

Formation of Students' Competence of Tertiary Educational Institutions by Practical Training Aids

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Abstract

The purpose of the scientific article is aimed at studying the features of students' competence formation at tertiary educational institutions by practical training aids. To reveal the purpose of a scientific article, methods of theoretical analysis and synthesis have been used (to study the theoretical framework of students' competence formation at tertiary educational institutions by practical training aids) and methods of comparison, grouping and concretization (to analyze and assess the practical results of students' competence formation at tertiary educational institutions by practical training aids). The practical results of the study are presented through: the results of assessing students' knowledge of Mathematics, Reading and Science, according to the PISA program; dynamics and structure of the number of students enrolled in tertiary education; the proportion of undergraduate students in% of the population at the age of 20-24 years old. According to the results of the PISA program, developed by the Organization for Economic Cooperation and Development (OECD), it has been found that Austria, Belgium and Germany have the highest average scores in Mathematics, Reading and Science, compared to the average scores in OECD countries. It has been established that in Ukraine the average students' score in Mathematics in 2018 is lower than the average score in OECD countries by 21 points, in Reading - by 36 points, and in Science - by 20 points. In the course of the study it has been established that currently educators use the following practical training aids for the formation of students' competence in the learning process, namely: introduction of a modular academic program in the educational process, providing the necessary level of theoretical basis, implementation of introductory, educational, training, undergraduate practices, work experience internship in the educational process of students' training, application of information, innovation and interactive technologies in the educational process, teaching and training of students in accordance with the requirements of the labor market and employers, ensuring cooperation between tertiary educational institutions in the framework of student exchange programs.

Keywords: competence, professional training, specialization, tertiary educational institutions, practical training aids

1. Introduction

Professional and vocational training of students to a large extent depends not only on the teaching methods, developed and implemented nowadays by tertiary educational institutions, but also on practical methods of students' training (in particular, it is mostly the participation of students in laboratory and practical workshops). However, as studies have revealed, no less important is the practical training of students, which centers around enhancing cognitive activity and encouraging the acquisition of new knowledge in the context of practical activities in companies. On the one hand, the internship in companies makes it possible to prepare students for further

professional activity, and on the other hand – it will contribute to the formation of professional skills and abilities that are an important basis for the formation of students' competences.

The scientific literature studies the issue of the gap between theoretical knowledge and practical experience: students receive little practical training. As a result, the formation of competences in solving certain problems in practice is hindered (Stites, Clapp, Gallagher & Fiester, 2018). Specialists with more than 1 year of experience do not consider themselves competent. Most specialists consider training to be limited in all areas of study. Consequently, they need additional training (Chua & Gorgon, 2019).

Taking this into consideration, it should be noted that the introduction of means of practical training by teachers into the educational process not only increases the level of mastering the initial professional experience, but also provides their professional training in accordance with market requirements and potential employers' needs.

Thus, the study of the formation features of students' competence of tertiary educational institutions by practical training aids determines the relevance of the subject matter of this scientific article. The purpose of the academic paper is aimed at studying the features of students' competence formation at tertiary educational institutions by practical training aids.

2. Literature Review

The subject matter of the theoretical foundations of students' competence formation at tertiary educational institutions by practical training aids has been revealed in numerous scientific works and achievements of leading Ukrainian and foreign scientists-educators.

For instance, Zhanguzhinova (2017) in the dissertation "Formation of professional competence of students - future teachers of vocational training in the system of higher education in Kazakhstan" has established that students' professional competence is formed through vocational training, self-education and qualification. The scholar has also noted that an important place in the process of students' competence formation is occupied by the student's competency formation model, a modular academic program, which includes the educational process, the organization of training process, the interaction of teachers with students and students with potential employers.

An investigation of Klug, Lüftenegger, Bergsmann, Spiel and Schober (2016), which was aimed at examining students' competences in Austria, has revealed that students in Austria are guided by self-regulatory strategies in the learning process, and which, according to students' views, are applied quite often.

Lisichko, Postnikova and Tverdokhlebov (2012), in the process of studying key aspects of the formation of students' professional competence state that students' professional competence depends on the level of representation of the theoretical base, the level of formation of students' professional skills and the level of students' motivation to carry out their professional activities.

