MODERN INNOVATIVE TECHNOLOGIES AS PART OF THE TRAINING OF FUTURE FINANCIERS

ABSTRACT

The relevance of the study lies in the growing need for innovative approaches to the training of future financiers. The main aim of the article is to define modern innovative technologies that are used in the training of future financiers. The object of research is a system of innovative methods and technologies that should be implemented in the process of training specialists in finance. To achieve this goal, the article uses modern technologies of taxonomic analysis to identify problems in the innovative provision of training of future financiers. The result of this approach is the calculation of two integral indicators for the main groups of innovative training of future financiers. As a result of the taxonomic analysis, it was found that there are problems with innovative potential in educational institutions. The study has a number of limitations, which consist in not taking into account all techniques and methods of applying innovative technologies. Prospects for further research may be an increase in the number and increase in the quality of application of innovative technologies and techniques in the system of training future financiers.

Keywords: finance, financier, education, innovations, innovative technologies, analysis

JEL Classification: A20, I22

INTRODUCTION

The current socio-economic situation in our country requires fundamental changes in all areas of public life, including education. Urgent requirements for modern educational institutions were formulated in the Law of Ukraine "On Education" and specified in the national doctrine of education, where one of the main tasks is the stimulation and introduction of new promising disciplines into the curricula to the introduction of innovative mechanisms and the latest technologies that help prepare highly qualified, competitive
financiers capable of performing complex research, and professional, applied and creative tasks. That is why it is important to find the most effective ways to modernize and improve the quality of modern economic and financial education.

In general, innovations in the training of future financiers should be understood as the study, development and systematic use of the principles of organizing the educational process based on the latest achievements in pedagogy, psychology, theory of management and management, informatics, sociology to develop such teaching aids that increase the effectiveness of the educational process. Innovation in the training of future financiers can be of different levels, it includes participants in the learning process, a system of theories, ideas, means and methods for organizing educational activities that provide all aspects of mastering knowledge and practical skills. The search for didactic tools and teaching approaches that could guarantee high results for any financier continues.

Description of the system of innovations in higher education is the subject of special studies of the training of future financiers. Today, only the most significant moments of innovations that are used in higher education can be singled out to show the complexity and versatility of innovative processes in the education system, both directly and indirectly related to the personality and its human qualities, guaranteeing a personal approach to preparing young people. specialists involved in the constitution of the business world of independent Ukraine training of future financiers. The system of studying innovations in higher education for the training of future financiers should be the subject of a comprehensive analysis of specialists, which will contribute to the effective implementation of educational innovations as a reserve for the social renewal of the education system. Only a highly qualified financier can provide quality services, so it is necessary to adapt it to new technologies in education, it is necessary to use modern educational technologies to improve understanding and assimilation of information. Modern innovations open access to non-traditional sources of information, increase the efficiency of independent work, provide completely new opportunities for creativity, finding and consolidating all the skills acquired in the classroom as part of the training of future financiers. But it is necessary to organically combine an innovative approach and technologies with classical methods of teaching, educational and research processes, fundamental training of specialists with a narrow specialization, such as finance.

If in traditional education attention was focused on memorizing and reproducing information, then in the new conditions it became necessary to develop the student's creative (productive) thinking, the formation of his communication skills and practical preparation for active life in an ever-changing social environment. It is necessary to take into account the peculiarity of the modern system of higher education in Ukraine, where there is a coexistence of traditional and innovative learning technologies with a clear inclination towards traditionalism, which does not fully meet the modern requirements for university graduates. Therefore, the need for a wide introduction of innovations in the educational process is urgent.

Innovative activity in the framework of the training of future financiers is specific and rather complex, requiring special knowledge, skills, and abilities. The introduction of innovations is impossible without a teacher-researcher who has systemic thinking, a developed ability for creativity, and a well-formed and conscious readiness for innovation. Innovative teachers of this type are called teachers of the innovative direction, they are characterized by a clear motivation for innovative activity and a crystallized innovative position, the ability not only to be included in innovative processes but also to be their initiator.

