

CHAPTER 1

GENERAL PEDAGOGY AND HISTORY OF PEDAGOGY

COMPARATIVE CHARACTERISTICS OF THE TRAINING OF DOCTORS OF PHILOSOPHY IN ECONOMICS IN THE LEADING COUNTRIES OF THE WORLD

Iryna Mihus¹, Nataliia Nakonechna²

¹Doctor of Science (Economics), Professor, Scientific Center of Innovative Researches, Tallinn, Estonia, "KROK" University, Kyiv, Ukraine, e-mail: irynamihus@gmail.com, ORCID: <https://orcid.org/0000-0001-6939-9097>

²Ph.D. (Psychology), Associate Professor, Associate Professor of the Psychology Department, KROK University, Kyiv, Ukraine, e-mail: natalyn@krok.edu.ua, ORCID: <https://orcid.org/0000-0001-6236-9549>

Abstract. The scientific training of Doctor of Philosophy is one of the indicators of the country's development and demonstrates the innovative progress of society. The purpose of the article is to compare the features of the training of Doctor of Philosophy in the leading countries of the world. The main methods that were used in the research are analysis and synthesis, methods of comparative analysis, generalization, which made it possible to achieve the set goal. The article examines the specifics of Training PhDs in Economics and systematizes the specifics of each country. In the article, a comparative analysis of the system of training economics specialists at the scientific level of doctoral studies in the USA, Canada, Japan, and EU countries is carried out. The main differences were established in such areas as: Program duration; Master's degree requirements; Research flexibility; Funding opportunities; Teaching expectations. It has been established that Universities in Australia, New Zealand and Canada typically follow the American PhD structure: two years of classes plus three years of independent research. A PhD experience there is comparable to the one in the US. Similar programs (in terms of organization) are offered by top Asian schools in Hong Kong, Singapore, and South Korea. In other parts of the world, where economics research capacities are less developed, doctoral studies take various forms, such as employment at the national academy of sciences.

Keywords: economics, Doctor of Philosophy, educational innovations, development, progress.

JEL Classification: A23, A29, I28

Formulas: 0; **fig.:** 1; **tabl.:** 0; **bibl.:** 10

Introduction. Human resources are the key to idea generation and dissemination. Doctoral students have a special attitude to research and innovation due to deep industry knowledge and continuous professional development in the field of quantitative and qualitative analytical skills necessary for practical application of knowledge. Doctoral programs exist in both academic and professional fields and usually require the submission of a thesis or equivalent written work that represents an original contribution to knowledge in the relevant field. As countries for comparing the organization of doctoral education, we will take such well-known leaders of innovative development as the USA, Canada, Japan and EU countries and analyze their systems of training specialists in economics at the doctoral scientific level. The system of training and certification of highly qualified scientific personnel in the USA is a kind of unique historical phenomenon that combines the educational philosophy of a

medieval university and new organizational forms adapted to an industrially developed capitalist society.

Literature review. Doctoral programs are the main form of training of highly qualified scientific and pedagogical personnel for higher education in the USA, the innovation complex and the administrative sector of the American economy. American doctoral education strives simultaneously to simplify and complicate its organization. At the same time, the education of doctoral students (they are called graduate students here) and the payment of scholarships are financed by universities, and the education of students until they receive bachelor's diplomas is paid. Doctoral training (graduate school), which culminates in the defense of a thesis and the awarding of the scientific degree of Doctor of Philosophy (Ph.D), is designed for an average of 3 years for masters and 5 years for bachelors. Doctoral study offers specialized training in relevant courses with passing qualifying exams, independent scientific development and mandatory defense of a doctoral dissertation.

The study of the specifics of Training PhDs in Economics was done in the works of Gregory M. Perry (1998). Hansen, W.L. (1991), Scott, F. (1997) and others. A comparison of the features of training PhDs in Economics in different countries of the world was presented in their works by: Sakhno, H (2022), Barnett J.V., Harris R.A., Mulvany M.J. (2017), Nerad M. and Heggelund M. (2008).

Unfortunately, many issues regarding the preparation of PhD programs in economic sciences are not covered in sufficient depth.

Aims. The purpose of the article is to compare the features of the training of doctors of philosophy in the leading countries of the world.

Methods. The main methods that were used in the research are analysis and synthesis, methods of comparative analysis, generalization, which made it possible to achieve the set goal.