Concurrently, Shevchuk and Sideljnyk (2017) in the scientific paper "Practical training of students of tertiary educational institutions as an integral determinant of the formation of their professional competences" argue that the practical training of students is an important factor in the formation of their professional competence. Drawing on experience of implementing practical training of students at tertiary educational institutions, scientists concretize the following types of students' practical training:

- 1) introductory training, which students undergo in the first, second and third courses in order to gain basic experience at enterprises and establishments and the ability to assess the cycle of economic processes, as well as to get acquainted with allied professions;
- 2) academic training that students undergo in the third and fourth courses in order to study the features of the organization of accounting and reporting, accounting of banking transactions, the specifics of the financial, stock and insurance markets, gaining practical experience in customer service;
- 3) work experience internship that students undergo to gain practical knowledge, skills and abilities to perform the functions of the chosen specialization;
- 4) undergraduate training that students undergo to summarize the knowledge, skills and abilities acquired in the learning process, as well as practical experience.

Borysenko (2012), on the basis of his own investigations, presented in the research article "Tools of formation of professional competence of socially mobile personality", highlights a number of practical training aids of students, which primarily affect the formation of professional competence of a student as a personality. Therefore, from the point of view of scientist, the following aids include: 1) the formation of the student's professional orientation by

exploring information about the specialists' demand in the labor market; 2) the second higher basic education, which makes it possible to get more employment opportunities in the future; 3) professional and practical training of the student; 4) application of information technologies and innovative methods in the educational process; 5) development of creative and intellectual potential of the student.

Koval and Masliuk (2018) in the investigation "The practical training of students-philologists in the process of professional competence forming" have considered the issue of students' practical training at tertiary educational institutions (TEI) in the context of the formation of their professional competence. According to the results of the investigations conducted, scientists have come to the conclusion that the process of forming students' competence is influenced by such aids as: presentation of clear and specific information in professional disciplines, implementation of the educational process through effective training methods and forms; application of interactive technologies, etc. Taking this into consideration, the scholars note the following competences that are gained by the students while studying at TEI: intellectual, cognitive, informational, linguistic, foreign-language, linguo-didactic, linguo and cross-cultural, conversational, literary, interactive and methodological. At the same time, in the process of scientific, research and investigation activities, students gain a number of the following competencies: communicative, technological, person-centered and motivational, special, research and investigation, social, ideological and ideologically-holistic.

At the same time, Gritchenko (2014) in the investigation "Formation of Practical Activity Competence of Future Professionals at Higher Educational Establishments of Ukraine and Germany" has examined the peculiarities of students' competence formation at tertiary educational institutions in Ukraine and Germany; the scholar has found that students' competence is formed under the influence of material and technical base, personnel policy of TEI, development of Internet technologies and their introduction into the educational process, involvement of students in educational and research activities by creating a favorable educational environment. In addition, the scientist notes that in the context of the formation of students' professional competence, the educators are required to conduct trainings, provide an appropriate level of methodological support, as well as the opportunity to receive education online. Such actions increase students' motivation to study, improve the level of their knowledge, skills and abilities, and this is a direct indicator of students' competence formation.

Moreover, Glaesser (2019) in research article "Competence in educational theory and practice: a critical discussion" has studied the issue of competence in educational theory and practice and has concluded that competence in interaction with standards has a significant impact on the education system of Germany.

Fahrudinova, Yarmakeev and Fakhutdinov (2014) in the investigation "The Formation of Students' Foreign Language Communicative Competence during the Learning Process of the English Language through Interactive Learning Technologies (The Study on the Basis of Kazan Federal University)" emphasize the importance of interactive learning implementation on the basis of use of interactive technologies in the process of forming students' communicative competence. From the perspective of scientists, the introduction of interactive learning in the educational process will provide comprehensive communication between the teacher and students and students among themselves, and it will also promote gaining skills by students - future specialists in order to solve their tasks in the future.

Khuziakhmetov (2016) in his own study "Social Competence Formation of Students In the Process of Students Self-Government" considers the issue of social competence formation of students while studying at tertiary educational institutions. The scholar contends that the acquisition of social competence by students will make it possible:

- 1) to develop the level of students' social thinking, including increasing the level of social intelligence and expanding the social worldview;
- 2) to gain social experience and develop further as a personality (individual).

