Development of Professional Creativity of Professional Teachers in Professional Courses on The Basis of E-Pedagogy Principle

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ABSTRACT

This article describes the ways and methods of developing the professional competence of teachers of professional education in professional development courses on the basis of e-pedagogy. In addition, "Practical training in e-learning. Experiments in the development of education with the help of software "provides a technological map, which describes in detail the stages of application of technology" Design-thinking ".

CCS CONCEPTS

• **Social and professional topics**;

KEYWORDS

e-pedagogy, e-learning, creative competence, professional creativity, professional education, advanced training courses

1 INTRODUCTION

Today's high development of science, technology, engineering and production automatically puts new social demands on the agenda. Among these social requirements, the society, as well as the driving force behind the development of industries on its basis, is the training of qualified personnel, the improvement of the system aimed at this goal. The need for training of qualified personnel In connection with the social, economic and cultural development of society, the emergence of new directions, specialties, the need for training in them, the formation of the need to consistently improve the professional knowledge, skills and abilities of specialists as well as the growing demand for it to be able to withstand strong competition

in the labor market as a specialist. In the current situation, the system of continuing education, in particular, the stage of vocational education, which has a well-founded mechanism for providing the social, economic and cultural spheres with qualified personnel, has a special place. As mentioned above, the rapidly evolving period puts before professionals the task of preparing for drastic changes, shaping and developing themselves socially and professionally in line with the times. The quality of the educational process in vocational education institutions contributes to the ability of specialists to fully meet this requirement. To take concrete measures to further improve the system of continuing education, improve the quality and competitiveness of educational services, taking into account market conditions, train highly qualified personnel in accordance with modern needs of the labor market, develop the creativity of professional teachers in professional development courses is one of the priorities of the Ministry of Higher and Secondary Special Education. It should be noted that in the current context of globalization, special attention should be paid to the development of ICT, creative and professional competencies of teachers of professional education in the educational process in accordance with androgynous principles and their professional development in professional development courses. In particular, radically improving the quality of vocational education, including improving the professional creativity of vocational education teachers on the basis of e-pedagogy principles, is one of the current problems.

2 METHODOLOGY

A number of scientific studies have been conducted in the country aimed at developing the professional competencies of teachers of vocational education.

A.R.Khodjaboev developed the pedagogical basis of educational and methodical support of teachers of labor and vocational education and showed ways to apply them in practice. A number of factors and conditions that provide the process of formation and training of a teacher of vocational education have been identified and justified, the descriptions of the educational process as a system are also disclosed. [5][6].

U.N.Nishonaliev's research examines the process of training labor education teachers in different historical periods and explores an innovative approach to the personality of vocational education teachers. [7].

The theoretical and methodological aspects of the training of teachers of vocational and labor education are reflected in the fundamental research of R.H.Djuraev [8].

Socio-pedagogical and theoretical-methodological bases of development of secondary special, vocational education in Uzbekistan studied by H.F.Rashidov [4].

U.I.Inoyatov scientifically substantiated the theoretical and organizational-methodological bases of quality control and management of education in vocational education institutions [10].

The fundamental research of B. Mirzakhmedov and K.Olimov studied the theoretical and practical aspects of the creation of textbooks for vocational education. In this fundamental research, the concept of creating a new generation of educational and methodological literature for the process of teacher training in vocational education is scientifically based, and scientific and methodological recommendations for improving the quality of the educational process are given. [12].

Practitioner O.A.Abdukuddusov studied the problem of an integrated approach to the process of training teachers of vocational education [13].

Taina Kaivola, Tiina Salomaki, Juha Tina's scientific article "In search for a better understanding of student learning experiences" presents the results of research in the educational process of higher education students based on the principle of e-pedagogy, which describes the stages of Lego Robot creation . In developing the Lego Robot model, ways to develop students 'ICT creative skills are highlighted. [14].

In our opinion, the development of professional creativity of professional education teachers in professional development courses based on the principle of e-pedagogy is defined as the use of blended learning and flipped learning technologies and e-learning resources in the educational process.

3 DISCUSSION

The module "Creative Education" is conducted in the advanced training courses for managers and teachers, organized at the Institute of Pedagogical Innovations, Vocational Education Management and Retraining and Advanced Training of Teachers. A total of 150 listeners attend each month.

From the practical training of the module "Creative Education" Practical training in e-learning. Experiments in the development of education with the help of software "is a technological map and an example of the use of creative methods.

Practical training №1. (Table 1)

In the "Creating and mastering innovation" phase of the technological map of our practical training, given above, work with design thinking technology is given. Below are the steps to work with this technology in "Practical training in e-learning. Experiments in the development of education using software tools.

