ABSTRACT

The paper focuses on the process of internationalization of higher education in Germany as one of the factors that ensures international cooperation in education and science, strengthens competition in the global educational market, improves the quality of future professionals’ training. The study considers the specific features of joint degree programs for training Ph.D. students in German universities and reviews three main types of these programs, namely: a research project within a pre-defined research topic; previously developed schemes of academic cooperation; the program of obtaining a joint Ph.D. degree in universities of the doctoral student’s choice (which do not yet have a formal cooperation agreement). It was found that joint degree programs provide the prospective Doctors of Philosophy with the opportunity to conduct their doctoral studies in two universities. The training plan is developed jointly by two or more higher education or research institutions, so that doctoral students are enabled to conduct research based on several universities or research institutions, while receiving simultaneous scientific consulting from several experienced scientists. It was determined that these programs stimulate mobility and intercultural exchange, significantly increase the competitiveness of their graduates, promote greater transparency and alignment of curricula through mutual recognition of scientific degrees, as well as the establishment of close inter-academic contacts. Key institutions promoting and coordinating the development of the internationalization of higher education in Germany include the Federal Ministry of Education and Research (BMBF), the German Research Foundation (DFG), the German Rectors' Conference (HRK), the German Academic Exchange Service (DAAD), Alexander von Humboldt Foundation (AvH), and others.

Keywords: internationalization, higher education, universities, international mobility, joint Ph.D. programs, dual Ph.D. programs, Doctor of Philosophy, Germany.
АНОТАЦІЯ
Стаття присвячена вивченню процесу інтернаціоналізації вищої освіти в Німеччині як одному з чинників, що забезпечує міжнародне співробітництво в галузі освіти та науки, посилює конкуренцію на світовому освітньому ринку, підвищує якість підготовки майбутніх фахівців. У розвідці розглянуто особливості спільних ступеневих програм підготовки докторів філософії в німецьких університетах та їх три основні типи, а саме: дослідницький проєкт у межах попередньо визначеної дослідницької теми; попередньо створені схеми академічної співпраці; програма отримання ступеня доктора філософії в університетах за вибором докторанта, якщо ще не мають офіційної угоди. З'ясовано, що спільні ступеневі програми дають майбутнім докторам філософії можливість розподілити навчання в аспірантурі між двома університетами. План підготовки фахівців розробляється спільно двома або більшою кількістю закладів вищої освіти або дослідницьких установ, завдяки чому докторанти мають змогу проводити дослідження на базі декількох університетів чи дослідницьких закладів, отримувати наукову консультаційну підтримку одночасно у декількох дослідниках науковців. Визначено, що зазначені програми сприяють стабільній та міжкультурній обмін, значно підвищують конкурентоспроможність випускників, сприяють розвитку міжнародних та міжкультурних взаємодій, засновані на прийнятих вищих навчальних закладах. Конференція ректорів закладів вищої освіти Німеччини (HRK), Німецька служба академічних обмінів (DAAD), Фонд імені Александра фон Гумбольдта (AvH) та ін.
Ключові слова: інтернаціоналізація, вища освіта, університети, міжнародна мобільність, спільні ступеневі програми підготовки докторів філософії, доктор філософії, дуальні програми підготовки докторів філософії, Німеччина.

INTRODUCTION
The extraordinary dynamism of the modern world, the strengthening of the interdependence of national economies, varied intercultural interaction have all led to a large-scale process of internationalization and comprehensive integration of countries into the knowledge and innovation exchange. In the last few decades, internationalization has defined the vectors of higher education development around the world. Communiqué of 2009 World Conference on Higher Education: The New Dynamics of Higher Education and Research for Societal Change and Development emphasizes the need to develop international cooperation in higher education on the basis of solidarity and mutual respect by facilitating the transfer of knowledge between countries. The utmost goal for higher education is seen in strengthening partnerships at international levels to assure the quality and sustainability of higher education globally.

The internationalization of higher education is one of the factors that ensures international cooperation in the field of education, facilitates competition in the global education services market, improves the quality of training of future professionals. In most countries of the world, internationalization strategies are being developed at the national level, which, in addition to solving a substantial number of problems in the field of economics, culture and politics, should contribute to further development of university...
education. One of the EU countries that pays considerable attention to this issue is Germany. In our opinion, studying the best experience of this country will promote a better understanding of the essence, potential, as well as the impact of internationalization on the development of higher education system in Ukraine.

