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IMPLEMENTATION INFORMATION TECHNOLOGY OF COMPETENCY ASSESSMENT METHOD OF PROFESSIONAL ACTIVITY OF THE EDUCATIONAL SYSTEM EMPLOYEE

Abstract. Consistent and gradual spread in the West of the concept of "competence" in the practice of postgraduate education, professional development and retraining of professional personnel has led to the emergence in the education system of the concept of the so-called competency approach. Based on this concept, the International Labor Association introduces the concept of "key competencies", which include subject and social components, in the qualification requirements for professionals. The accumulated experience of implementing the competency approach in the education system has shown the presence of a number of problems due to the complexity of assessing the process and results of professional activities of educators. This problem has caused a flow of publications, varying in type, volume and content, from reputable and titular scholars to primary school teachers, the number of links to which there are millions on the Internet. The presence of many publications encourages the search for ways to solve the problem using the methods of qualimetry and information technology. In the article the information technology of the decision of problems of an assessment of professional activity of the educational system employee based on the competency approach is considered and offered for practical application. The essence of the method: a group of experts makes an information model (professiograms) of the educational system' employee – lists (thesaurus and alphabetical index) of the evaluated features – the range of powers (competencies in the sense of professional capacity), as well as the set of knowledge, skills and personal characteristics (competencies in the sense of expertise); each assessment object the experts compare for each of the features and assign a point on a four-point scale of the order that characterizes the degree of compliance of the assessment object to a particular feature; the obtained sets of assessments (personograms) are processed accordingly; the processing result (ranked list) is submitted to the decision maker. As an example of application of the method, the procedure of assessment the professional activity of a group of beginning teachers of a higher education institution is considered.

Keywords: competency; competence; expert method; information technology; decision making.

Introduction

The concept of competency approach as a method of assessment the professional activity of specialists is widespread in the West education system. Based on this concept, the International Labor Association introduces the concept of "key competencies", which include subject and social components, in the qualification requirements for specialists [1].

Problem formulation. The accumulated experience of applying the concepts of "competence" (from Ukrainian "компетенція", in the sense of professional capacity) and "competency" (from Ukrainian "компетентність", in the sense of expertise) in the practice of postgraduate education, professional development and retraining of professional personnel has shown that there is a problem related to the assessment of process and result professional activity in any area of human activity. The scientific approach to solving this issue is based on the application of qualimetry methods, which studies and implements procedures for quantitative assessment of product quality (product, process, service, etc.) [2, 3]. Thus, one of the ways to solve the problem of assessment the professional activity of a specialist in any area is to develop a suitable for practical application of appropriate information technology based on a competency approach.

Analysis of information sources. The experience of the authors in higher education institutions shows that the use of not very accurate and ambiguous terms makes it difficult to understand some provisions in scientific and educational activities. This maxim can be extended to any area of human activity.

In the search engines Google, Bing, Meta and Yandex on the retrieval query "terms" (from Ukrainian "терміни", in the sense of the concept, definition) found 17.1; 1.3; 13.4 and 21.9 million links respectively; on the retrieval query "competency approach" (from Ukrainian "компетентнісний підхід") – 2.93; 0.04; 1.80; 6.00 million links respectively; and on the retrieval query "competency approach in education" (from Ukrainian "компетентнісний підхід в освіті") – 3.94; 0.22; 2.70; 7.00 million links respectively. A Google search for "competence method" returned approximately 121 million results.

Obviously, there is an excess of information – a source of uncertainty, as opposed to lack of information. Since scientific activity is aimed at reducing uncertainty in a particular subject area, we define the object of research – the process of human activity in a particular field, and the subject of research – information technology for implementation of the competency method of assessment the professional activity of the educational system employee.

In this sense, we briefly analyze the state of the competency method as a subject area.

