The Attitudes of the Students of Jizzakh Polytechnic Institute to Production Practice (In Terms of the Results of Social Research)

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The purpose of the article is to study the process of professional adaptation of students of technical higher education institutions based on the results of social surveys, as well as to analyze the importance of integration of higher education institutions and manufacturing enterprises in training qualified professionals. Based on social research, the level of satisfaction of students with workplace training, which affects the assessment of the quality of teaching in higher education, the attitude of students to their specialization, and future career success during the internship, was determined. Information on self-assessment of students' readiness for practice is provided. Criteria for its successful completion have been developed.

Keywords: technical university students, production practice, satisfaction, professional socialization of future professionals, professional qualifications, the efficiency of practice

INTRODUCTION

Particular attention is paid to the coordination of cooperation between customers and educational institutions in ensuring the quality and employment of training in the world, to the use of a dual system of activity based on an integrated approach, the organization of educational content based on integrated knowledge. Besides, the organization and development of cooperation based on modern methods require special attention to the organization of qualifying internships in the higher education system.

The "Vehicle Engineering" department of Jizzakh Polytechnic Institute was established in 1993 under the name "Automobile industry." Currently, students are studying in the following fields 5310600 - Ground transport systems and their operation (road transportation), 5310500 - Automotive and tractor engineering,

for a master's degree in the following: 5A310601-Ground vehicles and systems (road transport), 5A310604-Automobiles and automobile industry.

Internships are essential in the theoretical and practical preparation of students in the areas of study in technical higher education institutions. Depending on the distribution of internships in courses and semesters and the volume of work performed, student internships are divided into four types: training and acquaintance practice, internships, operational and technological internships, and pre-graduation internships.

Internships are a mandatory part of the undergraduate core curriculum. Internships are in the form of training or teaching sessions, which are directly focused on students' professional and practical training. The undergraduate training program includes three internships - training, production, and operational-technological internships.

Training and Acquaintance Practice

The dating process consists of two parts:

- *Acquisition of practical skills in the training workshop:* to learn the structure and operation of various lathes and machines and make a variety of details in them.
- *Acquisition of skills in the structure of ground vehicles:* acquaintance with the form of the car and its aggregate, mechanism, systems, design of various types, and mode of operation.

Production Practice

During the internship, students deepen their theoretical knowledge at the Institute in automobile plants, automobile enterprises, and companies and expand their worldview to study future disciplines.

They acquire skills in the operation, maintenance, traffic safety, and other departments of enterprises and companies of the road transport sector, as well as the process of gas stations.

Operational and Technological Practice

During the internship, students learn about the maintenance of vehicles, technology of current repairs, their organization and types of fuels and lubricants, consumption and quality standards, and organization of their transportation and distribution in automobile enterprises and companies.

As well as they acquire skills in studying the management, organizational structure, structure, and functions of the enterprise's operational and traffic safety departments, cargo, their volume, transport operations, and passenger flow on one or more routes.

Pre-Graduation Work (Project) Internship

I am preparing the graduate to work independently by the requirements of the direct standard; deepening and strengthening the acquired theoretical knowledge; gaining experience in organizational and educational work in the team; developing practical skills in the departments of the operational enterprise, and the collection of materials for the completion of graduate work.

The load in the bachelor's degree program curriculum for the field of 5310600 - Ground transport systems and their operation (road transport) are set at 54 hours per week, the maximum amount of workload, including all types of classroom and extracurricular activities. For non-production (full-time) training, the maximum number of classroom sessions can be up to 30 hours per week.

The normative duration of training is four years; the training process should last 204 weeks. Qualification practice is required to be at least 15% of the total training period.

Graduates of technical higher education institutions in the field of "Ground transport systems and their operation (road transport)" can work in many institutions working in the public and private sectors. Their activities include research activities, design and construction activities, operational and service activities, production activities, as well as organizational management activities. They can work in government agencies, enterprises, and organizations under the Ministry of Transport and research centers. In the private sector, in particular, private companies engaged in providing transport services licensed by the Ministry of Transport may work in non-governmental organizations.