**THE AIM OF THE STUDY**

The aim of the study presented is to characterize the main features of joint Ph.D. programs in universities and research institutions of Germany as one of the effective tools for the internationalization of higher education, as well as to consider the activities of the key institutions that coordinate and promote this process.

**THEORETICAL FRAMEWORK AND RESEARCH METHODS**

The issues of internationalization of education ‘as a multifaceted and multidimensional phenomenon of modernity, which determines the level of development of each state in national and global contexts’ (Soloshchenko, 2011) have been covered by numerous scientific studies conducted by both Ukrainian and foreign researchers. The theoretical basis of our study is constituted by the scientific works of N. Avshenyuk (2010, 2013, 2015, 2017), M. Debych (2019), O. Ohienko (2012), L. Otroshchenko (2011), O. Patskevych (2018), A. Shakirova (2018), V. Soloshchenko (2011, 2017), etc. To achieve the set aim, the authors of the paper used a set of theoretical methods, such as the analysis of Ukrainian and foreign scientific sources as well as Internet resources on the research problem; systematization of the results of the theoretical analysis; generalization of the received information in the form of theoretical considerations concerning the specific features of internationalization of higher education in Germany.

**RESULTS**

Nowadays, Germany maintains a leading position in the world market of higher education services – universities of this country have high reputation not only in Europe but also worldwide; German higher education system, characterized by the harmonious combination of old university traditions and innovative methods of educational management, fundamental theoretical education and research activities, is fairly considered a generally accepted standard of training.

For a considerable time, Germany has been one of the world's favorite countries to study and pursue research activities. According to the 2021 study by the German Academic Exchange Service (German: Deutscher Akademischer Austauschdienst – DAAD) and the German Center for Higher Education Research and Science Studies (German: Deutsches Zentrum für Hochschul- und Wissenschaftsforschung – DZHW), in the winter semester of 2019/2020 the number of foreign students studying at German universities came up to 319,902 people. The number of foreign students who were obtaining a doctoral degree during the same period was 27,869, which is 8.7 % of the total number of foreign students, thus making the country one of the most favored research destinations.

The predominant number of international students come to Germany from China, India, Russia, Austria, Italy, France, Cameroon, Ukraine, Turkey and Bulgaria. Austria, the Netherlands, Switzerland, the United Kingdom, the United States, France, China, Sweden, Denmark, and Hungary are among the most popular countries in the world where German students pursue higher education (Debych, 2019).

Such a high level of demand for Germany among international students indicates the strengthening of the position of the country’s universities in the international market and a purposeful and comprehensive process of internationalization of higher education, which has been the object and subject of federal policy in the recent decades.
The directives of the Federal Ministry of Education and Research of Germany (German: Bundesministerium für Bildung und Forschung – BMBF), which were presented at the conference of rectors of higher educational institutions in Germany in 2008, covered three types of strategies for internationalization of higher education in the country: traditional (type A), casuistic (type B) and strategic or perspective (Type C). The strategic directions of internationalization of university education were also defined on this basis, namely: internationalization of university education within the Humboldtian model of university (any changes and innovations are denied, world processes of globalization, internationalization is completely ignored); internationalization of university education in the context of requirements of the Bologna process; internationalization of university education within its own innovative projects (Soloshchenko, 2017; Ohiienko, 2012).

According to the defined strategies of internationalization in the development of German higher education, researchers identify the following trends: orientation of the structure and content of curricula and programs on international perspectives; growth of initiative to support international projects; increasing number of students and young researchers mobility through study, internships and conducting research activities abroad; increasing opportunities for learning foreign languages; introduction of a national qualification framework (Otroshchenko, 2011).

One of the effective tools for internationalization and cooperation within the European Educational Area is joint Ph.D. programs (jointly supervised or jointly awarded Ph.D./doctorate, gemeinsame Promotion, binationales Promotionsverfahren, Cotutelle de thèse). An annual increase in the number of German universities offering joint Ph.D. programs is currently observed.

Joint Ph.D. is an innovative integrated program that offers unique opportunities for the best guidance of Ph.D. students in a pan-European context. The proposed programs provide the candidates with the opportunity to distribute doctoral studies between two prestigious universities. Such programs stimulate mobility and intercultural exchange, as well as increase the international competitiveness of Ph.Ds. Another objective of developing such programs is to promote greater transparency and align European curricula through mutual recognition of degrees.

In the frameworks of a joint Ph.D. program, the curriculum and research activities plan are developed jointly by two or more universities. This enables doctoral students to conduct research using the facilities and resources of several universities or research institutions and receive scientific consulting from several experienced scientists working in the compatible fields. As a result, such studies become interdisciplinary and stimulate the development of allied sciences, and in some cases even contribute to the formation of fundamentally new research directions.