A key task in the future development of the education system is to connect each audience to the Internet. This is the most important prerequisite for the emergence of qualitatively new technologies for the application of a personality-oriented approach for mass institutions that implement the most important social function of transferring knowledge from previous generations. The realization that a person can use previously acquired knowledge not only in research and production activities and everyday life but in the process of obtaining new knowledge, forming their own intellectual infrastructures throughout life and development, allows us to talk about a new stage in the formation of the system as a whole and in particular. At the same time, in terms of academic disciplines, which to a large extent have a pronounced descriptive character, the manifestation of new trends, firstly, will affect the formation of knowledge and skills to find, collect, systematize, generalize facts on the essence of the educational task, and in such a subject as economics, that operates with abstract ideas about the world around us, we have the opportunity to get a new effective methodological system for mastering this subject not only by people prone to abstractions but also by others who need economics as a serious tool in subject research.

LITERATURE REVIEW

As noted by Shtangret et.al., (2021); Sylikin et.al. (2021); Krystanovych et.al. (2020) therefore, today the role of the education system in the development of society is growing many times. At the turn of a new civilization, it is education
that should be considered as a strategic factor in solving the problems of the intellectualization of society, and its development, accordingly, should be ahead of other factors. In this regard, the problem of integrating science and education acquires a new meaning and objectively comes to the fore. In modern conditions, the creation of an innovative model of education in the country needs to be reoriented and significant efforts must be made in many areas: changing the content and organization of the educational process (focusing on the problem- and practice-oriented learning, focusing on developing the skills and abilities of students to independently obtain the necessary knowledge), development of innovative forms of integration of science and education, increasing the efficiency of scientific research in higher educational institutions, improving the human resources potential of higher education, strengthening the educational and material base of universities, etc. Innovative education includes not only the formation of fundamental knowledge but also the ability to analyze and solve problems using a problem-oriented and interdisciplinary approach.

As noted by Sylkin et al. (2021); Kryshantanovych et al. (2022); Helesh et al. (2021) a problem-oriented approach to learning allows students to focus not only on the analysis and solution of any specific problem situation in the present but also on predicting such situations in the future. An interdisciplinary approach to teaching makes it possible to teach students to independently “extract” knowledge from different industries, and group them in such a way as to solve a specific practical problem. The modernization of the education system and the introduction of information and communication technologies in the learning process raise questions about the quality of education in new way.

As noted by Cahapay, et al. (2021); Al Azzam, (2019); Saleh, et al. (2020) innovative technologies in the financial knowledge quality management system are a unity of goals and content based on the use of modern training programs, effective teaching, means and methods to achieve the goals. Quality management technologies are focused on the quality of the educational process. The specified management object is complex and includes such elements as the quality of educational programs; the quality of teaching (personnel and scientific potential, the quality of knowledge of financial students (at the input-output), as well as the quality of the means of the educational process.

As noted in the literature (Shakhatreh, 2023); Zapozhchenko et al., 2022; Nerubaska, et al., 2020)), education reflects the socioeconomic and cultural-historical state of the country. The system of values and norms of the educational and pedagogical process has a cultural and historical character. Therefore, methodologically, there are no super historical forever set standards, norms and ideals of the educational process. At the present stage of development of higher education, the choice of our state is European integration, joining the Bologna process, European norms and standards. This requires research into the methodology of continuing professional education as a multidimensional interdisciplinary problem.

It is noted in the literature (Muzyka, et al., 2023); Palamarchuk, et al., 2020; Müller et al., 2021; Helfand, et al., 2016) that the training of qualified and competitive financial specialists is one of the main tasks of today in the modern education system in Ukraine, which requires a deep scientific analysis of ways to update the content of education; restructuring of education and development of innovative technologies in the preparation of students of educational institutions; improvement of professional knowledge and skills of future professionals in the field of finance.

As noted by Zlatić, et al. (2014); Navickiené, et al. (2019); Kuznyetsova et al. (2022); Petrovna (2016) often presents that one of the ways to improve the quality of assimilation of the theoretical and practical foundations of the discipline is the use of innovative technologies, the didactic capabilities of which are: strengthening learning motivation; activation of students; individualization of the learning process; expanding the boundaries of independent activity of financial students; a variety of forms of presentation of information and types of learning tasks; creation of a learning environment that would ensure the “immersion” of students in social and industrial situations.

A necessary condition for the formation of a competitive specialist is his high-quality professional training. Modern realities require the training of specialists who can quickly respond to changes, which is especially important in the era of digitalization. Challenges require the transformation of higher education and the introduction of innovative learning technologies in the educational process (Kryshantanovych et al., 2021; Sylkin et al. 2020).

