VOCATIONAL GUIDANCE WORK AMONG COLLEGE STUDENTS STUDYING IN IT-SPECIALTIES

Abstract. This article is devoted to the problem of vocational guidance work among students of higher educational establishments of the second level of accreditation in IT-specialties. The analysis of the Ukrainian pedagogical scientific and methodical literature showed that the scientific opinion is mostly focused on the issues of vocational guidance activity of students of secondary schools. In practice the implementation of the existing theoretical achievements in relation to the IT sphere remains at a fairly low level. As a result, non-pedagogical factors have a predominant influence on the professional choice of students: public opinion, ideas about the profession formed by the media and television, and so on. In accordance with that the priority tasks of vocational guidance was allocated, which should be solved in the process of training specialists in IT specialties.

In the context of the research, a survey of students of Ukrainian colleges in IT specialties was conducted. The survey allowed outlining the motivational portrait of an average student in terms of the dynamics of his change in the learning process. The average level of awareness of the choice of profession is revealed. There is a lack of clear vision of the prospects for further personal professional development in the field of information technology and the desire to continue the education in the chosen specialty in higher educational establishments of the III or IV levels of accreditation. It was established that the level of awareness of prospects in the IT sphere is specified not only by the variability of the initial motivations for college entering in the chosen specialty, but also the peculiarities of the IT sphere.

The obtained data allowed formulating and substantiating the basic principles of vocational orientation among college students and the tasks that should be performed for its improvement and overall optimization. The mechanisms of vocational guidance work is focused on the education of a qualified IT specialist with a high level of motivation for self-development are substantiated. The need to increase efforts to form a conscious competent choice of specialization within the chosen IT specialty for more effective development of professional skills is specially focused on. Additionally, the
influence of the features of academic groups and individual characteristics of students on the factors of application of vocational guidance measures was revealed.

**Keywords:** vocational guidance, tasks of vocational orientation, IT specialty, college, professional activity of a teacher.

**Problem statement.** The IT industry of Ukraine ranks third in terms of revenues to the state budget. Along with this, it remains one of the fastest growing sectors of the economy. Support for such growth requires an increase in the number of professionals with the appropriate level of training, which, in turn, belongs to the competence of the education system of Ukraine. One of the features of the IT sphere is its dynamism and variability in the development fields of specialists. In view of this, not only the effective guidance counseling of students (school graduates) to choose an IT specialty as a future profession, but also assuring of proper supports of interest and timely and correct direction of professional development of students play a particularly important role. In the absence of a purposeful plan for career guidance in higher educational establishments, this activity becomes unsystematic and is carried out by teachers within their disciplines. This determines the need for the development of pedagogical and methodological principles of vocational guidance work as a holistic set of actions aimed at strengthening the professional motivation of students of higher educational establishments.

**Research publications analysis.** The issues of professional orientation of future specialists are considered by I. Arefeev, V. Zinchenko, S. Zolotukhina, E. Pavliutenkiv, V. Symonenko, B. Fedoryshyn, S. Chestiakov, V. Kharlamenko and many other scholars. In the researches of D. Zavitrenko, L. Kurochkina, N. Ponomareva, B. Utehenova, I. Chorna, G. Schlichta and others the peculiarities of vocational orientation work done by computer science teachers of secondary educational establishments are revealed.

Despite the meticulous attention of researchers to the disclosure of the principles of vocational guidance work among students of secondary educational establishments, in pedagogical researches there are no significant developments on the features of vocational guidance work in IT specialties by teachers of higher educational establishments in general and colleges in particular.

**The purpose of the article** is to define and characterize the features and objectives of vocational guidance work among students of higher educational establishments of the II level of accreditation in IT specialties.

**Presenting the main research material.** In scientific publications and literary sources there is a wide range of approaches both to the interpretation of the concept of “vocational guidance” and to the definition of the content and direction of vocational guidance counseling.