It is also essential to note that in the case of a joint Ph.D., the degree of Doctor of Philosophy is awarded by two institutions simultaneously. Namely, this type of training does not mean that the doctoral student is merely supervised by one research advisor at one university and provided with informal consultations from another researcher at another university but assumes that a Ph.D. student is fully registered at two universities, has to comply with admission requirements and assessment rules in both institutions, and that this will lead to either two doctoral degrees (double Ph.D.) or one jointly obtained doctorate (one diploma with the logos of two universities – joint Ph.D.) (Avshenyuk, 2013). The reason why universities offer double degrees rather than joint degrees is often practical if, for instance, the law of one country does not allow awarding joint degrees. The very
The concept of obtaining a double Ph.D. degree, which is of French origin, provides for joint academic consulting or co-tutelle. This approach ensures the acquisition of an integrated educational and research experience that, from the outset, requires that the doctoral student be supervised by two experts and have access to both research environments for the benefit of the research itself.

There are three main types of joint Ph.D. programs that take different amount of time and effort to implement:

- Research projects within a pre-defined research topic (which is already being worked out jointly by the two universities);
- Pre-established schemes of academic cooperation (between 2 or more institutions) - co-tutelle agreements;
- Joint or double Ph.D. programs to be implemented by two universities that do not yet have a formal agreement.

Most frequently, joint Ph.D. programs are seen as a means of enhancing research collaboration between two universities, which often employ leading research experts in a particular field.

It should be stated that joint Ph.D. degrees, being the result of universities’ cooperation, are considered prestigious because doctoral students have access to communication with leading researchers in their field of their interest, which provides them with fantastic opportunities and distinguishes them from other researchers, making more competitive. Other obvious advantages are the following:

- access to additional research facilities and resources of different countries;
- gaining experience in using two culturally different approaches to conducting research;
- experience of participation in international academic mobility;
- formation of social skills and competencies, such as negotiation skills, usage of video conferencing, adaptability etc.;
- the possibility of creating additional international networking opportunities for future research prospects.

Although obtaining a joint Ph.D. is a very specialized type of research activity, such programs are undoubtedly beneficial in the case of comparative research, research projects that require the use of equipment or resources available at foreign universities, and when it is required to involve local industrial or public sector of a foreign country.

University administrations look for cooperation with other institutions, which are equal or expert, to teach and conduct research jointly, so they are willing to enter formal agreements. It is, however, regrettable that such joint programs are not always supported with centralized budgetary sources. Currently, within Germany, joint Ph.D. programs are funded by the German Research Foundation (German: Deutsche Forschungsgemeinschaft – DFG) and the German Academic Exchange Service (German: Deutscher Akademischer Austauschdienst – DAAD).

The DAAD brings together all German higher education institutions and promotes international cooperation through the exchange of researchers. The main functions of this organization include: attracting foreign young scientific elite to study and conducting research in Germany; organizing advanced training for German young researchers; providing assistance for growing economies and Eastern European reformer countries in building structures at the third level of higher education, as well as supporting research in
the field of the German language, literature and regional studies in higher education institutions of other countries (Shakirova, 2018).

The German Research Foundation (DFG) supports and coordinates research programs of German research institutions, promotes international cooperation of scientists, internationalization of German higher education institutions, as well as consults parliaments and non-governmental organizations on science and research activities (Satzung der Deutschen Forschungsgemeinschaft, 2019).

In addition to the above-mentioned organizations, the process of internationalization of higher education in Germany is financially supported by the Federal Ministry of Education and Research (German: Bundesministerium für Bildung und Forschung – BMBF), the German Rectors’ Conference (German: Hochschulrektorenkonferenz – HRK) and the Alexander von Humboldt Foundation (German: Alexander von Humboldt-Stiftung – AvH).

Thus, the Federal Ministry of Education and Research of Germany promotes the internationalization of higher education through exchange programs for students, young researchers ("studieren weltweit - ERLEBE ES!", "Programm zur Steigerung der Mobilität von deutschen Studierenden" (PROMOS), ERASMUS-Programm, Fulbright-Kommission, etc.), bilateral initiatives that fund mobility programs, as well as doctoral and research programs. Accordingly, within the framework of intergovernmental agreements, the Franco-German University (German: Deutsch-Französische Hochschule – DFH) was established, whose activities are aimed at strengthening cooperation between France and Germany in the field of higher education and research. Today, the German Federal Government also funds 22 projects for German universities abroad, including the German University in Cairo (GUC), the German Jordanian University (GJU) and others (Internationalisierung der Hochschulen, 2021).