Among the English-language electronic sources, the first in terms of relevance in the search engine, we note a excursus [4] given in Wikipedia on the history of its origin in 1959 and the improvement of the concept of "competency" (from Ukrainian "компетентність") to

our time. Note that competency researchers did not agree on a single term of this definition. In our opinion, the so-called model of competency [5] can be considered acceptable, which will be given in translation and in the language of the original:

"Компетентність – це низка знань, умінь, навичок, досвіду та поведінки, що призводить до ефективного виконання індивідуальної діяльності. Компетентність вимірюється і може бути розвинена шляхом навчання. Її також можна розбити на менші критерії. (Competency is a series of knowledge, abilities, skills, experiences and behaviors, which leads to the effective performance of individual's activities. Competency is measurable and could be developed through training. It is also breakable into the smaller criteria)".

Principled in this definition is the possibility of measuring each of the components – knowledge, skills, etc. – that is, a list of what needs to be assessing.

Issues and problems of competence-based learning are considered in a large number of publications related to the formation and assessment of competencies in specific most popular subject areas (such as electronic [6] or communication [7]), as well as current trends in education in the West [8, 9]. A glossary of educational reform [9] can be considered a generalization, which highlights their content and meaning.

Competency assessment methods, which are described in sufficient detail in [10], calls for the availability of assessors, a list of competencies and criteria for their assessment, a description (algorithm) of the assessment process, as well as, preferably, the appropriate software.

In the fundamental work [11] the historical and social reasons of the problem of competency/ incompetency, which arose at the end of the sixties of the last century are considered.

Analysis of the development of education in the West [12] shows the trends of implementation and the main advantages of the competency approach in comparison with the so-called "knowledge" (from Russian "знаниевый"), the direction of restructuring the pedagogical process of modern education.

The paper [13] considers the purpose and objectives of modern education – the formation of key competencies, and competency is interpreted as knowledge-based, intellectually and personally conditioned experience, recorded in the form of competencies, including attitudes toward themselves as individuals, to interact with others, to activities in its various types and forms.

The essence of the work [14] is the possibility of combining in education the attitude to the development of the personality of the subject of study and practice-oriented formation of competencies based on the competency approach.

The book [15] provides a classification of competencies on key, universal, meta-subject, subject. The approach to diagnostics and assessment of competences of subjects of training, typology of competences as a basis for changes of educational environment is offered.

The study [16] provides a multi-level definition and characteristics of competency, it is emphasized that you can become competent by mastering certain competencies and implementing them in the experience of a particular activity.

From the many different by types, volumes and content of publications related to the research issue, authored by reputable and titular scholars to primary school teachers, it follows that different interpretations of the competency approach and its components do not determine what should be assessing and do not establish clear criteria and methods for processing the results of the relevant assessment.

In addition, in the interpretation of the competency approach there is confusion associated with the understanding of some authors of the concepts' synonymy (as in English) of "competence" (from Ukrainian "компетенція") and "competency" (from Ukrainian "компетентність"), and when they are distinguished – in understanding the process leading to receipt the competency, – formation of key competencies or acquisition of competence through the formation of competencies. It follows that competence cannot be considered as a component of competency and vice versa.

We emphasize that when developing terms in any area of human activity, special requirements are taken into account [17], [18], and the limits of terms are set by legislative, regulatory, administrative, administrative and/or other documents.

We quote several related legally established terms [19]:

"… Quality of higher education – a set of qualities of a person with higher education, which reflects his professional competency… (… Якість вищої освіти – сукупність якостей особи з вищою освітою, що відображає її професійну компетентність…)".

"… Competency – a dynamic combination of knowledge, skills and practical skills, ways of thinking, professional, ideological and civic qualities, moral and ethical values, which determines a person's ability to successfully carry out professional and further educational activities and is the result of training at a certain level of higher education (Article 1, Part 1, item 4); … Educational (educational-professional, educational-scientific or educational-creative) program - a system of educational components…, as well as the expected learning outcomes (competencies), which must be mastered by the applicant for a relevant higher education degree (Article 1, Part 1, item 17); … Learning outcomes – knowledge, skills, abilities, ways of thinking, views, values, other personal qualities that can be identified, planned, assessed and measured and which a person is able to demonstrate after completing the educational program or individual educational components (Article 1, Part 1 , item 19)" (… Компетентність – динамічна комбінація знань, вмінь і практичних навичок, способів мислення, професійних, світоглядних і громадянських якостей, морально-етичних цінностей, яка визначає здатність особи успішно здійснювати професійну та подальшу навчальну діяльність і є результатом навчання на