Results. We will analyze the peculiarities of the training of doctors of philosophy in different countries of the world.

United States of America. In the USA, there is a special law "On the possibility of obtaining higher education", which determines that only higher educational institutions or consortia of such educational institutions can award scientific degrees of doctors in the relevant fields of science. It also defines the mutual obligations and rights of higher education institutions that conduct training under doctoral programs and relevant persons who undergo such training with the subsequent awarding of the scientific degree of Doctor of Sciences.

Doctoral programs in the USA are designed for an average of five years. Today, about 250 US universities award the degree of Doctor of Philosophy (PhD) or its equivalent. The very training of scientific and pedagogical personnel has become one of the leading criteria for determining the quality of academic work of American universities. Modern American doctoral education has a hybrid nature, which is manifested in the presence of two qualitatively different components - mandatory courses and independent research.

The main features of the American model of training doctors of philosophy:

- inertia and conservatism, which are especially intensified in case of radical changes in the surrounding socio-cultural environment;
- striving for specialization at the level of components (programs) and for universality, comprehensiveness at the institutional level (doctoral programs and universities);
- the emergence of institutes such as temporary research teams;
- the spread of "innovative", "non-traditional" doctoral programs that have the characteristics of a competitive institute.

Canada. The system of training scientific personnel in Canada is largely similar to that operating in the USA, with the exception of some features. Canadian universities are self-governing institutions that have the right to award academic degrees and determine the conditions for awarding them. At the doctoral educational level, higher educational institutions award the degrees of doctor of philosophy, professional doctor, combined doctoral-master's degree, as well as doctoral professional-philosophical degrees. Obtaining a doctoral degree in Canada involves conducting a unique study and defending a dissertation, which should make a significant contribution to the advancement of scientific knowledge in the researched field. The training of specialists at the highest educational level in Canada is carried out in higher education with the awarding of doctoral degrees of two types (doctor of philosophy and professional doctor), as well as within the framework of formalized post-doctoral education to occupy the positions of researchers and teachers in institutes, universities, as well as in production.

The entire education system of Canada is exclusively under the competence of the provinces - it is the provinces that set their standards in the field of education, regulate the relevant industry according to their legislative norms (in Canada, there is no Ministry of Education at the federal level). Canadian universities offer various programs for graduate students and, no less important, guarantee them full support, including financial support. Graduates of Canadian graduate schools who have received a master's or doctoral degree are extremely in demand, both in academic circles and on the international labor market.

An important aspect of the system of training scientific personnel in Canada is a special attitude towards postgraduate students: persons who have entered postgraduate studies and thus confirmed their high qualifications become partners of universities. As partners, they are more motivated to make a significant contribution to the scientific and practical activities of their universities. Such qualities of graduate students as inquisitiveness, independent thinking and the ability to generate fresh ideas (creativity) are especially valued. Post-graduate students possessing these qualities are "useful" to their educational institutions, since it is thanks to them that the majority of discoveries take place. Thus, Canadian graduate students who expect to receive a scientific degree should be motivated and interested in solving intellectual tasks, constantly contribute to the scientific activity of the university.

At the same time, a significant difference between the Canadian system of training doctors of philosophy and the American one is that only those with a master's degree

can enter doctoral studies in Canada. We remind you that bachelors can also enter the USA, but they study longer.

Summarizing all of the above, we can highlight the following features of the system of training scientific personnel in Canada:

- complete autonomy of the provinces in determining the conditions and procedures for awarding scientific degrees due to the absence of a specially authorized body in the field of education and science;
- a wide variety of doctoral programs offered by Canadian universities;
- a significant number of foreign students and postgraduates studying in Canadian universities;
- worldwide recognition of received scientific degrees.

France. Doctoral training in France takes place in special doctoral schools that are part of the university system and are their units. The basis of the educational process is the research activity of scientific groups in which students are united. Each group develops its own scientific project, which becomes the essence of their studies.

As the researchers note in their writings, there are two types of French doctoral studies: postgraduate (after receiving a master's degree), joint (studying under the supervision of two teachers at once). In the case of a joint doctoral program, the topic of the dissertation, as well as its writing, are supervised simultaneously by two universities: students alternately stay in both countries, use the bases of both universities, defend it in the chosen country, but at the same time receive two diplomas.

All doctoral students participating in the joint study program receive a special stipend that covers their transportation costs for trips to France and back.

