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IMPROVING THE METHODOLOGY OF PREPARING STUDENTS FOR INTERNATIONAL EVALUATION RESEARCH

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ABSTRACT

In the continuous education system of our country, reforms aimed at ensuring the development of modern competence approaches are being carried out in the general secondary education system, which provides for the formation of educational and cognitive competencies in students based on advanced foreign experiences. "Fundamentally improving the quality of general secondary education, in-depth study of other important and high-demand subjects such as chemistry, biology" was defined as one of the priority tasks.

KEYWORDS

International assessment programs, issues of developing students' scientific literacy, effectiveness of the educational process, educational priority, mathematical literacy, scientific literacy, international research programs, future teachers, students, chemistry.

INTRODUCTION

A "Road Map" was developed to prepare for the participation of the Republic of Uzbekistan in international studies on international assessment programs, according to which advanced national standards for improving students' written and oral literacy were developed. and introduction of

international experiences; development of electronic education for students to learn independently, creating and enriching a database of questions on international studies in reading, mathematics and natural sciences; introduction of independent education to prepare students for international studies

in reading, mathematics and natural sciences; in connection with the implementation of international studies, in cooperation with qualified teachers-trainers, the organization of trainings in the regions is defined. PF-5538 of the President of the Republic of Uzbekistan dated September 5, 2018 "On additional measures to improve the public education management system" [1], September 5, 2018 "People Resolution No. PQ-3931 [2] of the Cabinet of Ministers of the Republic of Uzbekistan on measures to introduce new management principles into the education system" dated 8/2018 997 of December [3] "On measures to organize international studies in the field of education quality assessment in the system of public education", the implementation of tasks defined in other regulatory legal documents is becoming a requirement of today.

Scientific research related to the development of students' reading, mathematical, natural-scientific literacy and creative thinking in international assessment studies is carried out by the world's leading scientific centers and higher education institutions, including Shanghai and Xi'an Universities (China), East China University (China), Purdue, Western Lafayette, Kentucky, Lexington Universities (USA), Uta University (Malaysia), Kent University (UK), National University of Singapore (Singapore), Hokkaido University (Japan), Bashkir State University (Russia), Belarus State University (Republic of Belarus) and is

conducted in several higher educational institutions in Uzbekistan.

It is necessary to form a number of literacies in the preparation of future chemistry teachers for international evaluation studies. For example: we need to form reading, mathematical, natural-scientific, global, financial, IT literacy and creative thinking competencies as part of functional literacy. Why do we need to develop such literacy and competencies for future chemistry teachers?

This is because most of the chemistry teachers will work in secondary schools in the future. If we form them such literacy and competencies, the students they have prepared (educated) can participate in international evaluation studies and achieve high results. Therefore, all future pedagogical personnel should know the literacy and competencies mentioned above. In learning this kind of literacy, future chemistry teachers should be taught literacy competencies. Here we analyze literacy and competencies in several international assessment studies. It is necessary to form many competencies in the development of natural-scientific literacy in future chemistry teachers [5].

Literacy in natural sciences is the ability to identify problems that can be solved scientifically in life events, draw conclusions based on observations and experiments. These conclusions are the main goal of

this department to understand the world around us and understand the changes occurring in it as a result of human activity, to make the necessary decisions accordingly. This literacy is intended to be given in the course of teaching physics (along with elements of astronomy), biology, chemistry and geography. A person who is literate in natural sciences will develop the following competencies: scientific explanation of phenomena, design and evaluation of scientific research, scientific interpretation of data and evidence [6].

Competence to scientifically explain phenomena - to know, propose and evaluate explanations of technologies, natural phenomena-processes. The following skills are demonstrated:

memorizing and using relevant knowledge from natural sciences;

make and justify relevant forecasts;

understand, create and use interpretive models and images;

propose explanatory hypotheses;

to explain the practical importance of scientific knowledge for society [4].

Competency in designing and evaluating scientific research - describing and evaluating scientific research

and proposing ways to solve problems based on science. It demonstrates the following skills:

evaluation of the methods of scientific interpretation of given authors;

description and assessment of methods used by scientists to ensure objectivity and reliability of data;

distinguishing the questions that can be scientifically researched;

propose a method of scientific research of given problems;

the competence to identify the problems studied in the given scientific research is formed [4].

Competence of scientific interpretation of data and evidence - analysis and evaluation of various forms of scientific data, evidence, and drawing appropriate conclusions. The following skills are demonstrated:

to express information in a certain form in another form;

analyze and interpret data and draw appropriate conclusions;

to be able to distinguish opinions based on scientific evidence and theories from other non-scientific views;

evaluation of scientific opinions and evidence from various sources (for example, newspapers, magazines, the Internet);

identify hypothesis, evidence and conclusions in the text taken from scientific literature [5].

What is "global competence"? - this is a new component of functional literacy. Global competences are not specific skills, but are used in personal or virtual interactions with people from other cultural backgrounds and are involved in solving global problems that do not have and affect national boundaries. is a combination of knowledge, skills, attitudes and values. According to the OECD, education systems that take into account the need for such knowledge, skills and attitudes truly prepare schoolchildren for life in the modern world [6].

Financial literacy: its importance, problems and solutions.

Financial literacy is an important issue in the pursuit of a more transparent, healthy and sustainable economy in developing economies. Financial literacy is the ability to understand and effectively use a variety of financial skills, including personal financial management, budgeting (income and expenditure), and investments [7]. Creative thinking is finding innovative (new, innovative, original, non-standard, unusual, etc.) and effective (practical, effective, economical, optimal, etc.) solutions, acquiring new knowledge, and developing ideas aimed at effective expression of imagination. ability [8]. Creative thinking helps us find unusual solutions to problems. However, we should

not confuse it with critical thinking, but rather see it as "siblings" who help us find complementary solutions to impossible problems.

In PISA studies, students are required to solve scientific problems or social problems, express their ideas in writing or visually, according to the assessment model of creative thinking. The assessment of creative thinking focuses on the competence to develop different ideas, develop creative ideas, and evaluate and improve ideas. If it were not for the creative thinking of primitive people, two flints would not have struck fire, Thomas Edison would not have invented an electric lamp, and Leonardo da Vinci would not have invented a parachute. PISA studies have a definition of creative thinking that is relevant to 15-year-old students around the world. In the PISA 2022 studies, the term creative thinking is interpreted as working with the creative competence of the young generation, forming ideas that stimulate learning and finding real and effective solutions, and an increase in knowledge or expressive expressions of imagination. This definition of creative thinking is consistent with the definition given by the Strategic Advisory Group of Experts on Creative Thinking (OECD). This is a student of all types of education and all fields of science. It refers to the degree to which students participate in the process of creating ideas, how they express their attitudes towards them, taking into account the importance and novelty of ideas, and how they

continue to create ideas until they achieve the result they expect.

Creative thinking is the ability to find innovative (new, innovative, original, non-standard, unusual, etc.) and effective (practical, effective, cost-effective, optimal, etc.) solutions, acquire new knowledge, develop ideas aimed at effective expression of imagination [9]. We can call these specialists qualified personnel only after the literacy and competencies given above are formed in future chemistry teachers.

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