This research discussed the practical concepts of students of technical higher education institutions. Students overviewed the given questions in terms of "the choice of time and place of the internship, the process of organizing the internship, the impact of the internship on professional qualifications and skills, as well as the impact of the internship on the professional future." Accordingly, students were studied: pre-internship feelings, work done during the internship and post-internship thoughts, experience gained during the training, and opinions about the company where the internship took place.

LITERATURE REVIEW

The main idea of developing the education system in our country, "Strategy of actions for further development of the Republic of Uzbekistan" created under the President of the Republic of Uzbekistan became the scientific and methodological basis of this research.

I. Askarov[6,7,8,20] on the preparation of students of higher educational institutions for research activity, S. Usmanov on the development of technical creativity of students[21, 22] and independent researchers B. Begmatov[11], U. Nurullaev, S. Sharipov[18], I. Umarov[17, 23] and A. Ernazarov[27] are researching the development of students' technical creativity and their professional competencies.

The issues of reforming the education system, enriching the content of academic disciplines, introducing advanced technologies in teaching, ensuring cooperation between educational and industrial enterprises, equipping specialists with modern knowledge, and ensuring their employees have been studied in detail by scientists. The development factor depends on the mental capacity and ability to work with the staff. At a time when they determine the growth rate in production, it is observed that research in this area is expanding its direction and network.

A.I. Avazbaev concludes that "integration is the process of merging individual components into a whole, creating a new property." According to the author, integration should be interpreted as a process[5].

R.A. Mavlonova also interprets integration as a process and emphasizes that it manifests itself in two senses: 1. The system, the concept of the state of the interdependence of individual stratified parts and functions of the organism, and the process leading to this state. 2. The process of convergence of disciplines is carried out in conjunction with the process of stratification[14].

M. Jumaniyazova describes integration in education as a result of the process of synthesis. At the same time, the term integration seems to have a somewhat unique character; in the author's opinion, integration is "the achievement of looking at the being around us as a whole, as a whole object." According to the author's conclusion, the object formed as a result of integration should be considered a whole object reflecting the semantic function of the term. However, in this case, looking at it as a whole does not mean that it is not subject to differentiation. In addition, the definition needs to elaborate on what object is being considered[12].

O.A. Abdukuddusov argues that "integration (Latin *Integration* - to restore, replenish, merge. *Integer* - to integrate) means to unite as a whole, to make a logical whole, is a high level of synthesis." In doing so, the author explains integration as a high-level synthesis process. The reason is that there is a combination (generalization) of parts or elements in the synthesis process. In this case, integration combines features or elements[3].

E.A. Turdikulov described integration as "the making of scattered, fragmented, individual things into a whole, whole, systematized state"[19].

The organization of teaching in foreign countries based on integrative knowledge is reflected in the research of the following scientists: G. Spencer, J. Gilbert, F. Cochran, J. Fernandez-Balboa, S. Merriam, P. Ertmer, S. Wilson, J. Wilson.

RESEARCH METHODOLOGY

The acceleration of society, science, and technology, and the daily development of information technology, is leading the XXI century into a deeply integrated economic space, a single communication, and an information system. This shows the need to nurture young people with comprehensive theoretical

knowledge, practical skills, and intellectual potential. It follows that the creation and implementation of an integrated mechanism between industrial enterprises and higher education institutions in the professional development of students is one of the fundamental pedagogical problems that must be addressed.

Presently, great attention is paid to integrating with universities and manufacturing enterprises. As proof of this matter, we can show The decree of the President of the Republic of Uzbekistan, "On the Strategy for further development of the Republic of Uzbekistan"No.DP-4947 of February 7, 2017, "On measures for further development of the higher education system" No. DP-2909 of April 20, 2017, and Resolution of the Government of the Republic of Uzbekistan No. 27 of 2017 and "On measures to further expand the participation of industries and sectors of the economy in improving the quality of training of specialists with higher education." No. DP-3151[3].

Today, the main goal of cooperation between employers and higher education institutions is to train qualified, responsible, and mature professionals who meet the requirements of the times. This requires a systematic organization of cooperation between the employer and the university. It is also necessary for enterprises to report existing problems in production to universities, to open branches of universities in enterprises, i.e., to achieve corporate cooperation, to hold "master classes" at universities, to arouse students' interest in production, and to organize internships[11].