Only those who already have a master's degree can enter doctoral studies. There are about three hundred doctoral programs operating throughout France: they include more than 60,000 teachers and more than 1,200 research laboratories. France has many treaties with other European states, so doctoral students take an active part in international scientific cooperation programs financed by foundations or industrial organizations. Often, when enrolling in studies, there is an opportunity to receive a grant. The amount of the grant is individual.

After writing the thesis, agreeing it with the supervisors and setting the date for the defense, it is necessary to obtain an official file from the university and fill it out. Reports from people who review the work are also attached to the dossier. There should be two such people and they should not be employees of the laboratory in which the dissertation was performed. It is their feedback that plays a key role in awarding a scientific degree.

Studying at a French doctorate lasts 3 years, of which 1 year is allocated to lectures, and 2 years to scientific activity. Upon completion of studies, the student is awarded a Ph.D.

Germany. Doctoral programs in Germany operate and dissertations are defended exclusively at universities. At the same time, doctoral studies in this country are free and last for 3 years.

A necessary condition for obtaining permission to study under the PhD program in Germany is the presence of a specialist or master's degree in the relevant field of

science. Sometimes postgraduate students are required to provide certificates of internship. However, as the German Academic Exchange Service (DAAD) points out, conditions can vary depending on the university, department and even major.

The defense of the dissertation and the receipt of the PhD degree in Germany require the successful completion of the corresponding study program of a higher educational institution. The total period of stay in doctoral studies is 3 years with the possibility of extension up to 5 years (but only in research groups). In the first year of his studies, a doctoral student (Doktorand, Doktorandin - a person engaged in writing a dissertation) must attend seminars and lectures, participate in various scientific discussions. Doctoral students are awarded a scholarship in the amount of 1,000 to 2,000 euros. Some graduate students are fellows (receive a scholarship), others are associate members, their studies and research are financed from other sources (usually these are grants from their supervisors). In this case, the post-graduate student is expected to work as a researcher at a research center.

Each faculty of the university has its own procedure for the defense of the thesis (Promotionsordnung). First you need to open a protection procedure (Promotionsverfahren). This is done by submitting the dissertation and a number of accompanying documents to the dean's office. At the same time, unlike the Ukrainian practice, the presence of publications for protection is optional, but welcome. After that, the Faculty Council forms a defense commission. The commission includes three reviewers (one of whom, as a rule, is a scientific supervisor) and five more men. The dissertation is submitted to reviewers (referees), who write reviews and rate the work on a five-point scale. If the difference in the reviewers' scores is more than one point, additional reviewers may be appointed. Provided that the evaluations are positive, the thesis is allowed to be defended, after which the final evaluation is given for the thesis.

Great Britain. In the UK, the PhD is the most popular academic degree. At the same time, the scientist notes that the financing of doctoral studies in this country takes place at the expense of receiving grants or personal scholarships.

The duration of the study depends on the chosen topic and the motivation of the applicant. As a rule, this is three to four full years of permanent study or five to six years of part-time study.

There are several routes to a PhD in England, with the most common PhD programs being:

- traditional research programs (PhD);
- educational and research programs (New Route PhD);
- professionally oriented programs (Professional Doctorates).

Japan. Japan is rightfully considered one of the most innovative countries. The most famous among Japanese universities are Tokyo, Kyoto and Waseda. Applicants are required to have a master's degree and a willingness to participate in research projects. Most often, doctoral studies are conducted only in English, knowledge of Japanese is not required for foreign applicants. However, the practice of passing oral and written entrance exams is quite common.

Doctoral studies in Japan are paid for the vast majority of applicants. At the same time, graduate students have the opportunity to receive various scholarships, namely:

- Japanese Government Scholarship;
- scholarship of the Ministry of Education of Japan;
- scholarships from private foundations (for example, the Takaku Foundation).

Discussion. The results of the study made it possible to systematize the distinguishing features of the training of doctors of philosophy in the leading countries of the world

The main distinguishing features exist in the following directions (Fig. 1).

