

Technology for forming students' ability to manage independent educational activities

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Abstract

The modernization of the education system, taking place in Kazakhstan today, is connected with the renewal of its goals. The State program for the development of education of the Republic of Kazakhstan 2020-2025, as one of the conditions for improving the quality of secondary (full) general education, identifies the experience of independent activity of pupils, the formation of the pupil's competences in various aspects of life and in an independent educational activity. The research aimed to develop the model of technology for forming students' readiness to manage their independent educational activity of students and to ensure its implementation by the author's methodology. The starting point of the research was the analysis of the effectiveness of the existing teacher training in the management of the independent educational activities of students at the pedagogical university. The analysis was carried out on the base of the Abai Kazakh National Pedagogical University and International University "Silkway". It was revealed that the training of future teachers in the management of the independent educational activities of pupils at the pedagogical university did not meet the new social requirements of the developing system of general education.

Keywords: Educational activities; Future teacher; model, technology.

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1. Introduction

The modernization of the education system, taking place in Kazakhstan today, is connected with the renewal of its goals (Abylkassymova, 2020). New targets in the system of secondary (full) general education prioritize the development of pupils' independence and ability to self-organization, including in educational activities. The State program for the development of education of the Republic of Kazakhstan 2020-2025, as one of the conditions for improving the quality of secondary (full) general education, identifies the experience of independent activity of pupils, the formation of the pupil's competences in various aspects of life and in independent educational activity. Such target setting is based on the recognition of the following principles: the pupil acquires knowledge only in the process of personal independent educational activity; independent educational activity allows to include schoolchildren in the process of creative and conscious digestion of knowledge, skills, and abilities, contributes to intellectual development; the State standard for general secondary education suggests the sufficiently high degree of formation at pupils of the skills to perform independent educational activities; the modern stage of Kazakhstan's economic development, growth of competition, reduction of unskilled labor, changes in employment sphere determine the demand for specialists who are ready for self-education in the field of their professional activity.

Taking into account the role of independent educational activities of students in improving the quality of general education, as well as new attitudes in training within the framework of the emerging new Kazakh educational policy and the objective difficulties of organization of independent educational activities of students, the teacher training in the aspect of this activity should be identified as the separate problem not only in practice but also in theoretical terms (Yeshenkulova et al., 2020).

The scientific-pedagogical literature was accumulated the sufficient material, which is testified about the need for improvement of the future teacher training to the organization of independent educational activities in the conditions of the university, but universities and pedagogical universities, in practice, are far from fully using their potential (Zhamardiy et al., 2020). Many researchers were involved in the study of various aspects of the organization of independent educational activity of pupils and students, and the development of some components of the training process of the future teacher to the organization of independent educational activity of pupils in a pedagogical higher education institution. However, to date, only certain components of student readiness for the organization of independent educational activity of pupils were studied.

1.1. Purpose of study

The research relevance is because the forming readiness of future teachers to the management of independent educational activity of students in terms of identification of scientific-theoretical as well as the development of the model and pedagogical conditions were not been the object of attention from the side of researchers and organizers of higher vocational education. The lack of the development and practical significance of the identified problem in the theory and methodology of vocational education determined our topic of the research. The research aimed to develop the model of technology for forming students' readiness to manage their independent educational activity of students and to ensure its implementation by the author's methodology.

2. Materials and Methods

2.1. Data collection

The analysis of psychological-pedagogical and scientific literature on the studied problem; the analysis and systematization of skills, included in the structure of readiness of the future teacher to manage the independent educational activity of pupils, the analysis and synthesis of pedagogical experience on the research problem, modeling, questionnaire, observation, system analysis, method of expert assessments, method of selection; the pedagogical experiment and mathematical processing of its results.

2.2. Participants

Abai Kazakh National Pedagogical University and International University "Silkway". 136 students participated in the experiment. It should be noted that 68 were in the control group and 68 were in the experimental group.

2.3. Procedure

The problem research was carried out in three stages: at the first stage, it was carried out the theoretical analysis of existing methodological approaches in philosophical, psychological and pedagogical scientific literature, dissertation works on the problem, as well as theory and methodology of pedagogical researches; the problem, purpose and methods of research were identified, and it was drawn up the experimental research plan; at the second stage, the methodology of forming the future teacher readiness to the management of independent educational activity of pupils was developed, and also the experimental work was carried out; at the third stage, the experimental work was completed, theoretical and practical conclusions were clarified, the received results were summarized and systematized.