Studying the problems of the enterprise in higher education institutions, on this basis, thesis, assignment of scientific topics to master's dissertations, if necessary, the conclusion of economic contracts, theoretical knowledge of students, lectures in this area among employees of the enterprise, practical assistance in improving their skills and this kind of affairs are implemented.

The content of student internships and the purpose of quality monitoring of the internship process 5310600 - Integration of educational content in training specialists in the field of education of ground transport systems and their operation (road transport), ensuring integration with higher education institutions and manufacturing enterprises.

The set goal solved the following tasks:

- study of theoretical information on the organization of the educational process, the integration of educational content based on the analysis of academic and normative documents (State educational standards, curricula, science programs, qualification programs, etc.) covering the process of training bachelor in technical higher education institutions and generalization;
- to determine the basic concepts of students and teachers of specialized higher education institutions on the importance of integration in the educational process using questionnaires;
- to study the level of formation of knowledge, skills, and abilities in students directly from the theoretical knowledge acquired by students in higher education during the internships organized in enterprises and organizations.

Experimental work was carried out among students of Jizzakh Polytechnic Institute in 5310600 - Ground transport systems and their operation (road transport). Two hundred four respondents were involved in the experimental work.

Monitoring of students' attitudes to internships was carried out in three stages:

1. At the substantive stage of the experimental work 5310600 - Ground transport systems and their operation (road transport) in the process of training students studied the relationship of disciplines taught in higher education, the relationship between science programs and internships. To achieve this goal, the educational activities of students participating in the survey were monitored, and interviews with them and questionnaires were conducted. In addition, the level of integration in the curriculum, curricula of general and specialized subjects, and educational and normative documents were analyzed. The implemented work allowed us to determine the direction and program of research. The scientific results of leading scientists and experienced educators on the same research topic were analyzed.
2. At the formative stage of the experimental work was organized practical-methodical activity based on the content of integrated knowledge, recommendations created based on such knowledge, methods of conducting integrated lessons, guidelines, methodological developments, and forms of integration. Direct and indirect pedagogical observation of

students' activities, organization of practical training with their participation, and integration of educational content through interviews and questionnaires were formed. The level of integration in the educational process was analyzed.

3. At the emphatic stage of the experimental work, the integration of science and industrial practice in the process of training future specialists in the field of road transport was organized, which analyzed the level of knowledge, skills, and abilities and determined the effectiveness of the methodology used.

The success of the experimental work was ensured by the presence of the following objective and subjective factors:

- creation of methodological conditions for the integration of technical higher education institutions and manufacturing enterprises;
- adequate material and technical base of higher education institutions;
- effective use of modern technical means and information technologies in the educational process in higher education institutions;
- special attention is paid to the education and formation of knowledge, skills, and abilities of future specialists in the field of road transport;
- involvement of qualified teachers with high pedagogical skills in the educational process of teaching students based on an integrated approach;
- students' having access to electronic libraries, etc.

In the process of conducting experimental work, it was determined to what extent teachers use integrative knowledge in teaching general and specialized subjects in higher education institutions, as well as the state of solving this task in the classroom. To do this, ?" conversations were held with teachers on topics such as "What is integration?", "What do you mean by integrative material?", "Integration as a powerful tool in solving any educational problem?", "What role does integrative knowledge play in understanding existence?"

ANALYSIS AND RESULTS

It is beneficial for the student to have an internship at the institution of their choice to gain practical experience within a specific work plan and curriculum. However, if we look at qualifying practice, it can be noted that three groups benefit. These are students, organizations, and educational institutions. The internship allows students to consolidate the theoretical knowledge acquired during the educational process. The internship provides information on the topics of the curriculum during the academic year, changes the student's consciousness, enhances his interpretation and evaluation skills, acquires knowledge about future professional life, takes responsibility for future work life, develops his professional knowledge and skills, work ethic, subordination and learns superior relationships and contributes to his experience. The internship is also seen as the first step to a professional career with students who have no internship in this field and no industry experience; There may be differences in readiness for this profession among students who have had an internship in their area. In addition, students' choice of internship location and expectations will affect their future working conditions and expectations.