**AIMS AND OBJECTIVES**

The main purpose of the article is to identify modern innovative technologies in the preparation of future financiers. The object of the study is the system of innovations in the framework of the training of future financiers. To achieve this goal, it is necessary to complete the scientific task in detail by modelling the introduction of innovative technologies as part of the training of future financiers.
METHODS

The basis of the methodology is the method of taxonomic analysis. A complete assessment of the trends describing the processes in these interrelated components can only be given by a comprehensive analysis of a set of indicators, which are most often not comparable due to different units of measurement. This can be done using taxonomic analysis as a way of streamlining a multidimensional system of indicators, reducing them to a single taxonomic indicator, and determining the contribution of each of the components of the phenomenon under study to the general nature of its changes. In addition, a number of theoretical methods were applied: synthesis and analysis; abstract-logical for generating conclusions and graphics for displaying the results.

RESULTS

The current stage of the formation of research in the field of training future financiers using modern computer technologies is characterized by the process of knowledge globalization, provided by the expansion of the Internet environment itself on the one hand, and, on the other hand, by the rapidly growing volume of content that is presented in it. This is happening against the background of a gradual transition to the concept of a subject-subject approach, which clearly contributes to the implementation of a student-centred direction of education. This situation made it possible to significantly expand the capabilities of both previously created software tools and newly developed software tools. At the same time, the expansion process is not linear, but of a completely new nature due to not the usual merging of software components, but their integration. We get systems that allow, on the one hand, to fully implement the traditional didactic process, and on the other hand, to give it qualitatively new features. Financial students are able to use the prior knowledge they have learned and the results of their applications to turn it into a ready-made macro tool for solving new higher-level problems. This is a key element of the proposed concept of a component-oriented approach in the assimilation of new knowledge. Thus, a harmonious unity of goals, content, forms and technological tools of the methodological system is achieved. For the first time, a qualitative change in the assimilation of educational material is achieved not due to the "manual skill" of the teacher, but through the instrumental support of intellectual activity received by the financial student. This technological support allows building for each student his own methodological model of the educational process. Already today, the necessary conditions for the implementation of student-centred education have appeared, each student has the opportunity to maximize his pace of mastering the educational material by placing the software environment on the university server, to ensure preliminary preparation, consolidation and independent work within the framework of the educational task.

To innovative technologies, modern scientists include such methods, techniques and forms of organizing the educational process as pieces of training, master classes, project method, media technologies, problem groups, creative workshops, rooms of advanced pedagogical experience, centres, magazines, galleries, scientific circle “Actual problems innovative technologies of primary education”, conferences, seminars, round tables, Olympiads in finance and methods of primary education, festivals of financial excellence. Among classroom activities, in our opinion, lectures and seminars with elements of problem-based learning are productive: discussions, heuristic conversations with the promotion of research hypotheses, brainstorming, and collective discussion. They form the following creative professional skills in the future financier: to independently see and highlight the pedagogical problem; put forward a hypothesis and find ways to test it and a solution technique; to see possible ways of the practical application of the results. Problem-based learning arouses the internal interest of the student, which becomes an effective factor in activating the educational process and the effectiveness of learning.

We single out the main stages of increasing the efficiency of innovative technologies in the system of training future financiers:

1. Understanding the new conjuncture and place of higher education. Modern higher education is indeed faced with the difficult task of new content and new dynamics of socio-professional roles, on the basis of which it must prepare students. Clearly, the aims, theory and practice of higher education need to be reconsidered. To comprehend the new conjuncture and the place of higher education in it, new conceptual resources are needed. Most universities are not ready to respond to these challenges of the time, which put the future specialist in front of the need to work in more than one professional position, which, moreover, is characterized by uniqueness, originality and originality in the framework of the training of future financiers.
2. Restoring the network of research institutions in the public sector. The key problem in this regard is the restoration of the network of research institutions in the public sector, their development in corporate structures, and venture business, given the limitations of their profitable activities and the priorities of high profitability of long-term technology projects and in order to harmonize economic interests and support modernization models by a wide range. An important role in the development of the knowledge generation system should be given to state and non-state institutions. In modern conditions, the state should contribute to the coordinated work of three important components of the “knowledge society”: science - education - business. Such work can be organized through the creation of clusters, technoparks, joint competitive commissions for the search and selection of priority areas of scientific and technological development, and specialized funds with equity participation of the state and business as part of the training of future financiers.