певному рівні вищої освіти (ст. 1, ч. 1, п. 4); …
Освітня (освітньо-професійна, освітньо-наукова чи
освітньо-творча) програма – система освітніх
компонентів …, а також очікувані результати
навчання (компетентності), якими повинен
оволодіти здобувач відповідного ступеня вищої
освіти (ст. 1, ч. 1, п. 17); … Результати навчання –
знання, уміння, навички, способи мислення,
погляди, цінності, інші особисті якості, які можна
ідентифікувати, спланувати, оцінити і виміряти та
які особа здатна продемонструвати після
завершення освітньої програми або окремих
освітніх компонентів (ст. 1, ч. 1, п. 19)".

By the way, the General Conference of the
International Labor Organization recommends [1] to
define "competency" as a term that encompasses
knowledge, skills and work experience applied and
improved in specific conditions.

The above allows us to offer compiled from
sources [1, 11, 16, 19, 20, 21, [22], generalized
definitions that meet the requirements of [17, 18]:

- competence – the range of powers (rights and
responsibilities) granted by law, charter or other act to a
specific body, official or employee;

- competency – awareness – knowledge and
experience (skills and abilities) - in a particular subject
area or in a particular issue, as well as personal
characteristics;

- qualification – an official reflection of the degree
of technical or professional skills of the employee,
recognized at the international, national or sectoral
level.

These terms imply the presence of assessment
methods: firstly, competencies as a result of upbringing
and training (learning) for professional activities in any
area, in fact – the quality of human education (indirect
indicator of the quality of educational activities of the
employee of the educational system); secondly,
competencies as a result of professional activity of the
individual.

In other words, for a specialist of a certain level
of qualification there should be a model that
determines the level of his competency – education
(and upbringing) – on the one hand, and on the other
– a subjective characteristic that reflects the quality
of his professional activity and, as a consequence, the
person's suitability for the position, that is his
qualification level.

Next, we will distinguish between the competency
approach as the joint development of personality and the
formation of competencies of the subject (very similar
to the so-called educational process) and the
competency method as a method of assessment the
degree of individual' preparedness for a particular type
of professional activity.

Thus, the above determines the relevance and
purpose of the publication, annotated in the title – to
develop and propose for practical application of
information technology to solve the problem of
assessment the professional activity of an employee of
the education system, based on a competency
approach.

Research results

The purpose and tasks of the research. The
purpose of the study is to develop and propose for
practical application a single method for solving the
problems of assessment the results of professional
activity of an educational system' employee (ESE) on
the basis of a competency approach, suitable for
implementation using information technology.

Research tasks:

- to determine the method of developing models of
specialists, to formulate clear criteria for assessment the
professional activity' results;

- to develop a model of an ESE;

- to determine the method of processing the results
of the assessment the professional activity of an ESE;

- to develop information technology for solving
problems of assessment the professional activity of an
ESE by the competency method and to check the
possibility of its application in practice.

**The choice of method of solving problems of
assessment of a specialist' professional activity**. The
task of assessment the professional activity of
specialists is solved in conditions of uncertainty due to
lack of information about specialists – comparison
objects (CO), inaccuracy of the CO' features (properties)
description, imperfection of methods of assessment of
CO' features, etc. The scientific and methodological
approach to solving such problems is considered in
sufficient detail in electronic and literary sources, which
allows us to believe that most of these problems are
solved using expert methods [23].

The veracity of the decisions (recommendations)
on the comparison objects depends on the completeness
and adequacy of their models.

Method of developing models of specialists. The
information model of a specialist in any area of human
activity – a professiogram – should be presented as a set
of several components, such as competencies (from
Ukrainian "компетенція") and competencies (from
Ukrainian "компетентність").