3. Results

Especially important, in the conditions of modernization of Kazakh education, is the formation of the student's ability to study independently. It is necessary to understand under independent educational activity of pupils such form of educational activity organization in which pupils perform work on the task of the teacher but without his direct participation.

The carried out theoretical analysis showed that the types of independent educational activities of students should include work with the book (retelling, drawing up the plan, writing of abstracts, theses, systematization, and keeping of information), the performance of exercises on discipline, work with technical training aids, testing, independent and control works, work with the personal computer (PC), work on the report, work on the project. It was suggested the test methodology for assessing the level of training of school graduates in the organization of independent educational activities, as well as the results of the conducted experiment at the search stage of the research were presented.

The specialist's compliance with the requirements of this or that profession in scientific-pedagogical literature is defined through the concept of professional readiness, which characterizes the preparedness for the concrete type of activity (Nazira et al., 2021). The readiness is the state that everything was done. The student readiness to manage independent educational activity of students is represented by the integrative personality quality, characterized by the deep knowledge of the methodology of the organization of independent educational activity of pupils, which are allowed to solve successfully the educational-methodological tasks, related to the organization of independent educational activity of pupils.

We understand the process and result of forming the future teachers' readiness to manage the independent educational activity of students as the future teachers training to manage the

independent educational activity of students (Karasheva et al., 2021). The structure of this type of readiness was determined based on analysis of the activity theory, competency-based approach, qualification characteristic of the graduate, presented in the State educational standard of higher vocational education, professional activity of the teacher, results of search stage of our study. The technology of the student's readiness to manage the independent learning activities of students is a unity of theoretical thinking and competence of the future teacher in the field of managing the independent learning activities of students.

The competence structure includes motivational, orientational, and operational blocks. Theoretical thinking in the field of management of independent educational activity of pupils characterizes the ability of the future teacher to solve tasks in this field, including the ability to carry out meaningful analysis of activities, to plan and design activities, to make the mental reflection of activities on the organization of independent educational activity of pupils.

The motivational block characterizes the directedness of the student's personality in the management of this type of activity for pupils. The orientational block causes the presence and students of holistic ideas about types of independent educational activity, ways of its performance, pedagogical basics of its organization. This component represents the knowledge and abilities of the student on the management of different types of own independent educational activity, knowledge and methodological and psychological-pedagogical bases on the organization of various types of these activities.

The operational block characterizes the student's ability to manage the pupils' independent activities. It is represented by the following skills: to formulate the purpose of independent educational activity of pupils; to submit the task for this activity; to develop and provide instruction to the independent educational activity of pupils; to select the differentiated and personal-oriented exercises and tasks; to stimulate interest and initiative of the pupils; to motivate the pupils to independent educational activity; to carry out the current control of independent educational activity of pupils; to induce pupils to self-checking; to organize checking work of pupils by different ways; to analyze and estimate the independent educational activity of pupils.

The student readiness to the management of independent educational activity of the technology of the student's readiness to manage the independent learning activities of students is a unity of theoretical thinking and indicators, levels, and criteria for evaluation of levels characterize competence of the future teacher in the field of managing the independent learning activities of students. It is possible to allocate three levels of readiness of future teachers to the management of independent educational activity of The technology of the student's readiness to manage the independent learning activities of students is a unity of theoretical thinking and competence of the future teacher in the field of managing the independent learning activities of students.: high, average, low.

The technology of students' readiness for pedagogical activity is a set of psychological and pedagogical attitudes that determine a special set and layout of forms, methods, methods, teaching techniques, educational tools (Kirillova et al., 2017); it is an organizational and methodological tool of the pedagogical process. The object of the technology of form the readiness of future teachers to the management of independent work of students undergoes understand the structure and logic of the design of the pedagogical process, the ways his organization's goals by certain principles and conditions.