3.1 Subject description:

Pedagogical software is a didactic tool designed to partially or completely automate the learning process using computer technology. They are one of the promising forms of increasing the efficiency of the educational process and are used as a teaching tool of modern technologies. The structure of pedagogical software includes: software product (set of programs), technical and methodological support, additional and auxiliary tools aimed at achieving specific didactic goals in the subject.

"Design - thinking" technology is carried out in 5 stages. (Figure 1)

To do this, we divide the group into 4-5 small groups. This will help you complete the assigned tasks easily and save time.

Each group is named.

The first stage of the technology "Design - Thinking" is "Understanding", and we apply the concept of "Software used to improve the quality of education" on the topic in the game "Cluster" and the classification method.

Aim: To acquaint listeners with the content, essence, tasks, types of game technologies.

Teacher: - Introduces the audience to a new topic;

Writes the word "clustering".

1. Write down what you think. Just write them down without thinking about the quality of your opinion;
2. Ignore spelling or other aspects of your writing;
3. Do not stop writing until the allotted time has elapsed. If you can't think of any idea for a while, then start drawing something on paper. Continue this movement until a new idea is born;
4. Do not limit the quality of the sum of as many new ideas as possible within a particular concept and show the connections between them.

Teacher: Accepts all concepts.

1. He writes down on paper what he thinks;

2. Does not pay attention to spelling and grammatical features of inscriptions;

3. Continues His Thought until the time allotted has expired;

4. Tries to shed more light on a particular concept;

Once the technology is complete, it is analyzed under the guidance of the Listener.

Expected result: The listeners get acquainted with the content, essence, tasks, types of game technologies.

Branching of thoughts is a pedagogical strategy that helps the listeners to study a topic in depth and teaches the listeners to branch the concept or clear idea related to the topic in a way that connects them in a free and open sequence. This method can serve to accelerate and expand the thinking activity of the audience before in-depth study of a topic. It also reinforces, masters, and generalizes the topic and encourages the audience to express their ideas on the topic in a graphic way.

This helps the listeners to determine their level of knowledge, understanding and imagination.

This method can be used in individual, small group, team work. So, we collected the data that leads to finding a solution to the problem (Understanding phase). Based on this, we put the problem clearly in the Focus phase, that is, when we analyzed the software in the "Cluster" method, we classified the software into 7 groups (Figure 2). Concepts are distributed to each group in 7 groups. For example, the first group includes the concept of "Animation and three-dimensional image editors." In the focus phase, we use VEER technology to find a solution to this concept (Figure 2).

Instructor: 1. Explains ways to transfer technology and distributes handouts.

2. Ask the audience to divide into small groups of six.

3. Some concepts on the topic are selected.

Table 1: "Practical training in e-learning. Experiences in the development of education using software" (2 hours)