Yusof and Fazillah (2013) in the study "Students' Performance in Practical Training: Academicians Evaluation" emphasize that an important role in the process of acquiring a high level of knowledge by students is the appropriate level of practical training offered by curricula of tertiary educational institutions. The level of knowledge acquired by students according to practical training curricula is assessed not only by teachers but also by potential employers. Herewith, the criterion aspects of the assessing process of the students' practical training are as follows: 1) the quality of activities; 2) dedication of students to the activity; 3) communication skills of students; 4) understanding of activities by students; 5) the efforts that students make to the process of mastering the profession; 6) technical skills of students; 7) students' confidence in their own abilities and knowledge.

Katajavuori, Lindblom-Ylänne and Hirvonen (2006) in the scientific article “The Significance of Practical Training in Linking Theoretical Studies with Practice” state that an important component of the educational process is the practical training of students. In addition, researchers have conducted a survey of students of pharmacy direction in order to determine the understanding of how much practical training of students contributes to the development of theoretical knowledge and motivates them to study. The results of the survey conducted have showed that students should pay more attention to their reflective skills, in particular in the context of acquiring theoretical knowledge. This, in turn, will encourage the development of reflective skills in students.

Balaban, Balaban and Ivanov (2015) in the investigation “Practical training as an important component of the educational process” state that the process of organizing practical training of students is quite complex and takes into account such aspects as finding and selecting bases for practice, availability and proper condition of software, etc.

In addition, the team of scientists in the research article “Monitoring the physical condition of 13-year-old school children during the process of physical education” consider the features of physical development of schoolchildren. According to research conducted, they have come to conclusion that currently “the statistically average result of the level of physical health in girls and boys corresponds to the average level” (Galan et al., 2018).

3. Data and Methods

The study has used Eurostat and OECD data to compare students’ knowledge after practical training at tertiary educational institutions for 2012-2018. The time frame of the study has been chosen, taking into account the availability of data for the countries selected in order to analyze and compare these data with each other.

In order to achieve the goals set in the article, the following research methods have been used:

– methods of theoretical analysis and synthesis for studying the theoretical foundations of students’ competenceformation at tertiary educational institutions by practical training aids;

– methods of comparison, grouping and concretization for analysis and assessment of practical results of students’ competence formation at tertiary educational institutions by practical training aids, which are reflected through:

1) results of assessment of students’ knowledge in Mathematics, Reading and Science according to the PISA program;

2) dynamics and structure of the number of students, enrolled in tertiary education in 2015-2018 (number of students, persons enrolled; proportion in the structure in EU countries,%);

3) the proportion of undergraduate students in % of the population at the age of 20-24 years old.

The following countries have been selected for analysis due to the significant differences in the practice of forming the competences of students of TEI, namely: Austria, Germany, Belgium, and Luxembourg. Statistical indicators of Ukraine as a developing country have been given for comparison. In order to compare the results and determine the level of quality, fairness and efficiency of educational systems in some EU countries, the data of the PISA program for 2012, 2015 and 2018 have been used in the academic paper. Average values for Austria, Belgium, Luxembourg, and Germany, Ukraine and OECD countries have been used. The following indicators have been also presented, namely:

1. The proportion of low academic performance (Below Level 2).

2. The proportion of the highest academic performance (Level 5 or 6).

The study of the practice of forming competences on the basis of the following universities has been carried out, namely: the Vienna University of Technology (Technische Universität Wien) (Austria), Ghent University (Universiteit Gent) (Belgium), the Osnabruck University (Fachhochschule Osnabrück) (Germany).

4. Results

Article 51 of the Law of Ukraine “On Higher Education” states that students, obtaining higher education at tertiary educational institutions in Ukraine, undergo internships in institutions, enterprises and / or organizations in accordance with concluded agreements between tertiary educational institutions and structural units of institutions, enterprises and / or organizations (Verkhovna Rada of Ukraine, 2020).

In Austria, for example, students of a medical institution of tertiary education undergo practical training during a clinical practice year. Thus, at the Medical University of Vienna during the clinical practice year, students acquire practical skills at the departments of university clinics of this educational institution, as well as in accredited educational hospitals. The whole process of acquiring practical skills by students - future physicians is accompanied

by mentors who possess all aspects of intensive and clinical training. During the internship, students should not only deepen their knowledge and skills, but also receive certain medical viewpoints, that is, acquire the professional qualities necessary for further undergraduate training (Medizinische Universität Wien, n.d.).