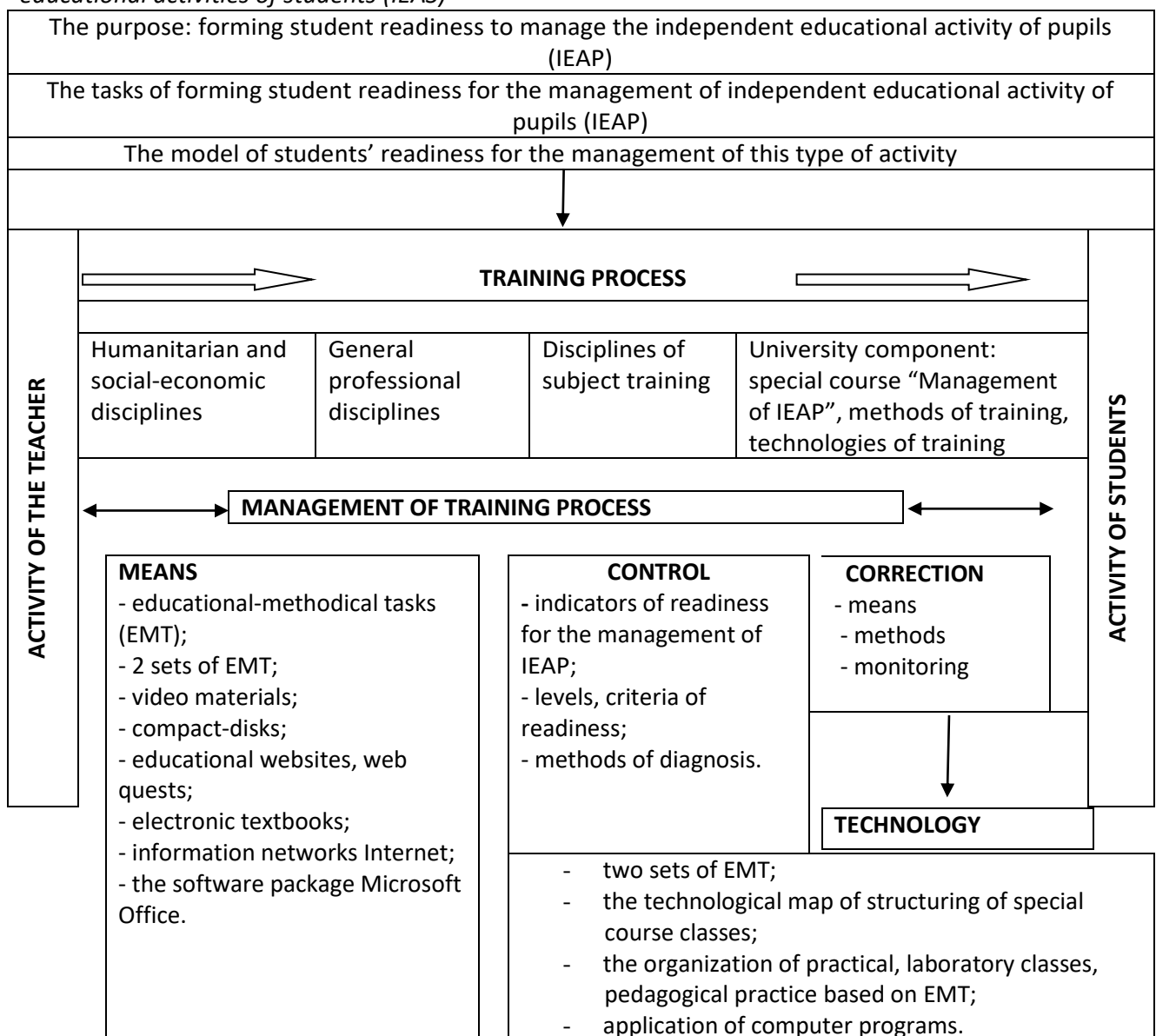
In this regard, we have developed a model that allows us to prepare the student to manage the independent learning activities of students to solve the set pedagogical tasks, as well as to