Competences are set by laws, regulations, charters,
departmental instructions and other administrative
documents. The list of competencies (rights and
responsibilities) is actually a subjective component of
the model of a specialist (official) of a certain level of
qualification.

Lists of relevant competencies are lists of
individual' general properties and personality traits
(features of upbringing) and education (preparedness for
professional activity) – components that reflect the
results of direct and indirect activities of the family and
society in relation to the individual.

The method of developing an information model is
considered in [24]. The development process involves
the customer, developer and users, whose task is to
choose terms that describe the relevant features
(properties, characteristics, parameters, etc.), which
have encyclopedic definitions or are given in
explanatory dictionaries, and which can be considered
standardized. Linguistic processing of terms and
definitions by two main groups of synonyms -

conceptual (ideographic) and stylistic – is in progress. Thus ideographic synonyms, and also antonyms of concepts are includes in the final list.

The complexity of the tasks of assessment the professional activity of specialists necessitates the use of a decision support system, the purpose of which is determined by the content of its knowledge base [23]. The heuristic method of presenting knowledge in the form of a frame (Fig. 1) involves the presence of a thesaurus to describe the subject area; an alphabetical index of concepts, terms and definitions is used as a linguistic means of data manipulation.

Together, they compile an out-of-machine knowledge base for experts and a knowledge base (frame and slot names) used directly by the computer in computational procedures.
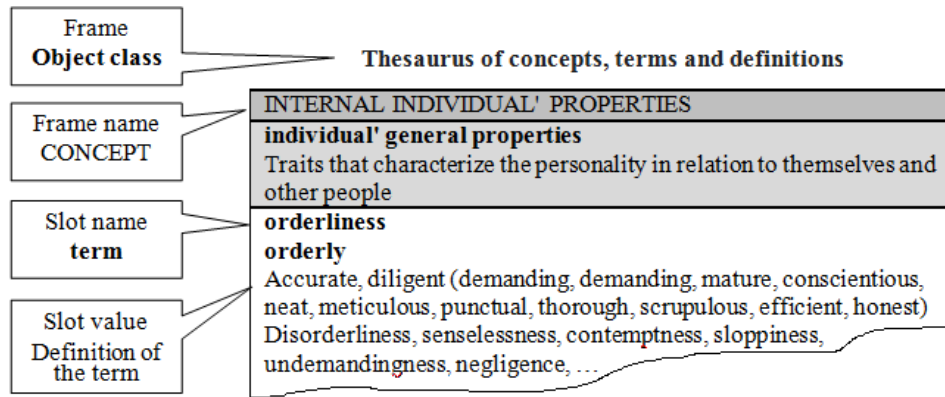

Fig. 1. Graphic representation of the fragment frame description of the model

The procedure for developing a professiogram using the expert method of assigning points on a four-point scale is considered in [25]: each of the set of features is assessed by each of the experts according to the rules (Table 1) as an answer (judgment) to questions (statements) such as "Does a particular feature describe a specialist as an comparison object?"; for each of the features, the assessments of experts are averaged and presented in the values of the improved four-point scale (IFPS) [26].

Table 1 – **Correspondence of judgments to scores of the rating scale**

Rule	Point
Yes	5
More likely yes than no	4
More likely no than yes	3
No	2

Note that the use of arithmetic mean to assessing the results obtained by non-numerical nature data does not contradict the theory for narrow scales [27], which is confirmed by the results of calculations [28].

Method of processing the results of assessment of professional activity. The results of professional activity of any comparison object are assessing according to the appropriate professiogram – the model of the specialist.

Both quantitative scales and order scales are often used when assessing professiogram features [2]. It is difficult to get directly some generalized indicator that characterizes the quality of CO in general. If the results of instrumental measurements are translated into order scales, the problem is solved, and the generalized indicator can be given in the order scale. In this case,

the measurement of the properties (features) of the CO by the expert method of assigning points is performed, using the decision on the assessment result as an answer to the question "Does a particular feature inherent to this comparison object?" (Table 1). This procedure is quite similar to that used in compiling the professiogram and discussed above.