From the point of view of educational institutions, internship programs are essential in meeting the requirements of the skilled workforce in this field and in preparing graduates to adapt to experimental and changing conditions. As part of the growing inter-university collaboration with internship programs, public-private partnerships can offer various opportunities, such as providing a competitive advantage in education, enhancing the reputation of the relevant department, and making it easier for graduates to find employment.

Internships are one of the first steps students and employers take to communicate professionally. This collaboration contributes to organizations in a variety of ways. Many institutions identify candidates who fit the corporate culture for permanent employment through internships. After graduation, the number of people working in the institution where he worked was much higher. This is because institutions prefer

candidates who have previously worked (internship, part-time, or volunteer) and left a positive impression. However, some special projects are implemented from time to time and are internship programs for lower-budget institutions as they support the existing workforce.

The influence of industrial practice on theoretical, professional and personal education. Practice is a practical teaching method that supports theoretical education in every field. In addition to contributing to academic instruction, internships allow students to take on social responsibility in matters such as taking responsibility, developing communication and professional skills, learning a profession, and learning the concept of corporate culture.

When it comes to choosing a place to do an internship, students can demonstrate a variety of behaviors that are critical to developing their professional knowledge and skills. In schools where the training takes place during the summer, especially students studying outside the city want to spend internships in businesses and organizations closer to their families to spend more time with them. The advice of friends and acquaintances, the direction of the teacher and colleagues, the perception of a well-known institution, and their research are other factors that influence the benefits of an internship. Whatever the reason for the preference, the most critical issue to consider is to have a one-on-one meeting with officials from the relevant agencies, even if they do not ignore the recommendations. As part of their previous experience, the student should aim for an internship at an institution that offers planned and organized internships in the field in which they intend to work; they should have the highest level of business practice and strive to pay great attention to site selection.

There are part-time, volunteer, and internship opportunities for students to recognize the work environment in which they work after graduation and to experience it in ways that apply. However, part-time employment may only be available in some areas. Voluntary work, previously used by students who want to improve themselves, is less daily than it used to be, as institutions do not prefer it due to insurance obligations. Compulsory health insurance premiums that cover all students (surrounding health and accident sites) do not pose any problem because they are paid by the educational institution where the student is studying under the relevant law.

Every institution can be confronted with a different organizational structure and corporate culture. It is known to affect interns. Sometimes, the events encountered during the internship lead to decisions that may affect professional preferences. While internship programs are routinely pre-determined by students at some institutions, some institutions still need plans or programs in place, and interns can work outside their fields as an intermediate workforce, under challenging conditions, and even in unrelated locations. Given that during the internship, students have an idea of what they will do after graduation, what happens during the training can lead to changes in their direct or indirect views of the profession.

The topic of the internship includes many problems that need to be addressed. Students going to training are not seen as interns, but staff have high expectations from trainees; trainees have a low level of education despite difficult working conditions, spatial descriptions of internship venues are insufficient, and some routine work will be trainees' future. On the other hand, on the first day of the internship, it is positive to introduce the interns to the whole working group, inform them about the institution, gain different experiences by working in other departments during the internship, see them as colleagues, and approach them with guidance. These two approaches can directly impact students 'attitudes toward the profession and their aspirations in the field.

To determine the relationship of students in the 5310600 – Ground transport systems and their operation (road transport) education and the degree of organization of internships in manufacturing enterprises, the following questions were asked and received written answers.

Research Questions

The study was analyzed on three main factors (F) related to student internships. The first factor is the interests of students in the field of study and the choice of internship:

1. The direction of education on ground transport systems and their operation is of great social importance.

2. My decision to choose a higher education institution was determined by my interest in transportation activities.
3. Practice is essential for building my professional training and professional competencies.
4. It is necessary to do an internship near my place of residence.
5. It is necessary to have an internship at a prestigious transport company in any part of the country.
6. I must have an internship in the world's leading transport companies during my studies.

The second factor is the location of the internship, the assessment of the relationship between theoretical knowledge and skills:

1. The internship company has all the opportunities to acquire sufficient skills.
2. During the start of the internship, I had difficulties.
3. Do you think a student who came for an internship should be hired as an intern?
4. The knowledge I gained in higher education helped me during my internship.
5. Theoretical knowledge and skills are separate from practice.