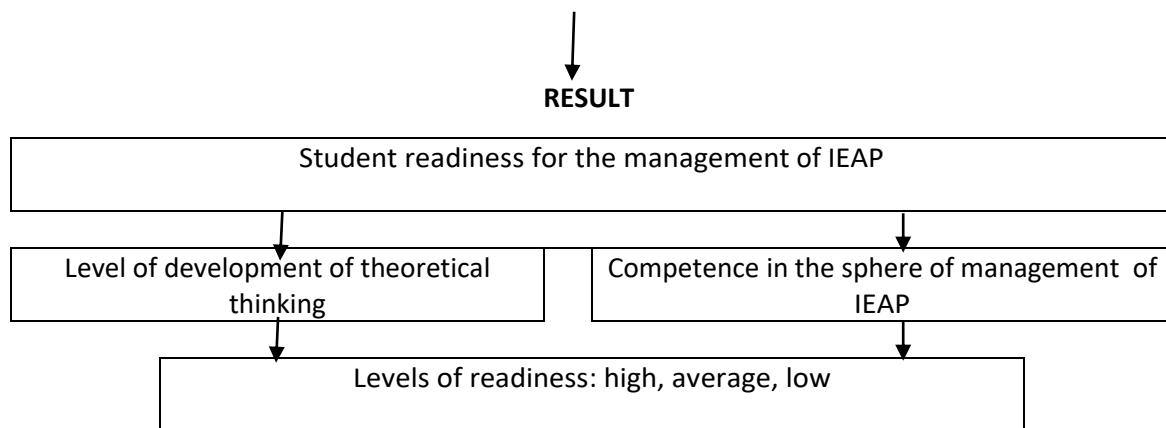
increase the level of readiness of students to perform independent learning activities (Fig.1). The proposed technology model has the following structural components: the goal, the learning process, and the result.

The purpose of the proposed model technology is to form the readiness of students to manage independent learning activities of students. The training process includes the following blocks: the content of the training process and management of the training process. The content of the educational process is implemented through the humanities and socio-economic disciplines (philosophy, sociology, cultural studies), general professional disciplines (psychology, pedagogy, theory and methodology of teaching subjects, age-related anatomy, physiology, and hygiene), subject training disciplines, the university component (special course "Management of independent learning activities of students", methods, forms, means of teaching).

Figure 1

Model of technology formation of students' readiness for management of independent educational activities of students (IEAS)





The theory of the stage-by-stage formation of mental actions is the basis for the training process. Management of the training process includes means, technologies, control, and correction of this process. Management at the realization of the model of forming readiness conscious in the organization of diagnostics of initial and final levels of readiness, the realization of the model of forming readiness, the analysis of the effectiveness of forming student readiness to the organization of independent educational activity of pupils. Means of formation of components of future teacher readiness to management by this type of activity of pupils are educational-methodical tasks, two complexes of educational-methodical tasks, video materials, compact disks, educational websites and web quests, electronic textbooks, the information networks Internet, some software packages of Microsoft Office (Access, Internet Explorer, Excel, Outlook Express, PowerPoint, Word).

The set of technologies was determined for application of the specified means: the two sets of educational and methodological tasks, the technological map of structuring of special course classes, organization of practical, laboratory classes, pedagogical practice based on educational-methodological tasks, and application of computer programs. Control of the results of the training process assumes the determination of the level of readiness according to the criteria, which were marked out early signs of the diagnosing methods (methodology of assessment and self-assessment of the level of future teacher readiness to the organization of independent educational activities of students).

The correction of the training process of students is made on the basis of the analysis of monitoring results, the used means, and technologies. The training process, organized based on the suggested means and technologies, is carried out through the interaction of the teacher with students. The result of the functioning of this model is the future teacher's readiness management of independent educational activity of pupils. If we consider the process of forming student readiness to the management of independent educational activity of pupils as the sequence of stages, then at the first stage, the future teachers master different types of independent educational activity, at the second stage, there is the formation of components of the model of the student readiness to the management of this type of activity.

Characteristics of the model of formation of readiness are unity of goals, tasks, means, technologies, readiness results, criteria and readiness levels; the concreteness of tasks of each block according to the model of formation of readiness; the complexity of use of the process, competence-based, system approaches and theory of the stage-by-stage formation of mental actions; the ensuring purposeful functioning of all structural components of the model of formation of readiness; the ensuring readiness of pedagogical staff for implementation of the

educational activity, focused on forming the future teacher readiness to the management of independent educational activity of pupils.

