of XX century).

Thus, analysis of scientific papers [1] demonstrates the lack of a holistic, systematic and thorough study of the problem of modeling the content of training skilled workers engineering profile.

The aim - to equip scholars and teachers ideas, methods, ways of solving the problems of broad classes of modeling educational systems and processes.

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including skilled workers as core machine profile and performance criteria of vocational education is its design, namely formalization (schematization and simplification) in a manner that would allow in this complex system to measure and evaluate the training of future professionals to track those characteristics that play a role in defining models of vocational education and its elements and to be studied, evaluated and managerial influence requiring the use of modern achievements of various branches of science, including mathematics, computer science and statistics.

For the purpose of the study, the following tasks:

1. Analyze the methodological, theoretical and methodological foundations of modeling tasks of training future specialists in educational research and identify its problems in educational theory and practice by analyzing the works of local and foreign scientists.

2. On the basis of scientific sources on the theory and empirical experience of modeling objects of different nature to justify the objectives, principles and functions of modeling educational systems and processes.

3. To develop the theory of modeling the content of training future professionals as part of the general method of learning that targets specific phenomena of vocational education, namely to develop a theory:

models of professional competence of specialists skilled workers as an example of engineering profile (define the essence of the concept of "professional competence of skilled workers engineering profile" structure, performance and levels of professional competence of a skilled worker machine type, formalize the professional competence of skilled workers engineering profile formulate the problem of diagnosing, research, planning, optimization and forecasting of professional competence of skilled workers and engineering profile propose methods to solve them) as the core of future specialist, key results and performance criteria for vocational education as a complex, driven and open systems;

models of the system of vocational education as an open system in terms of the tasks of training skilled workers;

4. Investigate information, methodological and content modeling software training skilled workers engineering profile.

5. Develop organizational and

methodological foundations of modeling the content of training skilled workers engineering profile, namely to explore the question:

model as the basis for decision making management decisions in vocational education;

the impact of model solutions for the formation of professional competence of graduates of vocational schools of engineering profile (or in other words the effectiveness of vocational education as an open system).

The concept study determines the theoretical and methodological foundations of modeling the content of training skilled workers and machine profile contains the following concepts:

1. Improving the professional competence of specialists skilled workers including machine profile as a result of the system of vocational training (complex, driven and open system) through the use of evidence-based content of their training in modern social and economic conditions may be subject to research, development and application is not directly but through modeling and simulation in the operation of vocational education as a complex, driven and open system to isolate from a set of characteristics of individual properties and explore them using specially designed or known methods.

2. Determining the nature, structure of professional competence of skilled workers engineering profile and criteria, indicators and levels of formation evaluation will determine the ways, means, forms and methods of forming the content of training skilled workers engineering profile.

3. Simulation training skilled workers engineering profile as a system of interacting elements (professional competence, training content, the professional standard) provides its formalization for research, technological content and interpretation and development of mechanisms of control (influence) qualitatively different "sides" of professional competence of skilled workers machine type, which is the basis of future professional models.

4. The many research object and its manifestation in reality raises the complexity of its formalization, which requires a high level of abstraction, which is possible by using proper mathematical modeling techniques.

5. Models of the content of professional training and other models are functionally associated with them, including a model of

professional competence of skilled workers machine type, have a chance of testing and practical "survival" in a real educational process only if sufficient generality researched content procedural and structural components for its construction and application of research require different methodological, theoretical and methodological approaches of modern scientific thought.

The hypothesis of the study is based on the assumption that the methodological and theoretical principles modeling the content of training skilled workers would increase the profile of engineering probability and effectiveness research, improving the educational process and training that will provide quality formation of professional competence of specialists in the long run because it is a system of "late" (inertial), which requires the use of a term lagged models. Modern advances in various fields of science content modeling training skilled workers engineering profile should provide informative constructed models, ease of their use, their consistency other objects vocational education, improve mechanisms control the course of the educational process by influencing their individual components. The constructed models based on different mathematical objects will no longer exclude the possibility of different interpretations and development of the basis of different (in a sense) technology implementation model solutions.

Thus, the author hopes to advance and appreciate refute these allegations that scientific novelty of the results will be to the following:

First by studying scientific sources, theory and empirical evidence modeling various objects created universal education system modeling methodology and processes, substantiates objectives, principles and functions of modeling; an algorithm modeling etc.