The third factor is assessing the internship's impact on the professional future and activities in the field.

1. I have enough knowledge, skills, and abilities in my internship company.
2. The professional competencies gained in practice will be critical in the future.
3. Practice has a significant impact on my work in this field.
4. It is essential to complete diaries and reports during the internship.
5. Solving problems or completing complex tasks during the internship is essential to becoming a mature professional.

The survey questions showed that students 'attitudes to integration between higher education institutions and manufacturing enterprises are essential in shaping students' perception of the world as a whole, their sense of belonging to the world, and their love for Motherland.

Presently, students have a high level of advanced technology and information technology, interest, and aspiration to the profession. Therefore, recommendations for the study of integrative knowledge using modern information technologies, including computers, were given during the internship.

In the first stage of the experimental work, interviews and controls were conducted with students to determine their level of knowledge. The following methods were used in teaching the selected integrative didactic materials to the students of the experimental group: observation, conversation, question-answer, oral presentation, problem-solving, and independent creative research. The results obtained for the scientific testing of practical teaching in the chosen field were also conducted in parallel groups. Curriculum, internships, and general and special education curricula developed in the field of vocational education of educational institutions were analyzed.

In total, 204 respondents were interviewed using individual and group face-to-face surveys conducted at the study site. Of these, 63 are first-year students, 77 are sophomores, and 64 are third-year students.

A multi-stage combined (serial internal) model was used to select respondents. In the first stage, students were classified according to the course and faculty affiliation principle. In the second stage, groups of students were randomly selected for each course and area.

During our study, we surveyed only senior students (64 students) about the effectiveness of student internships and how it plays a role in improving the skills of future professionals, as a survey conducted among our respondents only identified it during the survey.

TABLE 1
INDICATORS OF THE LEVEL OF SATISFACTION AND DISSATISFACTION OF RESPONDENTS IN TERMS OF FACTOR 1 OF THE SURVEY

Course	The number of respondents	In terms of factor 1		
		Satisfaction level	Dissatisfaction level	Those who find it difficult to answer
Freshmen	63	51	9	3
Sophomores	77	55	17	5
3rd-year students	64	49	10	5
Total	204	155	36	13

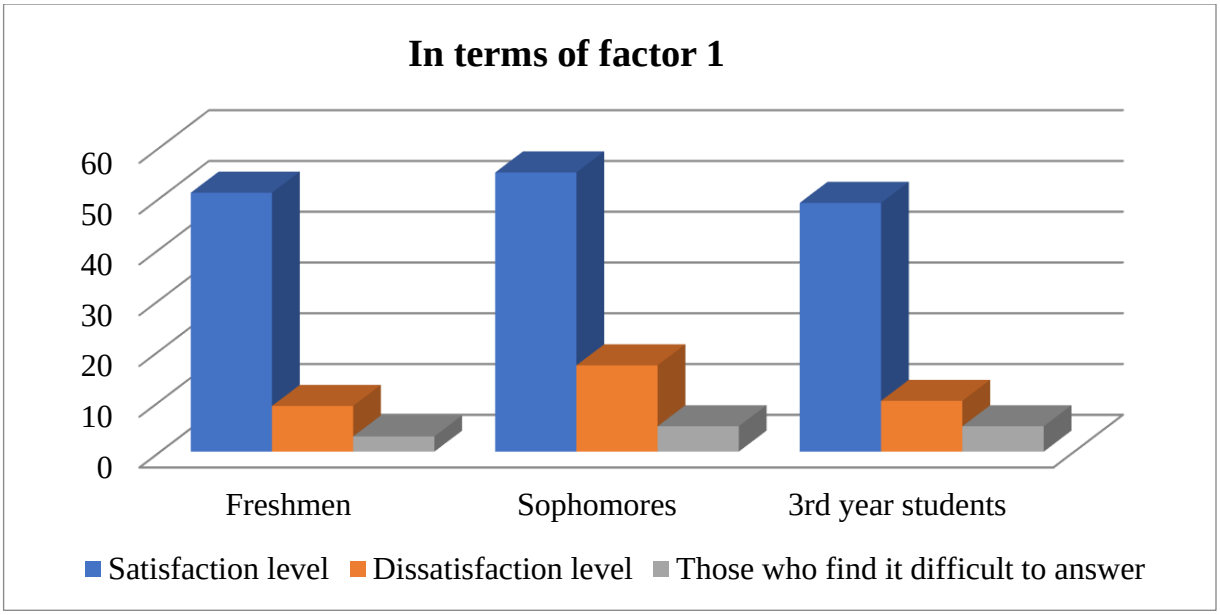


TABLE 2
INDICATORS OF THE LEVEL OF SATISFACTION AND DISSATISFACTION OF THE RESPONDENTS IN TERMS OF FACTOR 2 IN THE SURVEY