In turn, Germany has a dual system of students' training, which offers students a number of programs (about 350 of which are officially approved) for obtaining practical skills. Thus, according to these programs, students gain practical skills three or more days a week in companies in which they plan to continue their professional activities in the future (Bundesministerium für Wirtschaft und Energie, n.d.).

For instance, at the Department of German as a Foreign Language Ruhr-Universität Bochum Wortmarke (n.d.) students receive practical training through participation in seminars and information events. Based on the results of practical training, students gain some teaching experience, and, as interns, get the opportunity to conduct classes (usually 2 times a week) for other students who have come to study in Germany in order to integrate them into language courses, provided by this institution of tertiary education.

It should also be noted that one of the important means of practical training of students in Belgium is an internship, that is, internship by students at the Ministerium der Deutschsprachigen Gemeinschaft Belgien. By participating in the work of the Ministerium der Deutschsprachigen Gemeinschaft Belgiens, students have the opportunity to improve their language skills, as the internship often takes place abroad (Ostbelgien, 2019).

In Luxembourg, the internship of students in well-known companies in this country is also quite common, in particular in CGI, Credit Agricole CIB, BNP Paribas, Baker and McKenzie. For example, currently in Luxembourg, students' internships are conducted by 191 company (Graduateland, n.d.).

All tertiary educational institutions (mostly universities) specializing in medicine, law, agriculture, architecture and engineering in Belgium focus on the practical training of students. Thus, in Belgium, the main essence of practical training of students is to adapt the student - the future specialist to be ready for work. At the same time, tertiary educational institutions in Belgium of the above mentioned directions conduct theoretical training of students mainly in the subject area (Just Landed, n.d.).

In the course of analysis and assessment of practical results of students' competence formation at tertiary educational institutions by practical training aids it is expedient to focus on students' success indicators. Thus, the Organization for Economic Cooperation and Development (OECD) has developed PISA program for international assessment of students. This program allows assessing key indicators of the educational systems of the countries around the world, namely: quality, fairness and level of effectiveness. The PISA program assesses the knowledge and skills of 15-year-old students in the fields of Mathematics, Reading and Science, which are aimed at solving real problems (OECD, n.d.).

In order to compare the results and determine the level of quality, fairness and efficiency of educational systems in some EU countries, the data of the PISA program for 2012, 2015 and 2018 have been used in the scientific article. The data are presented in Table 1.

Table 1. The results of assessing students' knowledge of Mathematics, Reading and Science, according to the PISA program

Years	Mathematics Mean score	Reading Mean score	Science Mean score	The proportion of low academic performance (Below Level 2)	The proportion of the highest academic performance (Level 5 or 6)
OECD average					
2012	492	496	501	n.a.	n.a.
2015	493	493	490	13,0	15,3
2018	487	489	489	13,4	15,7
Austria					
2012	506	490	506	n.a.	n.a.
2015	495	485	497	13,5	16,2
2018	484	499	490	13,5	15,7
Belgium					
2012	515	509	505	n.a.	n.a.
2015	502	499	507	12,7	19,7
2018	493	508	499	12,5	19,4

Luxembourg						
2012	490	488	491	n.a.	n.a.	
2015	483	481	486	17,0	14,1	
2018	470	483	477	17,4	14,4	
Germany						
2012	514	508	524	n.a.	n.a.	
2015	509	509	506	9,8	19,2	
2018	498	500	503	12,8	19,1	
Ukraine						
2012	n.a.	n.a.	n.a.	n.a.	n.a.	
2015	n.a.	n.a.	n.a.	n.a.	n.a.	
2018	466	453	469	17,5	7,5	

Source: OECD (n.d.)