The success of the functioning of this model depends on the existence of certain **pedagogical conditions**. We identified conditions of stage-by-stage formation of readiness in the course of development of the main educational program in the specialty, including the special course "Management of independent educational activity of pupils"; the continuous formation of readiness in the process of studying of disciplines of various blocks of the State educational standard of higher vocational education in pedagogical specialties; the methodical, material support of training of future teachers to the organization of independent educational activity of pupils; existence of computer means and software; methodological support of monitoring for the formation of components of the teacher readiness to the management of independent educational activity of pupils.

The special course "Management of independent educational activity of pupils" was suggested as one of the means of student training. There is also suggested the technological map of structuring of the system of special course classes; the forms, methods, and techniques of training, which are corresponded to each part of the special course, were given; the thematic planning, program content of lectures, and seminar classes were given; the complex of educational-methodological tasks was developed; the approximate version of control work was developed.

The structuring of educational-methodological tasks was carried out on the professional skills of the teacher, which are characteristic of this type of activity, and are part of the teacher readiness model. The educational-methodological tasks were classified according to the model blocks of readiness. 2 complexes of educational- methodological tasks for future teachers were presented by us. The first complex of tasks contains the exercises aimed at the formation of competence in the field of organization of independent educational activity of pupils. The second complex contains the tasks aimed at the formation of skills to carry out meaningful analysis, planning, and projecting of activity on the organization of various types of independent educational activity of pupils. This complex includes tasks of the following type: to formulate the purpose, tasks of activity of students, to highlight the motives of activity; to select actions to solve the set tasks; to highlight operations that will be performed by students; to formulate the task; to think through introductory and current briefings, ways of carrying out operational control, the way of checking the work of pupils; to carry out the mental reflection of own activity. Let's give the example of the task, focused on formation at future teachers of elementary school abilities to plan and project the independent educational activity of students.

Task 1. You should plan the number of lessons, provided by the curriculum, on the theme "The areas of figures" (for the 4th class). Then, you have to think about each lesson so that it has to be contained at least one type of independent educational activity for students. Think over additional home works for the pupils, showing keen interest in mathematics. Choose any 4 lessons, containing different types of independent educational activities for pupils. Make their abstracts. Pay special attention to the independent educational activity of pupils. Describe it according to the following scheme: the purpose and tasks of activity of pupils; the motives of activity of pupils; the actions for the solution of the set tasks; the list of operations which will be carried out by students; the formulation of the task for pupils; introduction and current briefings; the ways of implementation of operating control; the way of work checking of students.

Management of independent educational activity of pupils in the modern educational

situation is impossible without the use of computer technologies. We consider the possibilities of use of computer means of training in the organization of independent educational activity of pupils; the possibilities of use of some computer programs were analyzed. Based on computer programs of the *Microsoft Office* package, it was made the complex the educational-methodological tasks aimed at the developing students of abilities in the use of computer technologies in the organization of independent educational activity of pupils. Let's give the example of the educational-methodological task from the specified complex, which contributes to the development of the ability of the future teacher to plan and project the independent educational activity of students with the use of educational websites.

Task 2. Find educational websites on mathematics (3-4 websites) on the information networks Internet. Analyze the content of each website, and highlight the structural components. In studying what theme can be used on this website, what knowledge and abilities can pupils develop during the work with this website? Formulate the task for independent performance by pupils with the use of this website; think over the way of reporting, briefing to performance.

The efficiency of functioning of the model of forming student readiness to the management of independent educational activity of pupils was confirmed by a pedagogical experiment. The forming experiment assumed the organization of educational-professional activity of future teachers based on the model of forming student readiness to the management of independent educational activity of pupils. The training was carried out by traditional methods in the control groups. Based on the methodology of assessment and self-assessment of the level of future teacher readiness for the management of this type of activity, analysis of products of activity, observation, it was concluded that the readiness of students of the experimental group (according to the components of the model of readiness) is higher than in the control group (table 1).