Course	The number of respondents	In terms of factor 2		
		Satisfaction level	Dissatisfaction level	Those who find it difficult to answer
Freshmen	63	48	11	4
Sophomores	77	57	16	4
3rd-year students	64	52	10	2
Total	204	157	37	10

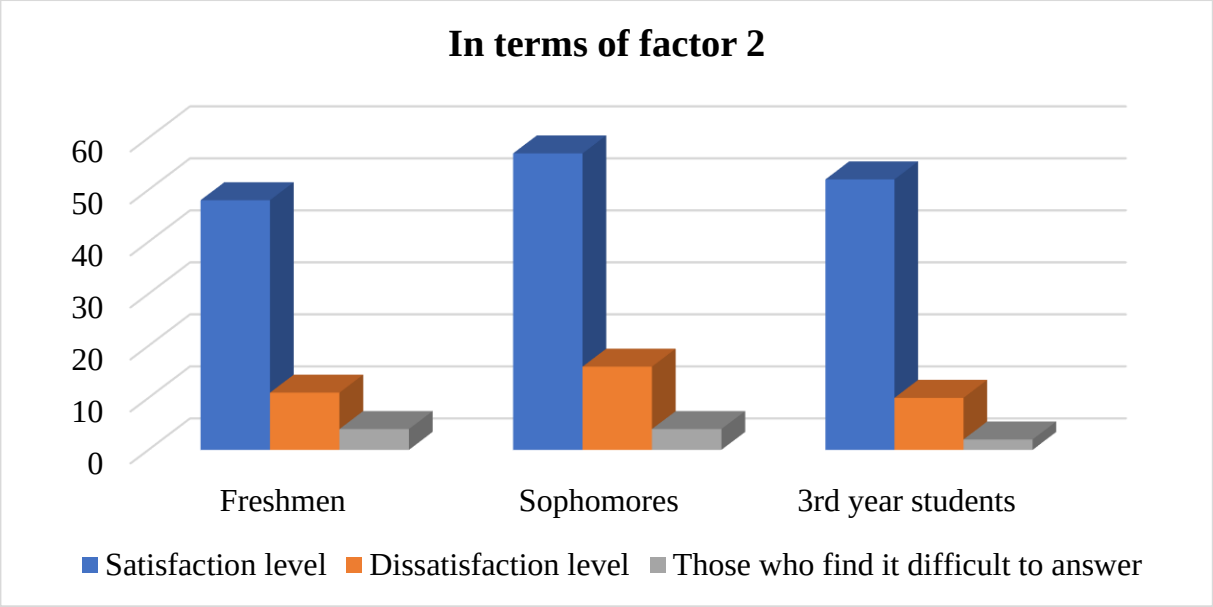
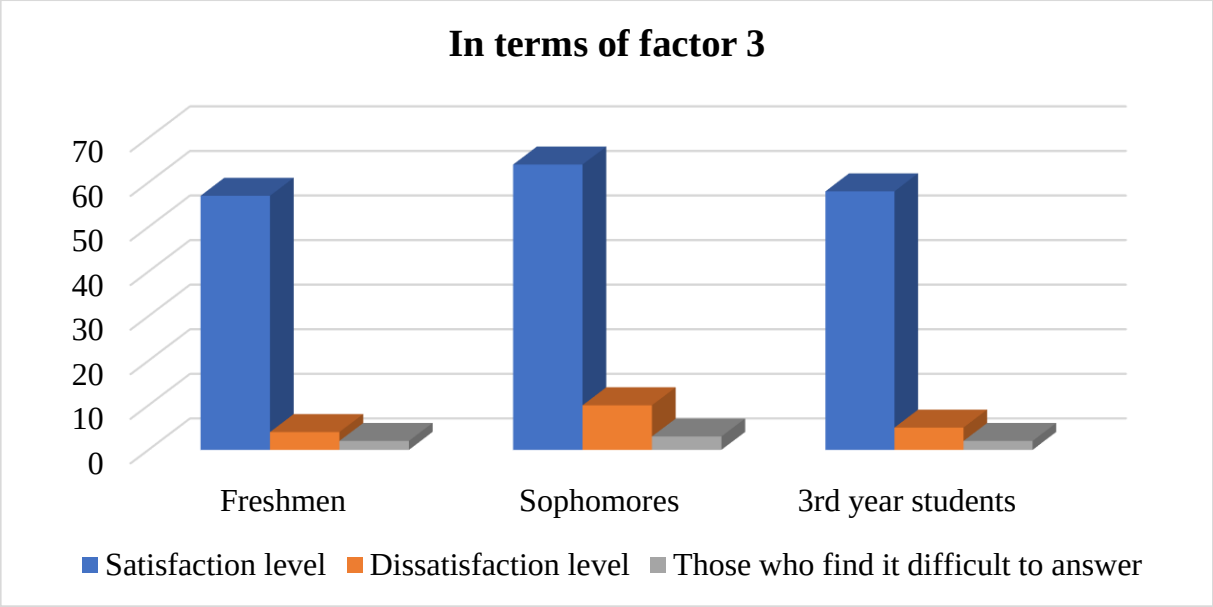