According to the results, presented in the table, the highest indicators, exceeding the average values for OECD countries are revealed in Austria, Belgium and Germany, however, in Luxembourg, students' progress is slightly lower than the OECD average indicator. A tendentious decrease in the average Mathematics score of students during 2015 and 2018 was revealed in all German-speaking countries, in particular, it was significant in Austria and Belgium. On the other hand, the average score in OECD countries decreased by only 5 points. In contrast to Mathematics, the average score of Reading in 2018 and 2015 decreased at much lower rate. Thus, in Germany in 2018, compared to 2012, the decrease was 8 points, in Luxembourg - 5 points, and in Belgium - only 1 point. At the same time, in Austria in 2018, compared to 2012, the average score of Reading increased by as much as 9 points. As for the results of academic performance of students in Science, a downtrend also took place here - the rate of the average score of Science decreased in all German-speaking countries, and most of all in Germany - by 21 points.

A significant increase of the proportion of low academic performance among students in 2018 compared to 2015 took place in Germany (by as much as 3%). In Belgium, on the other hand, this proportion decreased slightly by 0,4%. The decrease of the proportion of low academic performance was also revealed on average in OECD countries (by 0,4%).

Regarding the proportion of the highest academic performance of students, the growth of this indicator in 2018, compared to 2015, occurred only in Belgium (by 0,3%), as well as on average in OECD countries (by 0,4%).

Concerning the results of Ukraine in the PISA program research, the information is submitted only for 2018. Compared with the average indicators of OECD countries, as well as with German-speaking countries, the indicator values of Ukraine are much lower. Thus, the average students' score of Mathematics in Ukraine in 2018 is lower than the average score in OECD countries by 21 points, score of Reading - by 36 points, and score of Science - by 20 points. Despite these results, the proportion of low academic performance in Ukraine in 2018 is only by 0,01% lower than in Luxembourg; at the same time, the proportion of students' high academic performance is twice or even lower than in German-speaking countries and in OECD countries.

The analysis of the students' dynamics, enrolled in tertiary education, in general, in EU member states, as well as in German-speaking countries, showed a tendentious increase of this indicator. Thus, in 2018 compared to 2015, the most significant increase in the number of students was revealed in Belgium, Luxembourg and Germany (by 2,09%, 2,09% and 4,80%, respectively); at the same time, growth in EU member states was only by 1,65% (Table 2). For the matter of the proportion of students in the structure of the number of students in EU member states, a significant proportion both in 2015 and 2018 has been made up by students from Germany, where this proportion was increasing steadily during 2016-2018. The increase in the proportion of students during 2016-2018 also took place in Belgium (except for 2017). On the other hand, the proportion of Luxembourg's students in the structure of the number of students in EU member states is unchanged and it amounts 0,04% of the total number of students.

Table 2. Dynamics and structure of the number of students, enrolled in tertiary education

Region	2015		2016		2017		2018	
	number of students, persons	proportion in the structure in EU countries, %	number of students, persons	proportion in the structure in EU countries, %	number of students, persons	proportion in the structure in EU countries, %	number of students, persons	proportion in the structure in EU countries, %
In total, in EU countries (27 countries)	17213655	100,00	17196200	100,00	17341352	100,00	17502045	100,00
Austria	425972	2,47	431125	2,51	430370	2,48	430195	2,46
Belgium	504745	2,93	508270	2,96	503261	2,90	515530	2,95
Luxembourg	6896	0,04	6954	0,04	7058	0,04	7043	0,04
Germany	2977781	17,30	3043084	17,70	3091694	17,83	3127927	17,87

Source: Eurostat (2018a)

For the matter of the position of students among the population, it is necessary to analyze the dynamics of changes in the number of students in percentage points towards the population aged 20-24 years. Thus, the highest level of students, receiving higher education, among the population aged 20-24 is revealed in Belgium, where in 2017 there was also an increase of this indicator by 0,5% (Figure 1). The proportion of students at the age of 20-24 is almost at the same level in Germany and Austria. However, in Luxembourg, the proportion of students of the population at the age of 20-24 years old among German-speaking countries is the lowest and in 2017, compared to 2015, it decreased by 0,4%.