The German Rectors’ Conference (HRK) serves as a platform for the process of forming general policies of universities and methods of their implementation. As part of the HRK-EXPERTISE Internationalisierung project, which is aimed at support of German universities in creating the necessary conditions for successful internationalization, HRK helps universities to work out and further develop internationalization strategies, to identify and disseminate best practices, exchange knowledge and experiences, and to cooperate within the entire university system (Hochschulrektorenkonferenz. Aufgaben und Struktur, 2021).

The purpose of the Alexander von Humboldt Foundation (AvH) is to promote science and research, build intercultural understanding by awarding scientific scholarships and grants to highly qualified foreign researchers for conducting research in Germany, and take other measures to enhance international scientific cooperation and encourage scientific contacts and support (Stiftungssatzung der Alexander von Humboldt-Stiftung, 2017). For instance, Humboldt Research Fellowship (Humboldt-Forschungsstipendium) allows young foreign researchers to conduct long-term research (6-24 months) in Germany. A prerequisite for receiving such a scholarship is the availability of academic publications (Patsukevich, 2018, p. 167).

The foundations mentioned are the largest funding groups, while there are many other groups and organizations that support individual researchers and research projects, including: Fraunhofer Gesellschaft, The Helmholtz Association, The Leibniz Association, The Max Planck Society, StipendiumPlus, Academies of Sciences and Humanities, Robert Bosch Stiftung, The Volkswagen Foundation, The Deutsche Bundesstiftung Umwelt, The Klaus Tschira Stiftung, The German Foundation for Peace Research, The German Federation of Industrial Research Associations (AiF) and many others. In addition, with the
financial support from the Federal Ministry of Education and Research, the Consortium for International Marketing Research (CIMaR) was established to serve as global informal networking community of scholars working in the field of international marketing.

Another central marketing instrument, comprised in the Federal Government's internationalization strategy to promote Germany as favorable research and innovation hub, is the Research in Germany initiative that is aimed at sustainable introduction and maintenance of a positive, innovation-oriented image of Germany that is to be seen internationally as a destination for conducting research with different focal points and target groups. The Research in Germany initiative is supported by means of the German Academic Exchange Service (DAAD), the German Research Foundation (DFG), the Fraunhofer-Gesellschaft (FhG), the international campaigns of the Federal Ministry of Education and Research (BMBF) and the services offered by the German Centres for Research and Innovation (German: die Deutschen Wissenschafts- und Innovationshäuser – DWIH).

The Research in Germany web portal was also set up as a central platform for providing English-language information on research in Germany. The website is edited by the German Academic Exchange Service (DAAD) and provides regular information on the latest research options, career opportunities for researchers, funding programs and changes in the German research policy.

Besides, there are several programs in the European Union that offer scholarships for joint research, such as joint doctoral programs Erasmus Mundus, U21 Joint Ph.Ds. But it should be considered that most doctoral students who intend to undertake the joint Ph.D. program will have to compete with applicants for a "normal" degree, which is seen as more traditional and understandable by the vast majority of potential research advisers.

CONCLUSIONS

That way, the study presented in the paper makes it possible to conclude that due to the successful process of internationalization of higher education, which is given great attention to in Germany, the country maintains the leading position in the global education market. Germany is working hard to strengthen its position as a world center for higher education and research.

An important and effective tool for internationalization and cooperation within the European Educational Area in the field of training Doctors of Philosophy is joint Ph.D. programs (jointly-awarded Ph.D., Cotutelle de thèse), which provide candidates with the opportunity to distribute doctoral studies between two or more universities, thus allowing to conduct research using the resources and facilities of several universities or research institutions, receive scientific consulting support simultaneously from several experienced scientists. In addition, depending on the legal basis, graduates are awarded either one Ph.D. diploma, certified by two universities, or two separate diplomas from each university.

These programs stimulate mobility and intercultural exchange, significantly increase the competitiveness of their graduates, promote greater transparency and alignment of European curricula through mutual recognition of academic degrees, as well as the establishment of closer inter-academic contacts. The key sources of funding and advisory services for joint Ph.D. programs are the Federal Ministry of Education and Research (BMBF), the German Research Foundation (DFG), the German Rectors’ Conference (HRK), the German Academic Exchange Service (DAAD), Alexander von Humboldt Foundation (AvH) and others. Advisory services and opportunities provided by these organizations require further considerations and are the focus of our further research.
REFERENCES