TABLE 3
INDICATORS OF THE LEVEL OF SATISFACTION AND DISSATISFACTION OF THE RESPONDENTS IN TERMS OF FACTOR 3 IN THE SURVEY

Course	The number of respondents	In terms of factor 3		
		Satisfaction level	Dissatisfaction level	Those who find it difficult to answer
Freshmen	63	57	4	2
Sophomores	77	64	10	3
3rd-year students	64	58	5	2
Total	204	179	19	7



The relationship between the respondents' satisfaction/dissatisfaction with the practice at the course intersection was likely based on the respondents' attitudes toward the areas of study.

The mathematical-statistical method was used to analyze the results of pedagogical experiments. To compare the responses of the respondents in terms of courses and survey factors, the average value of the assessment of mastering in groups was taken as the following formula: $X = \frac{\sum x_i m_j}{N}$

Here x_i – is an assimilation indicator (assessment value) that takes values such as satisfaction level, dissatisfaction level, and difficulty level of response.

m_j – the number of repetitions of grades;

N – the number of students participating in the experiment.

We conducted experiments using the following mathematical and statistical formulas:

1. $S^2 = \frac{1}{N}\sum_i m_i (x_2 - \bar{x})^2$ sampling variance
2. The average value evaluating the efficiency of production operations is the ratio of the arithmetic mean values of the test results in the course section, i.e., the efficiency coefficient

$$\eta = \frac{X_i^*}{X_j^*}$$

Thus, the statistical analysis results show that most students who participated in social research are satisfied with the practices established with manufacturing enterprises on selected factors. This, in turn, indicates the need to develop further the integration between industrial enterprises and higher education institutions, the organization of practical training in science, and laboratory classes in higher education institutions in the branches of the department organized at production enterprises.

CONCLUSION

As a result of the research on "The attitudes of students of Jizzakh Polytechnic Institute to production practice," the following conclusions were presented:

1. Improving the pedagogical capacity of intersectoral integration in ensuring the quality of training in higher education, the issues of cooperation between educational institutions and industry, ministries, innovation, and methodological centers were interpreted based on modern pedagogical principles.
2. Students' views on ensuring integration between industrial enterprises and higher education institutions in ensuring the quality of training, their interests in the field of education, and approaches to the choice of the internship were analyzed. An integrated system to the movement of bachelors in technical higher education institutions has been used to ensure the integrity of specialty qualifications, methods of action, interests, and aspirations.
3. Students' understanding of the place of internship and the relationship between practice and theoretical knowledge and skills was based on the results of social research.
4. The impact of internships at industrial enterprises on students' professional future and their activities in this field was assessed.

ENDNOTES

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