

Development of Science-Education-Production Integration in the Water Supply System of Uzbekistan

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Abstract: This article analyzes modern approaches to improving the system of training highly qualified specialists in the water management system of Uzbekistan and the integration of science, education and production as the most effective ways to address this urgent issue. Nowadays the training of highly qualified specialists with practical experience on effective use of water resources one of the key issues is in Uzbekistan. In this article, solutions for the development of science-education and production integration in water management enterprises are developed.

Keywords: integration, water management, water supply, water policy, system, innovation.

INTRODUCTION

According to the results of the analysis of the comprehensive study of the education system of the Republic of Uzbekistan by a high-level panel of international experts, jointly with the United Nations Organization's Education committee on science and culture (UNESCO) Consulting Organization (DESP Research and Consulting) in January-June 2017, it was noted that the lack of integrity of theory and practice in the educational process, as a result of ineffective organization of professional practice of students in industrial enterprises, the fact that the majority of graduates are re-educating their professions, specialties, and jobs, as well as lack of qualified teachers and management personnel, lack of effective cooperation with foreign educational institutions. It is known that the development of any state depends on highly qualified specialists, and in this regard, training of highly qualified specialists with modern knowledge is one of the most urgent issues. The most effective way to solve this problem is through forming the close cooperation of science and education. One of the issue is - improvement of integration of science-education and production in water supply and sewerage is essential in implementing the Decree PQ number 3151 of the President of the Republic of Uzbekistan dated July 27, 2017 "On measures to further increase the participation of industries and sectors in improving the quality of higher education." According to the United Nations, more than 80% of infectious diseases can be caused by poor quality of drinking water and violation of sanitary and hygienic rules in water supply. Currently, about 3 billion of the world's population are consuming contaminated water, and nearly 2 billion of them have been diagnosed with various diseases [1]. Water consumption in the world is on the rise. In particular, Professor A.T. Salokhiddinov noted that "from 1950 to 1990, the water consumption increased by 2-2.5 times and reached 300 km³, and now the amount of water used for drinking water around the globe is around 500 km³" [2]. The only way to prevent such adverse events is to train qualified personnel in the water management system. In the 4.1 item of the 4th part of the Development Strategy of the Republic of Uzbekistan - "Priorities for Social Development" [3], it is aimed gradually increasing employment and real incomes of the population over the next five years, thus addressing such issues as "creation of new jobs and employment of the population, especially employment of secondary special and higher education graduates". In line with the

abovementioned market principles one of the most important issues is the implementation of innovative cooperation of education-science-production principle. These tasks require improving the quality of education, training qualified, competitive specialists or making radical changes in the education and training systems. Ensuring the quality of education is provided primarily by the logistical and financial base of the educational institution, financial contracts, research projects, modern technical equipment, information resources, e-learning tools, professional skills of teachers, knowledge and skills, student performance, quality indicators, level of skills of specialists, occupations and needs of the expert on the part of the consumer, on the other hand, on the other hand the requirements and offers of the customer (employer) on the specialist are of great importance. Quality control of education in the educational institution is directly related to the verification of the educational process for compliance with the state educational standards and other normative and legal documents, as well as the training of competitive, and personnel which adoptable to market conditions. As we all know, the main purpose of an educational institution is to train qualified specialists with theoretical and practical training. At present, there are a number of factors that may adversely affect the quality of education in educational institutions, including: - Aging of the staff; - Low inclination of talented young people to graduate from educational institutions to pedagogical activity; - Some difficulties in dealing with the organization of practices; - Insufficient pedagogical abilities of practicing specialists, invited from production to educational process; - Insufficient integration between educational process and production; - Obsolete material and technical basis of the educational process; - Inadequate targeting of young people admitted to educational institutions in the course of their career choices. In general, the current state of education quality control is based on activating and motivating faculty and students, and it is desirable to create a new process system to bring it to a higher quality level. “The Strategy of Action for the Five Priorities of Development of the Republic of Uzbekistan in 2017-2021” [4] aims to increase the level of public utilities, first of all, through the construction of new drinking water branches, the gradual introduction of costeffective and efficient technologies, and the main goal is radically improve the provision of clean drinking water to the population of villages. Compared to other branches of public utilities (gas and electricity) in the country, the following problems are encountered:

- Water wastewater companies are failing to provide adequate salaries and, therefore, the decline in the prestige of this type of activity;
- The involvement of well-educated personnel is quite low as a result of which there are currently low-skilled elderly workers in the sector;
- There is a need to improve the professionalism of the water supply company employees. The main reason of the barrier of developing the branch is the lack of professional knowledge of the technical, financial and management personnel of the system.