Assume that the professiogram includes the competencies of upbringing, education, especially important in the initial selection, and the competencies of professional activities that can serve to monitor the formation of the specialist and his experience.

Competency of upbringing implies the presence of a list of general personality traits (in alphabetical order) – accuracy, altruism, demanding, ingenuity, responsibility, etc. [29].

Competency of education may include in the set of characteristics the average scores in the profile disciplines of professional activity, preparedness of the previous level, the results of Eysenck tests and special tests, and so on.

Competences in the form of a list of powers (rights and responsibilities) of a specialist or official define the subjective component of the professiogram, which determines the professional suitability or compliance with the position of the assessment (comparison) object. These may be signs of the responsibilities of the delineated boundaries of the field of professional activity, such as methodological, educational components, etc.

These competencies are assessed by experts (managers, colleagues or employees, subordinates, consumers of the results of professional activities of the CO) on a four-point scale (Table 1) as response to questions such as "Does the comparison object cope with their responsibilities?" or any other question that allows to determine the degree of implementation of the

CO of their powers in practice based on the results of processing expert assessments. To this list can be added assessments of the results of scientific work of the teacher, similar to the indicators of activity of higher education institutions teachers, listed in the License Terms [30] (item 6), determined on an absolute scale and transferred to IFPS.

Thus, the method of processing personograms as a result of assessment the professional activity involves the calculation of either the coefficient of conformity K_c, or a modified coefficient of concordance (MCC) [31]. The latter should be used as a means of rapid analysis, and K_c allows you to present the results of calculations in the form of a petal diagram. Its form can determine some features of the specialist as assessment object, but this issue needs to be discussed separately. Based on the results of the calculations, a ranked list is compiled and submitted to the decision-maker.

Practical application of research results. Consider an example of the application of the competency method of assessment the results of selection and professional activity of a group of beginning teachers of higher education institution (as the closest to the authors of the field), conventionally named as A, B, C and D.

In Fig. 2 shows the estimates of the general properties of the comparison object A, presented by eleven experts, and their average values by experts; the original data is real. Similar data were obtained for other CO.

In Fig. 3 shows the processed results of assessing the upbringing and education competencies of all four comparison objects.

In Fig. 4 shows the visualized components of the personogram of comparison object A in the form of petal diagrams for 25 features of upbringing competency (Fig. 4, a), which reflect the quality of assimilation of moral norms in accordance with the

requirements [32], 18 elements of education competency (knowledge, skills and abilities) general and professional orientation (Fig. 4, b) and 13 competencies of professional activity (Fig. 4, c).

A	1	2	3	...	10	11	Average Value
1	5	4	5		4	4	4.35
2	5	5	4		4	5	4.46
...							
24	4	5	5		4	4	4.52
25	4	5	5		4	4	4.40

Fig. 2. A fragment of the results of expert assessment of the upbringing competency of the comparison object A

Upbringing	A	B	C	D
1	4.35	4.57	4.33	4.48
2	4.46	4.48	4.33	4.48
...				
24	4.52	4.57	4.62	4.62
25	4.40	4.43	4.57	4.29

a

Education	A	B	C	D
1	4.35	4.57	4.33	4.48
2	4.46	4.48	4.33	4.48
...				
24	4.52	4.57	4.62	4.62
25	4.40	4.43	4.57	4.29

б

Fig. 3. A fragment of the processed results of expert assessment of upbringing and education competencies of the comparison objects