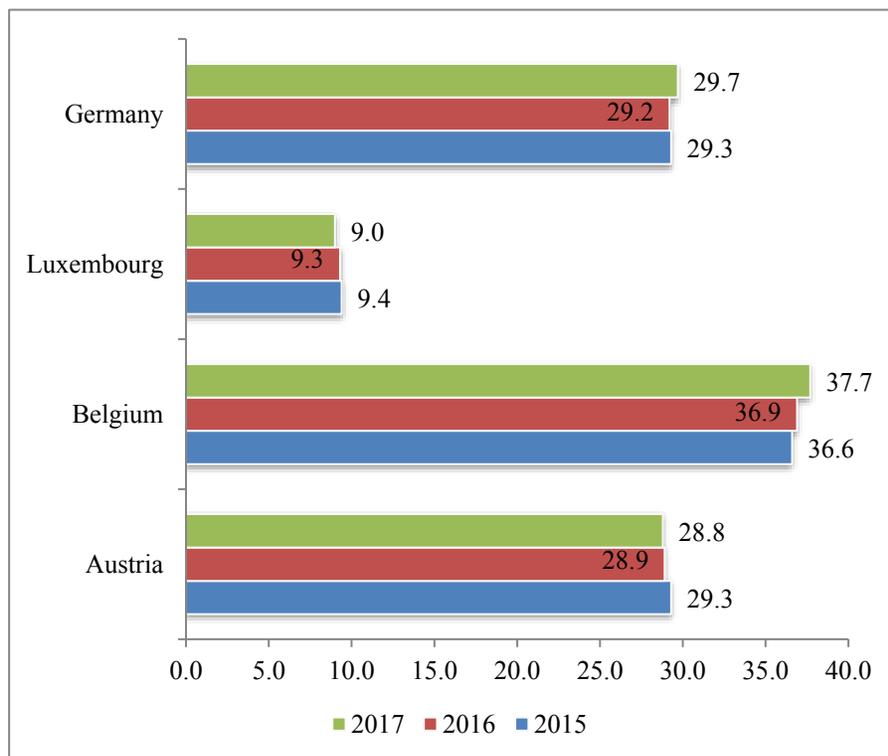


Figure 1. Proportion of students receiving tertiary education in % of the population at the age of 20-24 years old
Source: Eurostat (2018b)

In the course of the study it has been established that one of high-priority tasks of each institution of tertiary education is the formation of students' competence. For instance, the Vienna University of Technology (Technische Universität Wien) (Austria) clearly provides a description of the competence of future graduates. Whereas the specifics of the functioning of this university is aimed at the chemical sphere, future graduates, in the process of acquiring professional competence, will be able to compare and evaluate various chemical processes. At the same time, the skills of future graduates, described by the Vienna University of Technology, are also useful information for employers.

In turn, at the Ghent University (Universiteit Gent) (Belgium), which also majors in the chemical training areas, future graduates gain knowledge and skills to conduct various laboratory studies of a chemical nature, using a number of modern tools.

In addition, training at the Osnabruck University (Fachhochschule Osnabrück) (Germany) is carried out in the direction of business research. Herewith, the professional competence of future graduates lies in their ability to conduct template research, work on a wide range of tasks, think critically, and develop their own consciousness (NARIC, 2007).

5. Discussion

The study of advanced pedagogical experience has shown a wide range of investigations in the system of development and students' competence formation at tertiary educational institutions. In the course of the study it has been established that the formation of students' competence is carried out under the influence of numerous factors and conditions, among which the practical training aids occupy a decisive place. Experience has shown that the introduction of practical training aids by teachers in the educational process will increase the professional training of students in accordance with the requirements of the market and potential employers.

In the course of the investigation conducted, it has been found that in Ukraine, students, obtaining higher education at tertiary educational institutions, undergo internships in institutions, enterprises and / or organizations in accordance with the agreements between tertiary educational institutions and structural units of institutions, enterprises and / or organizations. In Austria, for example, students of a medical institution of tertiary education undergo practical training during a clinical practice year, where they acquire practical skills at the departments of university clinics, as well as in accredited educational hospitals. The whole process of acquiring practical skills by students – future physicians is accompanied by mentors who possess all aspects of intensive and clinical training. In Germany, a dual system of professional training of students is in effect, according to which students are offered a number of curricula for practical skills, including programs where students three or more days a week gain practical skills in companies, where they plan to continue their professional activities. One of the important means of practical training of students in Belgium is an internship, that is, internship by students at the Ministerium der Deutschsprachigen Gemeinschaft Belgiens. All tertiary educational institutions (mostly universities) specializing in medicine, law, agriculture, architecture and engineering in Belgium focus on the practical training of students. In Luxembourg, the internship of students in well-known companies in this country is also quite common, in particular, in CGI, Credit Agricole CIB, BNP Paribas, Baker and McKenzie.