Table 1
The change of level of student readiness to the management of independent educational activity of pupils -%

Level of readiness	Control group			Experimental group		
	At the beginning of the experiment	At the end of the experiment	Dynamics	At the beginning of the experiment	At the end of the experiment	Dynamics
low	45,5%	44,0%	-1,5%	45,5%	20,0%	-25,5%
average	46,5%	49,5%	+3,0%	45,5%	65,0%	+19,5%
high	8,0%	6,5%	-1,5%	9,0%	15,0%	+6,0%

4. Discussion

Martinets, (2017), Karaseva & Latunova, (2017) , Janzakova et al. (2019) Schukina(1995), Zharova (1999), etc. were engaged in problems of the organization and management of independent educational activity of pupils, training in techniques of independent work of schoolchildren. Various

aspects of development at the teacher of theoretical thinking at the solution of professional tasks were developed Zair-Bek & Mushtavinskaya (2004), etc. The issues of training future teachers to use models of developmental learning are reflected in the works of Budaeva (2003), Repkin (2003), Mussabekova et al. (2018), and others. Together with it, the dissertation researches of Drobyshevsky (2013), Uvarovskaya (2009), Abdigapbarova et al., (2019), etc. were devoted to the various aspects of the studied problem.

For the last 3 years in Kazakhstan, there were executed doctoral dissertations about the organization of independent work of students based on a competency-based approach (Ualiyeva, Murzalinova & Kucher, 2016) , as well as about forming future teacher readiness for professional independent education (Boranbayeva, 2018). But the model of student readiness for the management of independent educational activity of students and the corresponding model of training were not determined; there is no methodological provision of this training, which, on the one hand, determines the relevance of the research problem, and on the other - reveals *the next contradictions*:

- between the requirements of the modern educational and social-cultural situation based on the realization of the concept of modernization of education and the practice of the teacher training to management of the independent educational activity of students at the university;
- between requirements, imposed on the level of teacher readiness to the management of independent educational activity of pupils and the real condition of this readiness;
- between the need for pedagogical science for the theory and the methodology of professional education, concerning the teacher training to management of independent educational activity of pupils and insufficient readiness on several specific questions of the methodology of this training.

The existence of the revealed contradictions and the need for their permission determines **the scientific task**, consisting in insufficient readiness of theoretical basics of forming student readiness to manage the independent educational activity of students, in connection with requirements of society, modern economy, and the State educational standards, in the need of the development of model and methodology of management by the future teachers of this type of activity of students.

5. Conclusion

It is established that the process of forming the future teacher readiness to manage of independent educational activity of students will be effective, **if**:

- the content of the concepts "readiness", "readiness of the teacher to manage the independent educational activity of students" was defined;
- substantiated the structure and model of the technology of the future teacher's readiness to manage the independent learning activities of students;
- a model of the technology of preparing a future teacher for the management of independent educational activities of students has been developed and introduced into the educational process of higher education, and pedagogical conditions for the functioning of this model have been provided.

The conducted research contributes to the permission of contradiction between the need of forming student readiness to management of independent educational activity of pupils and the lack of purposeful training for the implementation of this type of activity. The future teacher's readiness to manage of independent educational activity of pupils is the integrative quality of personality, which is the synthesis of competence and level of theoretical thinking in this field of activity. The structure of student readiness for the management of independent educational activity of pupils serves as the basis for selecting the content of the future teacher training for management of this type of activity.

The use of the technology model for the formation of readiness, included in the educational

process of the university in the presence of certain pedagogical conditions, allows us to solve the problem of preparing students for the management of independent educational activities of students. The developed and applied means (the complexes of educational-methodical tasks, video materials, compact disks, educational websites and web quests, electronic textbooks, the information networks Internet, some software packages of Microsoft Office) and technologies (the complexes of educational-methodological tasks, structuring of the system of special course classes based on technological map, organization of laboratory and practical classes, pedagogical practice based on educational-methodological tasks, application of computer programs) are the important factor of development at the future teachers of competence and theoretical thinking in the sphere of management of independent educational activity of pupils.

The results of the pedagogical experiment confirmed the legitimacy of the hypothesis about structure, model of readiness, model of forming the future teacher readiness to the management of independent educational activity of students, and pedagogical conditions of its functioning. The conducted research allows outlining the prospects for further development of the problem. Its further development can be considered in the following directions: improvement of the educational-methodological support of student training in concrete pedagogical specialties; continuity of the organization of independent educational activities of pupils in secondary and higher vocational pedagogical educational institutions.

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