Assessments of the components personograms of comparison objects A, B, C and D for the competency method are given in tables 2 and 3 for the coefficients of conformity and the modified concordance coefficient.
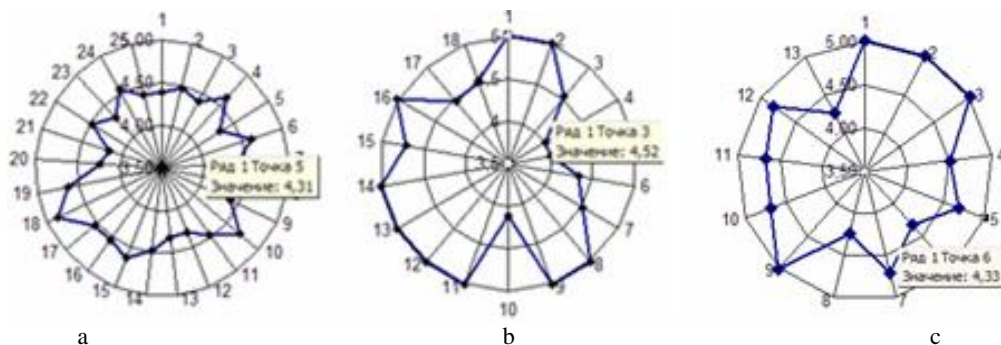

a   b   c

Fig. 4. Components of the personogram of the comparison object A

Table 2 – **The results of calculations of CO indicators for K_c**

Personogram components	Comparison objects			
	A	B	C	D
Education	0.8757	0.8992	0.7963	0.8198
Upbringing	0.7941	0.8109	0.8145	0.8014
Professional activity	0.8020	0.8148	0.8264	0.8118
Generalized compliance indicator	0.8239	0.8416	0.8124	0.8111
Rank	2	1	3	4

Table 3 – **The results of calculations of CO indicators for MCC**

Personogram components	Comparison objects			
	A	B	C	D
Education	0.8913	0.9150	0.8194	0.8439
Upbringing	0.8185	0.8343	0.8379	0.8256
Professional activity	0.8262	0.8386	0.8490	0.8348
Generalized compliance indicator	0.8453	0.8626	0,8354	0.8347
Rank	2	1	3	4

For comparison in tables 4 and 5 show the results of calculations for the arithmetical average values of the comparison objects, as well as the results of processing the median values of assessments by the methodic, which involves the calculating Euclidean distances R_E and ranking by the criterion of increasing these distances [33].

Table 4 – **The results of calculations of CO indicators for average values of assessments**

Personogram components	Comparison objects			
	A	B	C	D
Education	4.69	4.76	4.43	4.50
Upbringing	4.46	4.50	4.51	4.48
Professional activity	4.48	4.52	4.55	4.50
Generalized compliance indicator	4.54	4.59	4.50	4.49
Rank	2	1	3	4

Table 5 – **The results of calculations of CO indicators for median values of assessments**

Personogram components	Comparison objects			
	A	B	C	D
Education	4.86	5.00	4.43	4.52
Upbringing	4.46	4.50	4.55	4.45
Professional activity	4.46	4.43	4.54	4.49
Generalized compliance indicator	4.59	4.64	4.51	4.50
Rank	2	1	3	4
R_E	0.3615	0.0000	0.4217	0.5213
Rank on R_E	2	1	3	4

The generalized indicator of conformity is defined as the arithmetic average values of the components of education, upbringing and professional activity. It can also be calculated using the weight of each of the components determined by the expert method of ranks by the weight method [2].

Comparison of the contents of tables 2 - 5 shows a complete coincidence of ranking results, which indicates the adequacy of the implemented processing method to known ranking methods, as well as the compliance of the concept of stability, according to which "the results of data processing, which are invariant with respect to the processing method, correspond to reality, and the results, which depend on the processing method, reflect the subjectivity of the researcher, not objective relations" [2].

Conclusion on the results of the application of the competency method of assessing the professional activity of a group of beginning teachers of higher education institution: the order of alignment of comparison objects – B, A, C and D.

This conclusion can be used to solve a staffing issues.

Discussion of research results. The advantage of this method is its implementation in accordance with the general scheme of information technology of decision support, a simplified block diagram of which in the notation IDEF0 [34], is shown in Fig. 5.

The area of application of this information technology is determined by filling the knowledge base of the software with information about the properties of the comparison object, and the database – the results of assessing its properties (in the case of solving the tasks of assessing the professional activity of ESE – these are the relevant professiograms and personograms).