Analysis and assessment of practical results of students' competence formation at tertiary educational institutions by practical training aids have demonstrated a number of trends. So, for instance, the processing of the results of the PISA program developed by the Organization for Economic Cooperation and Development (OECD) has revealed the highest average scores in Mathematics, Reading and Science in Austria, Belgium and Germany, compared to the average score of other OECD countries. It has been found that the average students' score in Mathematics in Ukraine in 2018 is lower than the average score in OECD countries by 21 points, in Reading - by 36 points, and in Science - by 20 points.

In the course of dynamics investigation of students, enrolled in tertiary education, in general, it has been established a tendentious increase of this indicator in EU member states, as well as in German-speaking countries. Thus, in 2018 compared to 2015, the number of students in Belgium, Luxembourg and Germany increased significantly (by 2,09%, 2,09% and 4,80%, respectively), while at the same time, the growth in EU member states was only by 1,65%.

An analysis of the dynamics of changes in the number of students in percentage points towards the population aged 20-24 years in German-speaking countries has showed a high level of students, receiving higher education, among the population aged 20-24 in Belgium.

6. Conclusion

Therefore, according to the results of studying the theoretical foundations of students' competence formation at tertiary educational institutions by practical training aids, as well as in the context of analysis and assessment of practical results of students' competence formation at tertiary educational institutions by practical training aids, it has been established that currently the educators use the following practical training aids to form students' competence in the learning process, namely: introduction of a modular academic program in the educational process, providing the necessary level of theoretical basis, introduction of introductory, educational, training, undergraduate practices, work experience internship in the educational process of students' training, application of information, innovation and interactive technologies in the educational process, teaching and training of students in accordance with the requirements of the labor market and employers, ensuring cooperation between tertiary educational institutions in the framework of student exchange programs.

It has been revealed that the professional competence of students depends on the level of presentation of the theoretical basis, the level of formation of professional skills of students and the level of motivation of students to carry out their professional activities.

It has been proven that important means of practical training of students, which also significantly affect the formation of professional competence of students, are as follows: the formation of professional orientation of students by studying information about the demand for specialists in the labor market; the second tertiary basic education, which makes it possible to get more employment opportunities in the future; professional and practical training of the student; application of information technologies and innovative methods in the educational process; development of creative and intellectual potential of the student.

References

- Balaban, P. Ju., Balaban, M. P., & Ivanov, Ju. V. (2015). Practical training as an important component of the educational process. Materials of the XL international scientific and methodological conference: *Quality of higher education: Improving the content and organization of practical training of students* (pp. 399). Poltava, Ukraine: PUET.
- Borysenko, M. V. (2012). *Means of formation of professional competence and education of socially mobile personality*. Retrieved from https://osvita.ua/school/lessons_summary/upbring/33147/
- Bundesministerium für Wirtschaft und Energie. (n.d.). *Vocational training in Germany*. Retrieved from <https://www.hamburg.com/contentblob/11701416/38fc36e2fb59ec7acc222fef3b64a6d2/data/vocational-training-brochure.pdf>
- Chua, E. C. K., & Gorgon, E. J. R. (2019). Augmentative and alternative communication in the Philippines: A survey of speech-language pathologist competence, training, and practice. *Augmentative and Alternative Communication, 35*(2), 156-166. <https://doi.org/10.1080/07434618.2019.1576223>
- Eurostat. (2018a). *Students enrolled in tertiary education by education level, programme orientation, sex, type of institution and intensity of participation*. Retrieved from https://ec.europa.eu/eurostat/web/products-datasets/product?code=educ_uae_enrt01
- Eurostat. (2018b). *Students in tertiary education - as % of 20-24 years old in the population*. Retrieved from https://ec.europa.eu/eurostat/web/products-datasets/product?code=educ_uae_enrt08
- Fahrutdinova, R., Yarmakeev, I., & Fakhutdinov, R. (2014). The formation of students' foreign language communicative competence during the learning process of the English language through interactive learning technologies (The study on the basis of Kazan federal university). *English Language Teaching, 7*(12), 36-46. <https://doi.org/10.5539/elt.v7n12p36>
- Galan, Y., Yarmak, O., Kyselytsia, O., Paliichuk, Y., Moroz, O., & Tsybanyuk, O. (2018). Monitoring the physical condition of 13-year-old school children during the process of physical education. *Journal of Physical Education and Sport, 18*(2).
- Glaesser, J. (2019). Competence in educational theory and practice: A critical discussion. *Oxford Review of Education, 45*(1), 70-85. <https://doi.org/10.1080/03054985.2018.1493987>
- Graduateland. (n.d.). *Praktika in Luxemburg*. Retrieved from <https://graduateland.com/de/s/praktikum/luxemburg>