| Stages of creative learning sessions	Stages of creative learning sessions	Stages of creative learning sessions
Organizational part		
Organizational phase 5 min.	**Organize the division into small groups of 5 listeners.**	**Divided into groups of 5 people**
Main part		
1. To know the problem and see it in your own experience. Discussion - 5 min. Statement - 5 min for each group. Total: 30 min.	Higher education is asked to analyze their professional activities as students of computer science, mathematics and physics and identify 2-3 real methodological problems (10 discoveries). For example, in large auditoriums (60-80 students) there are lectures on programming (with complex theoretical and practical materials unfamiliar to students) with a presentation (screen, projector, computer).	Working in a group, they realize the problem and see it in their own experience. Each group raises one problem and analyzes it based on design thinking technology
2. Analyze the problem and identify the need that arises from it. Discussion- 10 min. Discussion -3 min. Statement - 5 min for each group. Total: 20 min.	They are asked to complete the next exercise (enlarging and minimizing the problem or someone else's opinion): A written or oral form can be used to find a solution to a given problem. It is necessary to "exaggerate" the problem, that is, to find answers to the questions of what will happen if the problem grows, how the world will change. Then you need to "minimize" the problem and follow the next steps.	Analyzes, imagines Each group gives its own option.
3. Search for new data, solutions and analysis. Discussion- 10 min.	The circus method is used. You will be asked to complete the following exercise. Write down all the stereotypes (analysis) relevant to the problem: large (small) lecture audience, computer, projector, presentation, program code, student participation, audience participation, and so on. Then imagine the character of each given. For example, the new list may include a small audience, no students, no computer, no audience, and so on. What has been preserved from traditional education and what more can we add.	They reveal their features, look for new options based on a critical approach.
4. Creating and mastering innovation. Discussion-10 min. 5-10 minute break	Applicable method: "Design-thinking" technology.	Discuss, evaluate advantages and disadvantages, summarize solutions, choose the best option
5. Assimilation of innovation. Discussion - 10 min. Preparation -10 min. Statement - 5 min for each group. Total: 35 min.	Each group is recommended to use the SCAMPER method and problem-solving and solution options are suggested.	
Apply innovation. Thinking - 5 min Statement - 2 min for each listener. Total: 45 min. Total: 45 мин.	The following task is given for independent study. You have 5 min to choose a problem and solve it creatively. have In addition, students will be given a week to prepare a syllabus with a description of the methods used to develop their creativity. Then 2 hours are given, during which time students are required to maximize their creativity.	Individual understanding Declare the problem After a week, a methodological project will be presented, which will be applied in pedagogical practice and will be given as a qualification work.
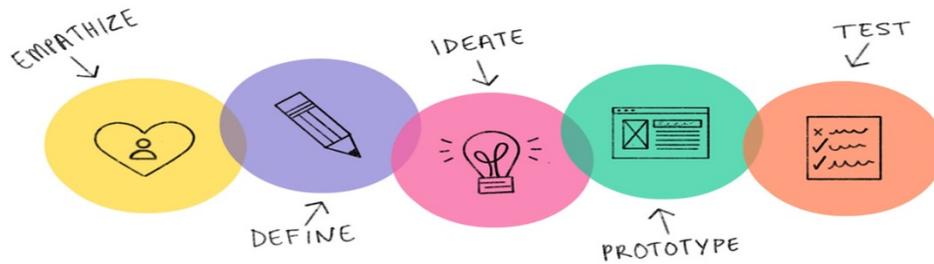
Figure 1: 5 stages of "Design - thinking" technology
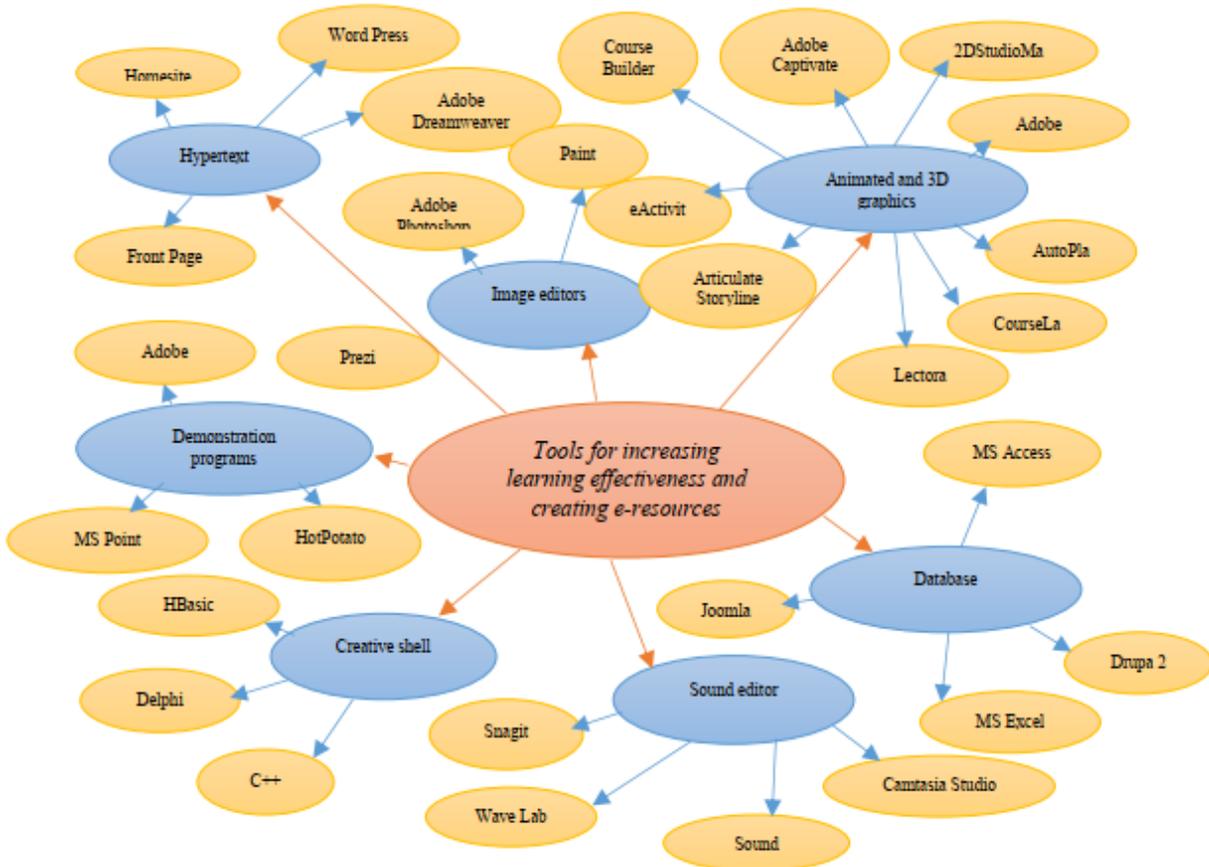
Figure 2: Description of the concept of "software tools used to improve the quality of education" in the "Cluster" method.