In order to calculate the final taxonomic indicator, a system of 8 indicators was formed, which characterize the trends of innovative technology in the system of training future financiers in the section of its two components (4 indicators within each). A taxonomic indicator is a generalized indicator calculated for each of certain groups of indicators. The methodology of taxonomic analysis also requires the distribution of indicators into factors, the increase of which has a positive effect on the development of the object under study:

1. Group of indicators of innovative potential:
   - number of young generations in educational institutions (W1);
   - the number of professionals with real practice working in finance in educational institutions (W2);
   - level of scientific infrastructure (W3);
   - the number of applied modern technologies in educational institutions (W4).

2. A group of indicators of innovative activity in the framework of training future financiers:
   - the existence of a motivation system in educational institutions (W5);
   - index of innovative ideas (W6);
   - the level of organization of innovative activity (W7);
   - number of research works (W8).

Based on the above indicators, we created a matrix of observations for conducting a taxonomic analysis of innovative development in the framework of the training of future financiers (Table 1).

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1, number of units</td>
<td>187</td>
<td>189</td>
<td>192</td>
</tr>
<tr>
<td>W2, number of units</td>
<td>1112.8</td>
<td>1095.5</td>
<td>1132.8</td>
</tr>
<tr>
<td>W3, became a unit of measure from 1-100</td>
<td>24.5</td>
<td>24.9</td>
<td>24.1</td>
</tr>
<tr>
<td>W4, number of units</td>
<td>857</td>
<td>1191</td>
<td>1234</td>
</tr>
<tr>
<td>W5, became a unit of measure from 1-1000</td>
<td>376.7</td>
<td>441.3</td>
<td>455.8</td>
</tr>
<tr>
<td>W6, became a unit of measure from 1-100</td>
<td>10.5</td>
<td>49.4</td>
<td>42.3</td>
</tr>
<tr>
<td>W7, became a unit of measure from 1-100</td>
<td>36.6</td>
<td>36.2</td>
<td>37.3</td>
</tr>
<tr>
<td>W8, number of units</td>
<td>309382</td>
<td>311055</td>
<td>311983</td>
</tr>
</tbody>
</table>

Each indicator has its own unit of measurement. For example, for W8 this is a certain amount, while for W6 this value is also level units. Of all the listed indicators, there are no % units of measurement. It should be noted that W3 is presented in a negative value due to a very low value. The indicators, the values of which are given in the table, have different units of measurement, which makes it difficult to interpret their cumulative impact on the innovative development of the training of future financiers, so the next step in the taxonomic analysis is the formation of a matrix of standardized indicators. As part of the taxonomic analysis, the corresponding landmarks were calculated (Table 2).
The notation in the form of W serves only as a mathematical simplification of the notation for the list of certain factors. Only two groups were selected as part of our study in the missing data bank. The next step is to expand this aspect.

Innovative activity” is the highest degree of creativity, the results of which are: the discovery of innovative solutions; invention; improvement - modernization and adaptation to specific conditions of already known methods, means, forms, technologies in the framework of the training of future financiers. Further, based on the data obtained, an integral indicator for each of the groups is calculated there. Such calculations make it possible to determine not only the general trend in the development of the phenomenon under study but also to identify the causes and sources of changes. Changes in the values of partial integral indicators calculated using a similar method for two components of innovative development in the framework of the training of future financiers are shown in Figure 1.

The integral indicator can vary from 1 to 0. And the closer it is to 1, the better the selected group. That is, as a result of our study, we found that in Ukraine there is sufficient innovative activity in the framework of the training of future financiers, but there are problems with the further development of new innovative potential. The innovative potential of a teacher is determined by the creative ability to generate new ideas, a high cultural and aesthetic level, the openness of the teacher's personality to the new, understanding and perception of new ideas, thoughts, directions, and trends.