Table 1 Information on water supply system personnel [5]

Water Supply Personnel Analysis	Number of staff
Total number of employees in water supply enterprises (person)	18722
Total number of subscribers in the system (mln)	3,2
Average number of employees / 5.9 per 1000 subscribers	5,9
Average age of water supply personnel (year)	45
The average salary of water supply personnel	750 000
% of management and administration staff	8,9
% Employees	91
% Staff with higher education (university, institute)	15
% Secondary Education	50
% Employees with primary education	35

Source: Ministry of Housing Utilities, 2018

The total number of subscribers in this branch is more than 3.2 million people, with an average of 5.9 employees per 1,000 subscribers. This in turn leads to low wages. In order to increase the efficiency of water supply enterprises, the following tasks should be implemented:

- to settle labor remuneration issues;
- gradual reduction of the workforce of the enterprise;
- cardinal reform of the system of professional development of workers;
- Implementation of on-site training of employees to meet the requirements needed to improve performance;
- implementation of science-education and production integration in cooperation with higher education institutions in the field of water supply enterprises.

Summary. The development of any branch depends on highly-qualified specialists, and therefore, it is necessary to increase the policy of preparing cadres in the branch to the highest level in order to ensure environmental safety and development of the water supply system in the country. The most effective way to address this urgent issue is to systematically integrate science, education and production. As a solution to the training of young professionals in the water supply system in our country, the following should be done:

1. To create a “Student Practice Control Commission” at the water supply enterprises for the effective organization of students' practice internships in the enterprise system;
2. It is necessary to create conditions for teachers in higher educational institutions to get acquainted with the innovative technologies in the production system of the enterprise, which will allow them to improve their practical skills;
3. In the training of engineer-hydroengineers and engineers-hydraulic engineers, the higher education institutions involved in this field should carry out practical and practical classes in their specialties in the educational building, which is equipped with innovative technologies in the system. At the same time, must be divided into 40 minutes of theory and 40 minutes of practical training parts. Students will be given practical training and skill lessons by the enterprise engineers on the technological process.

Advantages of this phase:

- Organization of practice courses of specialty subjects at the enterprise;
 - teachers of the educational institution and the specialists of the enterprise must teach students together;
 - qualification and practice lessons must be divided into 40 minutes of practical lessons and 40 minutes of theoretical training;
 - As a result of learning the innovative technologies in the work process, they develop their professional and intellectual abilities. - within the framework of this training system the “Innovative Training Laboratory” will be established at the water sewage enterprises of the country.
4. Effective organization of doctoral and master's students' work on dissertation topics, as well as pilot tests at the enterprise in cooperation with higher education institutions and enterprises. If the water supply system is fully implemented, it is possible to establish a system of advanced training and retraining between the relevant universities and water supply enterprises in the sewerage sector. This is, in turn, ensures the integration of science, education and industry into this system.

List of used literature

1. A brochure dedicated to the International Decade for Water Resources, 2010.
2. Makhmudova I.M, Salokhiddinov A.T, Rural and pasture water supply. - Tashkent: 2012. – p. 4.

3. XV Republican scientific-practical conference on "Application of innovative technologies in education, science and production integration - an important factor in the development of the country", June 2, 2018
4. Scientific-methodical brochure on the study of the State Program on implementation of the Strategy of Action on the five priority directions of development of the Republic of Uzbekistan in the "Year of Dialogue with the People and Human Interests". - Tashkent: "Ma'naviyat" publication, 2017.-p.130.
5. <https://regulation.gov.uz/oz/document/41>