Most scholars while defining the concept of career guidance rely on the definition of vocational guidance formed at the XV General Conference of UNESCO, according to which it was considered as “assistance to an individual
in using his personal characteristics, giving a person the opportunity to develop
them so that he can choose for himself the sphere of education and work during
his life under changing conditions and, on the other hand – to achieve personal
ambitions”. While developing this interpretation in accordance with modern
social and pedagogical conditions and coordinating it with the peculiarities of
the functioning of the IT sphere, some authors complete it: acquainting young
people with the most important and promising professional areas
(Popova, 2013, p. 184); the need to help students in the development of their
natural interests and abilities (Zhuravlova, 2013, p. 163); taking into account the
needs of society in personnel of a certain professional orientation
(Ponomarova, 2016, p. 134). Therefore, it is worth agreeing with the idea of
vocational guidance as a “complex of scientifically grounded forms, methods
and means of personal assistance in choosing or changing a profession,
employment based on the person’s individual psychological characteristics,
interests, abilities and needs of the labor market in personnel”
(Ihnatovych 2014, p. 23).

When it comes to the pedagogical aspects of vocational guidance, most
scholars narrow down the use of the term from an individual to a student. And
they mean, first of all, students of secondary schools. Thus, a significant group
of individuals for whom the pedagogical influence still remains an important
aspect of the formation both the individuality and the specialist are left out of
view of the scientific pedagogical community.

An important factor in determining the features of vocational guidance
among students of higher educational establishments is the awareness of the
difference between the initial conditions, goals and objectives of this activity
and the vocational guidance among students of secondary schools. In this article
we will focus on the issues of higher educational establishments of the second
level of accreditation.

To determine and substantiate the features of career guidance among
college students we should, first of all, consider the prerequisites that prompted
them to choose a specialty. Unlike secondary school students, who for the most
part are still in search of their professional vocation, university students have
completed this search by choosing the IT field. In this case the motivational and
ideological characteristics of students who have chosen to become IT specialists
should be considered as the initial conditions.

In the scientific literature there can found descriptions of various factors
that influence students' choice of future profession. In general, they can be
divided into 5 groups: public opinion, state influence, the influence of teachers,
the influence of higher educational establishments, and the interest of industry
players.

The prestige of the branch of industry in general and the specialty in
particular, formed by information campaigns in the media, social networks,
success stories of well-known IT professionals, etc., plays an important role in
choosing an IT specialty. It also leads to active encouragement of school leavers
to choose a future profession in the IT field by parents and relatives as the most
promising and in demand from their point of view. This factor is more in line with current social fashion and has no significant basis that would take into account the characteristics of the applicant.

Extensive support at the state level, which is currently received by IT education by reforming the list of industries and specialties of basic professional education; increase in expenditures to support educational development programs in the field of information technology; annual increase in the volume of state orders for IT specialties; updating the content and methods of computer science teaching in secondary schools, etc. is intended to increase the innovation of the domestic economy. Increasing the volume of informatization of society allows to more actively involving young people in the development of IT projects. However, there are still problems with bringing educational standards to world realities.

The influence of a teacher on the professional choice of a student could be attributed to social factors. However, compared to them, the teacher's influence is more personalized and relies on personal characteristics of students; it is more informative and provides proper feedback.

Specialized higher education establishments are actively involved in vocational guidance activities in order to encourage students to choose IT specialties. They are trying to enlarge the ranks of applicants by conducting career guidance campaigns in secondary schools; open days; opening of pre-university training centers; conducting information seminars among computer science teachers; support and individual work with gifted students, etc.

In recent years, Ukrainian IT companies have also shown considerable interest in vocational guidance for schoolchildren. Their vocational guidance activity is an important factor in the formation of a professionally oriented and motivated group of students. In particular, the Association “IT Ukraine” unites leading companies in the field of information technology and aims to promote the development of technical education and human capital through the formation and support of regional IT clusters, trainings, conferences and open lectures. However, to date, their activities are still not widespread. Therefore, the share of students oriented in this way, although highly motivated, remains insignificant.

Various stakeholders are trying to influence the graduates’ choice of professional field to be related to the field of information technology. Due to differences in motivation and diversity of factors influencing the professional self-determination of students in the IT field, there is a significant variability among students in the level of awareness of their choice and vision of prospects for professional development in the chosen specialty.

Many years of experience in teaching specialized disciplines in IT specialties of higher educational institutions of II and IV degrees of accreditation testified to the under-average level of students' awareness of the essence, direction and expected learning outcomes of the chosen profession. At the same time, the percentage of students who could confidently determine for
themselves their prospects for professional development during the period of study changed very slightly.