In order to ensure the use of proposed information technology to solve personnel issues in higher education institutions, a certain range of authorized persons of the educational and methodical department, personnel department, postgraduate and doctoral departments, as well as heads of departments and leading teachers, independent experts, etc. are involved.

Information technology procedures are performed in any sequence using tools and software. Output is a rating list of CO, which is provided to the decision maker.
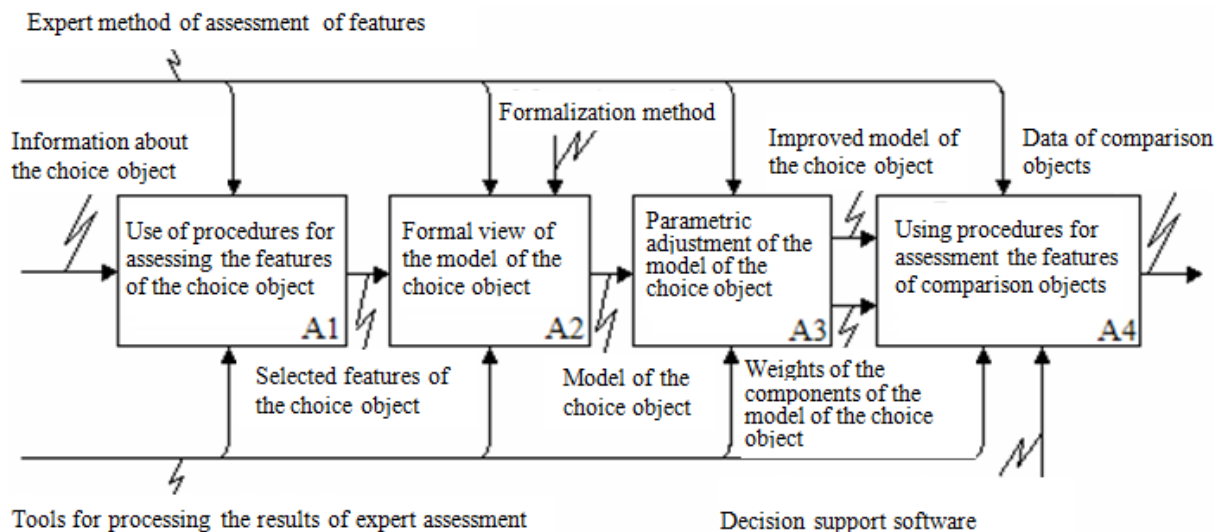
Fig. 5. Information technology to support decision making

Filling the database and knowledge base with data on the properties of the comparison object of any nature can support the decision of the choice task in other areas of human activity, but the software that implements the developed technology is virtually untested in areas other than pedagogical qualimetry, which can be considered a disadvantage of the research.

Conclusions and prospects for further research

The information technology of solving the tasks of assessment the professional activity of an education system employee brought to realization in the form of a software product is offered.

The information technology based on the competency method is allows to solving the following tasks: development of a professiogram - information model of a specialist – teacher, assessment of the results of his professional activity according to the professiogram (obtaining a personogram) and processing the assessed results on a personal computer.

For the first task, the initial data is a list of competencies (required knowledge, skills and abilities) and a list of competencies (range of functional responsibilities and powers); for the second task – the results of assessment (measurement) of the features of

the professiogram on scales of order, intervals, relations and absolute scale, reduced to an improved four-point scale of order. Both tasks are solved by the expert method, and the main requirement for experts is impartiality and competence in a certain field of activity.

Further research should be aimed at solving problems of assessment of cognitive competency (knowledge of methodological, didactic-methodical, subject-professional, organizational-technological techniques and ability to apply them in everyday professional activities), information-communicative competency (knowledge, skills and abilities in the field of information – telecommunication technologies of a certain level of professional activity), competency of self-improvement (certain knowledge, skills and abilities in the field of learning technology – psychophysiology of mental work, organization of self-study, rational reading, etc.).