In the conditions of modern educational paradigms, the requirements for the professional training of the future financier, his professional activity, and his creative potential are significantly changing. In this context, financial education should turn into a developing environment in which future financiers acquire the necessary professional competencies, form the ability to independently acquire new knowledge during their future professional activities and independently develop the necessary business skills. Therefore, it is natural to shift the emphasis on the professional training of future financiers from the tasks of forming professional knowledge, skills and abilities to the tasks of forming their professional competencies, including the ability for self-education, self-improvement, and self-development. An effective means of accomplishing this task are innovative technologies, the introduction of which ensures the proper cultural and personal development of the future financier, forms his readiness to perform professional duties and finds ways to improve the educational process in institutions of general secondary education in Ukraine.
DISCUSSION

Discussing the issues raised, it should be noted that the universality of financial education is due to the specifics of university education in general and involves the development of students’ professional competencies as universal methods of action for searching and processing the information presented in the disciplines of social and humanitarian, anthropological and subject blocks of content.

Comparing the results obtained by us (Shtangret et.al., (2021); Sylkin et.al., (2021)), it should be noted that their significance is measured by how we achieved the result in comparison of two groups of indicators of innovative development of the training of future financiers. Discussing the obtained results, we want to draw attention to the fact that most scientific studies simply provide a list of certain factors influencing innovative research in the preparation of future financiers (Zapozhchenko et.al., (2022); Nerubasska, et.al., (2020); Muzyka, et.al., (2023); Palamarchuk, et.al., (2020)). In our case, we had the opportunity not only to submit such a list but also to properly calculate it.

Discussing the results obtained by us, it should be noted their innovativeness. The innovativeness of the results obtained lies in the presented methodological approach to the integration of modern innovative technologies in the system of training future financiers.

An assessment of trends using taxonomic analysis tools made it possible to present the result that, as a result of recent changes in the educational and political spheres, the positive dynamics that were inherent in the general integral indicator of innovative development in the training of future financiers are beginning to level out. In general, discussing the results obtained, we can highlight the following: 1) the training of future financiers takes place within the framework of the innovative activities of Ukrainian educational institutions; 2) the proposed methodological approach allows you to build an integral indicator in a grouped manner.

CONCLUSIONS

The results of the research are a definite contribution to the development of teaching methods and open up new perspectives in further searches for this direction. The problem of creating special access points to the information network of the university in the places of residence, the recreation of students, in classrooms, as well as providing personalized access to educational resources for students and teachers of practitioners, is in need of further solution; development of a flexible system of individual trajectories for the organization of students’ cognitive activity with an effective feedback system; substantiation of distance learning forms of multi-level training modules due to the openness of computer environments.

An analysis of the synthesized influence of 8 factors, grouped into separate two components, showed that the potential for innovative development of the training of future financiers was realized by half. It has been established that the limiting factors in innovative activity are the organization of innovative and scientific work and the system of employee motivation. As for the innovative potential, it is important "young blood" and the new generation for whom Industry 5.0 is an assessment of the degree of balance between the two components that determine the innovative development of the training of future financiers, revealed the insufficient development of innovative potential that hinders the development of human capital - the most important factor in education in any sphere.

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СУЧАСНІ ІННОВАЦІЙНІ ТЕХНОЛОГІЇ В РАМКАХ ПІДГОТОВКИ МАЙБУТНІХ ФІНАНСИСТІВ

Актуальність дослідження полягає в зростанні потреби в інноваційних підходах до підготовки майбутніх фінансистів. Основною метою дослідження є визначення сучасних інноваційних технологій, які застосовуються при підготовці майбутніх фінансистів. Об’єктом дослідження є система інноваційних методів і технологій, які варто впроваджувати в процесі підготовки фахівців із фінансів. Для досягнення поставленої мети в статті з використанням сучасних технологій таксономічного аналізу визначено проблеми в інноваційному забезпеченні підготовки майбутніх фінансистів. Результатом застосованого підходу є розрахунок двох інтегральних показників за основними групами інноваційної підготовки майбутніх фінансистів. У результаті проведеного таксономічного аналізу встановлено, що в закладах освіти існують проблеми з інноваційним потенціалом. Дослідження має низку обмежень, які полягають у неврахуванні всіх прийомів і методів застосування інноваційних технологій. Перспективами подальших досліджень можуть стати збільшення кількості та зростання якості застосування інноваційних технологій і методик у системі підготовки майбутніх фінансистів.

Ключові слова: фінанси, фінансист, освіта, інновації, інноваційні технології, аналіз

JEL Класифікація: A20, I22