Aiming to study the problem of improving the quality and awareness of IT training, it was decided to focus primarily on the issues of vocational guidance of college students, as they choose their future profession at a younger age and have much greater opportunities for further training. To achieve this goal, a survey of students studying in IT specialties in colleges from different regions of Ukraine was conducted. 260 students responded to the call to answer the questionnaires (29 (11.2%) – 1st year; 76 (29.2%) – 2nd year; 85 (32.7%) – 3rd year; 70 (26.9%) – 4th year).

Students were asked to answer three groups of questions that were designed to establish:

- the level of awareness of the direction and objectives of the chosen specialty;
- motivation to continue the education in the chosen specialty in higher educational establishments of the III or IV levels of accreditation;
- the volume and direction of career guidance work on the chosen specialty.

According to the survey, only 12.8% of respondents named computer science teachers as motivators for choosing an IT specialty, which correlates with the research of N. Ponomareva (Ponomarova, 2019) on the low level of involvement of computer science teachers to vocational guidance of students. Instead, the main factors were: long-term interest in computer equipment and software (72.8%), attractiveness of high salaries in the IT industry (29.9%). This result shows a fairly low level of vocational guidance in secondary educational establishments, as well as dominance of social factors and personal motivation as a guide, when choosing a specialty.

The survey showed that choosing an IT specialty does not mean an adequate level of awareness about the content and direction of the curriculum (27.2% – have a high level of awareness, 63.3% – medium). Also, only 16.4% of students rated highly the curriculum in their specialty, 32% – good and 36.4% – satisfactory. This correlation indicates a high level of expectations from training in the chosen specialty, which is supported by a lack of awareness of the requirements for IT professionals. This has its consequences: students have doubts about the correctness of the choice of future profession, the efficiency and quality of training reduces, the necessary competencies are not properly formed.

Another aspect that determines the potential direction of vocational guidance activity is the desire to continue the education in the chosen specialty in higher educational establishments of the III or IV levels of accreditation. According to the survey, only 68.6% of college students plan to continue their education in their current specialty. At the same time, the percentage of such students decreases from 84% (the first year students), to 56% (the fourth year students). Students identify four main reasons for this decision: planning to start to work in the specialty they have trained in (30.1%); planning to start to work in the related specialty (21.7%); planning to start to work in the specialty, that
has nothing to do with IT (19.3%); planning to continue education in related IT specialty (13.3%). The interpretation of this distribution is quite complex and requires more careful study that goes beyond this article. However, it illustrates the peculiarity of the IT industry, which provides for the separation of several specializations within one specialty, which may differ significantly in their direction and required competencies. It also opens another area of career guidance work.

Based on the above features of the worldview of students and the level of their professional consciousness, we can identify priority tasks of career guidance, which should be addressed in the training of IT specialists. In particular:

1. Development of students' awareness of the content, direction and expected results of both the entire course of study and its individual parts. As the experience of communication with students shows, most of them, having chosen a specialty in the field of information technology, are not fully aware of the path they will have to take. While choosing the profession, they rely on media propaganda and not always correct public ideas about the functioning of the IT sector. Students aim at rapid visible results. If they cannot be achieved, they quickly begin to lose motivation to learn. The solution of this problem has to be based on the implementation of a purposeful career guidance strategy of the educational institution, which should be complemented by the actions of teachers.

2. Improving student orientation in current trends in the IT industry. The IT sphere is the most dynamic sphere of professional activity, which can radically change in 4 years of a student’s education in a higher educational establishment. The need to train highly qualified specialists capable of working in modern conditions creates the need for periodic review of priorities and areas of professional development of students, updating of educational material and teaching methods. The most common method of solving this problem is to hold regular meetings with specialists in the chosen IT field (including graduates of previous years); to involve senior students in the implementation of complex projects on applied topics, participation in conferences on IT, etc.

3. Substantiation, adjustment and coordination of competences that the student must develop in accordance with the requirements of the IT industry. The concepts of competences and program learning outcomes are included in the pedagogical lexicon. Nevertheless, experience shows that most teachers do not voice these criteria when teaching their subjects. As a result, instead of specifying a goal and further helping to achieve it, students are guided through the learning period in small steps. Another important problem is that most program competencies are described “out of discipline” and do not correspond to those demanded by the market and the employer. Elimination of such contradictions is possible by holding meetings with business leaders and recruiters in the IT field, wide involvement of students in the implementation of job-training and organization of their internships.
The performing of these tasks will ensure the maintenance of a high level of motivation to study academic disciplines and the implementation of personal and professional development.