One of the areas of research can be considered the check of possibility of using the proposed information technology to solve the problem of comprehensive assessment of higher education institutions and its comparison with the known method based on the calculation of the generalized volume of m-simplex [35].

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Інформаційна технологія реалізації компетентнісного методу оцінювання професійної діяльності працівника системи освіти

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Анотація. Послідовне і поступове розповсюдження на Заході поняття "competence" у практиці післядипломного навчання, підвищення кваліфікації та перепідготовки кадрів професійної школи призвело до появи в системі освіти концепції так званого компетентнісного підходу. Спираючись на цю концепцію, Міжнародна асоціація праці вводить поняття "ключові компетенції", що включають предметні й соціальні компоненти, у кваліфікаційні вимоги до спеціалістів. Накопичений досвід втілення компетентнісного підходу в системі освіти показав наявність низки проблем, обумовлених складністю оцінювання процесу і результату професійної діяльності спеціалістів-освітян. Ця проблема викликала потік публікацій, різних за видом, обсягом і змістом, за авторством від маститих і титулованих вчених до вчителів молодших класів середньої школи, кількість посилань на які в Інтернеті налічує мільйони. Наявність безлічі публікацій спонукає до пошуку шляхів вирішення проблеми з застосуванням методів кваліметрії та інформаційних технологій. У статті розглянуто і запропоновано до практичного застосування інформаційну технологію вирішення завдань оцінювання професійної діяльності працівника системи освіти, засновану на компетентнісному підході. Сутність методу: група експертів складає інформаційну модель (професіограму) працівника системи освіти – переліки (тезаурус і абетковий покажчик) оцінюваних ознак – кола повноважень (компетенції), а також знань, умінь та особистісних ознак (компетентності); кожен об'єкт оцінювання експерти порівнюють за кожною із ознак і приписують бал за чотирибальною шкалою порядку, що характеризує ступінь відповідності об'єкта оцінювання конкретній ознаці; отримані сукупності оцінок (персонограми) обробляють відповідним чином; результат оброблення (ранжируваний список) подається особі, що приймає рішення. В якості приклада застосування методу розглянуто процедуру оцінювання професійної діяльності групи викладачів-початківців закладу вищої освіти.

Ключові слова: компетентність; компетенція; експертний метод; інформаційна технологія; прийняття рішень.

Информационная технология реализации компетентностного метода оценивания профессиональной деятельности работника системы образования

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Аннотация. Последовательное и постепенное распространение на Западе понятия "competence" в практике последипломного обучения, повышения квалификации и переподготовки кадров, а также в профессиональной школе привело к появлению в системе образования концепции так называемого компетентностного подхода. Опираясь на эту концепцию, Международная ассоциация труда вводит понятие "ключевые компетенции", включающих предметные и социальные компоненты, в квалификационные требования к специалистам. Эта проблема вызвала поток публикаций, различных по виду, объему и содержанию, под авторством от маститых и титулованных ученых до учителей младших классов средней школы, количество ссылок на которые в Интернете насчитывает миллионы. Наличие множества публикаций побуждает к поиску путей решения проблемы с применением методов квалиметрии и информационной технологии. В статье рассмотрена и предложена к практическому применению информационная технология решения задач оценки профессиональной деятельности работника системы образования, основанная на компетентностном подходе. Сущность метода: группа экспертов составляет информационную модель (профессиограмму) работника системы образования – перечни (тезаурус и алфавитный указатель) оцениваемых признаков – круг полномочий (компетенции), а также знаний, умений и личностных признаков (компетентности); каждый объект оценивания эксперты сравнивают по каждому из признаков и приписывают балл четырехбалльной шкалы порядка, характеризующий степень соответствия объекта оценивания конкретному признаку; полученные совокупности оценок (персонограммы) обрабатывают соответствующим образом; результат обработки (ранжированный список) подается лицу, принимающему решение. В качестве примера применения метода рассмотрена процедура оценивания профессиональной деятельности группы начинающих преподавателей учреждения высшего образования.

Ключевые слова: компетентность; компетенция; экспертный метод; информационная технология; принятие решений.