4. Advantages or disadvantages of concepts; the pros and cons are analyzed and written on the papers provided.

5. In the Veer interactive method, the listener is told to review the concepts and draw conclusions from them in agreement with the groups.

Teacher: Understands how to transfer technology. Get acquainted with the material.

Expected result: Students will learn to apply technology in practice.

Name of programs/Properties	Simple interface	Online version	Offline version	Needs of web programming	Free	Support SCORM and TinCan	Creating prezentation	Creating test	Working with multimedia objects	Total score
Articulate Storyline	1	0.5	1	1	1	0.5	0	1	1	7
Lectora Inspire	1	1	1	1	1	1	1	1	1	9
CourseLab	0.5	1	1	0.5	1	1	1	1	0.5	7,5
AutoPlay Studio	0.5	1	1	1	1	0.5	0	1	1	7
Adobe FlashCS6	0	0.5	1	0	1	0	0	0	0	3,5
3DStudio Max	0	0.5	1	1	1	0	0	0	0	3,5
Adobe Captivate CS6	0.5	0.5	1	1	1	0	0	0.5	0.5	4,5
CourseBuilder	0.5	0.5	1	0	1	0.5	0	0.5	0.5	4,5
eXeLearning	0.5	1	1	0.5	1	1	0.5	1	0.5	8

Figure 3: Application of software analysis in VEER technology

This technology focuses on the study of complex, multidisciplinary, as problematic topics as possible.

The essence of the technology is that it provides information on various areas of the subject. At the same time, each of them is discussed from separate points. For example, pros and cons, advantages, advantages and disadvantages, advantages and disadvantages are identified. This interactive technology allows for the successful development of critical, analytical, clear logical thinking, as well as the concise expression and defense of their ideas and opinions in written and oral form.

VEER technology focuses on the active work of small groups, each participant, the group discussing certain areas of the overall theme. VEER technology can be used at different stages of the study of the subject:

- -in the beginning: free activation of the knowledge;
- - in the process of studying the topic: deep understanding and comprehension of its basics;
- -in the final stage: the organization of the acquired knowledge.

The basic concepts are:

- Ø The object, event, concept is checked by aspect.
- Ø Advantage is an advantage, a privilege compared to something.
- Ø Virtue - a positive quality.
- Ø Defect - imperfection, non-compliance with the rules, criteria.
- Ø Conclusion - coming to a conclusion from a particular idea, from evidence to logical rules.

In addition to education, VEER technology allows you to perform a number of tasks of an educational nature:

- -skills in teams, groups;
- - the ability to discuss problems, situations from different perspectives;
- - the ability to find compromise decisions;
- - respect for the opinion of others;
- -kindness; -creative approach to work;
- -activity;
- - the ability to focus on the problem.

So, VEER technology has identified for us the most optimal software tool for creating e-Learning (Lectora Inspire).

In the ideas phase, students ask each other (within a group) questions about the Lectora Inspire program. In this case, we use the interactive method "Brainstorming".

For example:

1. What steps do you need to take to create interactive actions in Lectora Inspire?
2. Steps to work with multimedia in Lectora Inspire?
3. What kind of multimedia objects does Lectora Inspire work with?
4. Add chapters, sections, and sheets in Lectora Inspire?
5. What types of tests can be included in the Lectora Inspire program?

As a result of answering the questions, the group members write down their knowledge of the program in the form of ideas and come to a final conclusion.

Table 2: Assessing criteria of student project work

G/Criteria's	Text0.5 point	Picture 0.3 point	Video0.5 point	Animation0.7 point	Character0.3 point	Test 0.7 point
1–group						
2–group						
3–group						
4–group						
5–group						

In the Prototype phase, each group creates their own video course based on the ideas obtained in the "Ideas" phase. Each video course lasts about 3-4 minutes. In the allotted time, the groups complete their work and prepare their project defense by writing their projects in the form of a text in Microsoft Word, a presentation in Microsoft Power Point.

During the test phase, project protection is determined (usually in practical training). Listeners rate themselves on the use of elements in the program (Table 2):

In general, listeners are evaluated on a 3-point scale.

4 CONCLUSION

Summarizing the scientific research, methodological developments, textbooks, monographs and recommendations, the following conclusions were drawn:

An analysis of the literature on the problem has shown that the formation of creativity in humans is one of the tasks of education. Therefore, the development of professional creativity of teachers of professional educational institutions in retraining and advanced training courses is an urgent problem.

Organizational and pedagogical conditions and stages of development of creativity of teachers of retraining and advanced training courses of teachers are scientifically and methodologically substantiated.

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