The first time the theory of modeling the content of training future professionals skilled workers as an example of engineering profile as part of the general method of learning that targets specific phenomena of vocational education, namely *femenolohichni* developed and *hipotetiko-deductive* (based on mathematical linear algebraic equations and their systems) theory:

1. Model of professional competence of specialists skilled workers as an example of engineering structure (the essence of the

concept of "professional competence of skilled workers engineering profile" structure, performance and levels of professional competence of a skilled worker machine type, formalized professional competence of skilled workers machine type, formulated problem diagnosis research, planning, optimization and forecasting of professional competence of skilled workers engineering profile and methods of their solution and consider implanting a model of economic factors, cultural and others. nature [2]) as the core of future specialist, key results and efficiency criterion operation of vocational education as a complex [3], controlled and open systems;

2. The mathematical model of the system of vocational education as an open system in terms of the tasks of training skilled workers [4-6].

Improved organizational and methodological foundations of modeling the content of training skilled workers machine type, namely investigated questions: 1) model as the basis for decision making management decisions in vocational education [7,8] and analyzed the possibility of automating processes modeling [9]; 2) the effect of model solutions for the formation of professional competence of graduates of vocational schools of engineering as a criterion for efficacy profile of vocational education by improving content quality training;

The methods of assessment, research, planning, optimization and forecasting of professional competence of experts at "graduate - Group - VET - region - state" based on the ideology of building taxonomic indicators, and other mathematical methods;

Methods used to minimize the number of elements models; expert assessments of weight coefficients constructed models; constructed linear regression and symultatyvni (static and dynamic) model of the relationship of elements designed models.

The practical significance of the results is determined that will:

Opportunity to create such a science-based content training future professionals, which meets the required target levels of professional competence in accordance with professional standards set;

Opportunity to integrated and synchronized improvement of key elements of "professional standards", "professional competence", "training content" in preparing

future professionals in case of changes in at least one of the elements of the functioning of the entire system of vocational education;

Provided with a choice of consistent models listed above, the best, that is one that would provide maximum adequacy (probability) reflection of her modeling object properties that interest to the researcher;

Opportunity comprehensive quantitative assessment of professional competence of skilled workers engineering profile and other characteristics at different

levels "graduate - Group - VET - region - state";

Provided a qualitative and quantitative study of vocational education and its components based on linear models and symulatoryvnyh;

Interpretation of simulation content of training skilled workers with machine-profile system approach contributes to the development of practical recommendations for optimizing the educational process and appropriate evidence-based management decisions.

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Реферат

Моделювання змісту професійної підготовки кваліфікованих робітників машинобудівного профілю

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КЛЮЧОВІ СЛОВА:

професійна освіта, моделювання, навчальні, професійні стандарти, професійна компетентність, зміст навчання, теорія управління.

У статті розглянуто проблему моделювання змісту професійної підготовки кваліфікованих робітників машинобудівного профілю як методологічну, теоретичну та методичну проблему моделювання педагогічних систем, процесів і явищ, а саме, системи професійно-технічної освіти; запропоновано шляхи її розв'язання, визначені практичні результати та їх наукове значення. Провідною ідеєю статті є положення про те що, одним з потужних засобів дослідження, створення, впровадження та застосування якісного змісту професійної підготовки майбутніх фахівців, зокрема кваліфікованих робітників машинобудівного профілю як ядра та критерію ефективності функціонування системи професійно-технічної освіти, є його моделювання - формалізація (схематизація і спрощення) в такий спосіб, який при цьому давав би змогу комплексно вимірювати та оцінювати систему професійної підготовки майбутніх фахівців, відстежувати ті характеристики, які відіграють роль визначальних у моделях системи професійно-технічної освіти та її елементів і підлягають вивченню, оцінюванню й управлінському впливу, що вимагає застосування сучасних досягнень різних галузей науки, зокрема математики, кібернетики та статистики.

Реферат

Моделирование содержания профессиональной подготовки квалифицированных рабочих машиностроительного профиля

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КЛЮЧЕВЫЕ СЛОВА:

профессиональное образование, моделирование, учебные, профессиональные стандарты, профессиональная компетентность, содержание обучения, теория управления.

В статье рассмотрено проблему моделирования содержания профессиональной подготовки квалифицированных рабочих машиностроительного профиля в качестве методологической, теоретической и методической проблемы моделирования педагогических систем, процессов и явлений, а именно системы профессионально-технического образования, предложены пути ее решения, определены практические результаты и их научное значение. Ведущей идеей статьи является положение о том, что одним из мощных средств исследования, разработки, внедрения и применения качественного содержания профессиональной подготовки будущих специалистов, в частности квалифицированных рабочих машиностроительного профиля как ядра и критерия эффективности функционирования системы профессионально-технического образования, является моделирование, а именно формализация (схематизация и упрощение) таким образом, который позволял бы при этом комплексно измерять и оценивать систему профессиональной подготовки будущих специалистов, отслеживать те характеристики, которые играют роль определяющих в моделях системы профессионально-технического образования и его элементов и подлежат изучению, оценке и управленческому воздействию, что требует применения современных достижений различных отраслей науки, в частности математики, кибернетики и статистики.

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