It is also important to understand that the implementation of vocational guidance activities should not be an end in itself. It must meet the needs of students, meet their interests and relate to the existing professional level. On the other hand, the absence (or minimum number) of such measures will not allow to actualize the professional qualities of the student and reduce his competitiveness in the labor market. In the survey, only 56% of students indicated that vocational guidance activities were conducted with them. Of this number, only 46% of respondents attended meetings with IT specialists and 40% of respondents took part in seminars to discuss innovations in the IT sector. This once again testifies to the low level of solving the issues of organization of career guidance work among students of higher educational establishments.

Conclusions and prospects for further research. Vocational guidance activity in higher educational establishments in its content, nature and direction differs significantly from that which is carried out in secondary schools. The basis of this difference is both the difference in the motivation and worldviews of students, and the objectives of educational establishments. Carrying out of vocational guidance activities is called not only to improve the awareness of a student of the chosen profession, but also to increase his motivation to study. From the pedagogical point of view, vocational guidance of students of higher educational establishments should be called: to simplify the student's choice of specialization, to allow to concentrate on the development of necessary profile competencies, to improve adaptation to real labor market conditions in the IT industry.

REFERENCES


СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

ПРОФОРІЄНТАЦІЙНА РОБОТА СЕРЕД СТУДЕНТІВ КОЛЕДЖІВ, ЩО НАВЧАЮТЬСЯ НА ІТ-СПЕЦІАЛЬНОСТЯХ

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Анотація. Стаття спрямована на встановлення особливостей організації та проведення профорієнтаційної діяльності серед студентів закладів вищої освіти II рівня акредитації, що навчаються на ІТ-спеціальностях. Проведений аналіз вітчизняної педагогічної наукової та методичної літератури засвідчив, що наукова думка здебільшого зорієнтована на проблематику здійснення професійної орієнтації учнів закладів середньої освіти. Реалізація ж наявного теоретичного доробку по відношенню до ІТ-сфери на практиці залишається на доволі низькому рівні. Як наслідок на професійний вибір учнів мають переважний вплив непедагогічні чинники: суспільна дума, уявлення про професію сформовані ЗМІ та телебаченням тощо. Відповідно виділяються
пріоритетні завдання професійної орієнтації, які повинні вирішуватись в процесі підготовки спеціалістів ІТ-спеціальностей.

У процесі дослідження здійснено анкетування студентів ІТ-спеціальностей коледжів України, яке дозволило окреслити мотиваційний портрет середньостатистичного студента в розрізі динаміки його зміни в процесі навчання. Виявлено середній рівень усвідомленості вибору фаху. Відмічено відсутність чітко-окресленого бачення перспектив подальшого особистого професійного розвитку в галузі інформаційних технологій та бажання продовжувати навчатись за обраною спеціальністю у закладах вищої освіти III чи IV рівнів акредитації. Встановлено, що рівень усвідомленості перспектив в ІТ-сфері обумовлений як варіативністю вихідних мотивацій вступу в коледж на обрану спеціальність, так і особливостями ІТ-сфери.

Отримані дані дозволили сформулювати та обґрунтувати основні засади профорієнтаційної роботи серед студентів коледжів та завдання, які доцільно виконати для її удосконалення і загальної оптимізації. Обґрунтовано механізми профорієнтаційної роботи, зорієнтовані на виховання кваліфікованого спеціаліста ІТ-сфери з високим рівнем мотивації до саморозвитку. Окремо відмічено необхідність нарошення зусиль на формування свідомого компетентного вибору спеціалізації в межах обраної ІТ-спеціальності для ефективнішого розвитку професійних навиків. Додатково розкрито вплив особливостей академічних груп та індивідуальних характеристик студентів на фактори застосування профорієнтаційних заходів.

Ключові слова: професійна орієнтація, завдання профорієнтації, ІТ-спеціальність, коледж, професійна діяльність викладача.

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