- Gritchenko, I. (2014). Formation of practical activity competence of future professionals in higher educational establishments of Ukraine and Germany. *Polish Journal of Surgery*, 4(4). <https://doi.org/10.1515/rpp-2015-0008>
- Just Landed. (n.d.). *How to get a university degree in Belgium*. Retrieved from <https://www.justlanded.com/deutsch/Belgien/Landesfuehrer/Bildung/Universitaeten>
- Katajavuori, N., Lindblom-Ylänne, S., & Hirvonen, J. (2006). The significance of practical training in linking theoretical studies with practice. *Higher Education*, 51, 439-464. <https://doi.org/10.1007/s10734-004-6391-8>
- Khuziakhmetov, A, N. (2016). Social competence formation of students in the process of students self-government. *Mathematics Education*, 11(4), 81-89.
- Klug, J., Lüftenegger, M., Bergsmann, E., Spiel, C., & Schober, B. (2016). Secondary school students' LLL competencies, and their relation with classroom structure and achievement. *Front Psychol*, 7(680). <https://doi.org/10.3389/fpsyg.2016.00680>
- Koval, V., & Masliuk, K. (2018). The practical training of students-philologists in the process of professional competence forming. *Filologichnyj chasopys*, 1(11), 152-162. <https://doi.org/10.31499/2415-8828.1.2018.142941>
- Lisichko, E., Postnikova, E., & Tverdokhlebov, S. (2012). Formation of professional competence of students in engineering education. *Creative Education*, 3(7), 104-106. <https://doi.org/10.4236/ce.2012.37B027>
- Medizinische Universität Wien. (n.d.). *Welcome to the clinical practice year (KPJ)*. Retrieved from <https://kpj.meduniwien.ac.at/>
- NARIC. (2007). *Competences in education and cross-border recognition*. Retrieved from <http://www.core-project.eu>
- OECD. (n.d.). *Programme for international student assessment*. Retrieved from <https://www.oecd.org/pisa/>
- Ostbelgien. (2019). *Fascinating look behind the scenes*. Retrieved from https://www.ostbelgienlive.be/desktopdefault.aspx/tabid-6261/10793_read-59042/
- Ruhr-Universität Bochum Wortmarke. (n.d.). *Departament German as a foreign language. Practical training DaF*. Retrieved from <http://www.daf.ruhr-uni-bochum.de/ueberuns/praktikum.html.en>
- Shevchuk, T. V., & Sideljnyk, O. P. (2017). Practical training of students of higher educational institutions as an integral determinant of the formation of their professional competencies. *Scientific Bulletin of UNFU. Economic Series*, 27(2), 189-193. <https://doi.org/10.15421/40270241>
- Stites, S. D., Clapp, J., Gallagher, S., & Fiester, A. (2018). Moving beyond the theoretical: Medical students' desire for practical, role-specific ethics training. *AJOB Empirical Bioethics*, 9(3), 154-163. <https://doi.org/10.1080/23294515.2018.1472149>
- Verkhovna Rada of Ukraine. (2020). *On Higher Education*. Retrieved from <https://zakon.rada.gov.ua/laws/show/1556-18#Text>
- Yusof, N., & Fazillah, S. (2013). Students' performance in practical training: Academicians evaluation. *Procedia-Social and Behavioral Sciences*, 93, 1275-1280. <https://doi.org/10.1016/j.sbspro.2013.10.028>
- Zhanguzhinova, M. (2017). *Formation of professional competence of students – future teachers of vocational training in the system of higher education in Kazakhstan*. Doctoral dissertation. Rezekne Academy of Technologies, Rezekne, Latvia. <https://doi.org/10.17770/sie2017vol1.2400>