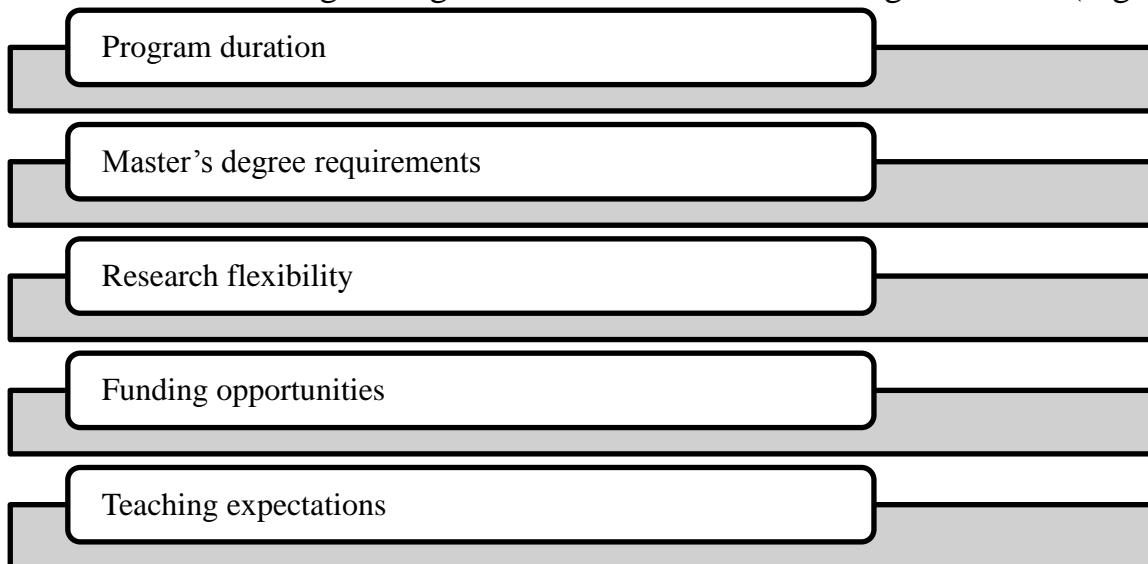


Figure 1. The main distinguishing features in the training of doctors of philosophy between an American and European Economics PhD program

Source: systematized by the authors based on [4-10]

Program duration. The most striking difference between an American and European PhD is the expected duration of the program.

In the US, universities traditionally offer a five-year degree where the first two years are devoted to training, and the final three years are expected to be spent on independent research. At the end of Year 1, graduate students take core examinations to progress to the second year. These are traditionally in Microeconomics, Macroeconomics and Econometrics. In the second year of an American PhD, students can choose courses that are closer to their research interests, which allows them to specialize in a particular field.

In Europe, graduate programs vary significantly in terms of both structure and expected study duration. A standard Economics PhD lasts three to four years. In the first year, graduate students typically follow PhD-level courses offered by their department and develop a research proposal. The next two to three years are spent on independent research.

Recently, many top European economics schools have started offering a 5-year PhD program following the American tradition. It is composed of two years of intensive classes delivered ‘in-house’ by the respective department, after which students are typically awarded a degree of a Research Master’s (or MPhil) and progress onto the research stage.

Some universities offer a three-year ‘research only’ program for more advanced students, although this is still uncommon. These programs are usually for students that completed a Research Master (or an MPhil) somewhere else or gained extensive research experience prior to their PhD.

Master’s degree requirements. The second difference between an American and a European PhD is whether one can apply with an undergraduate or a Master’s degree. Most economics departments in the US have a preference for candidates with a completed Master’s degree. However, this is not usually a formal requirement: many successful applicants get in with an undergraduate degree and no or limited prior research experience. To strengthen their portfolio, especially when applying to top schools, some applicants spend a year or two as a predoctoral fellow (“predoc”) at a reputable department.

Research flexibility. American and European doctoral programs also differ in the degree of flexibility that the students get when choosing their research topic.

In the US, a doctoral dissertation is a composition of several (typically, 3-4) research papers that might or might not be interconnected. They can even come from different fields in economics and demonstrate a diversified portfolio for a future PhD holder. A job market paper, which is chosen from the research portfolio and is usually the most promising and advanced piece of research, plays a far greater role for someone who wishes to pursue an academic career. This is because those pursuing an academic career will be required to submit a single paper for presentation at an annual American economics job market event, where recent PhD graduates are matched with academic institutions. The process is highly centralized in the US by the American Economic Association (AEA).

European PhD students typically develop an elaborated research proposal prior to commencing an active research stage. The projects (typically 3-4) are expected to be interlinked and within one research field.

In striking contrast to the US, many departments in Europe and the UK offer project-based PhD positions. That is, a professor (or a research group) submits a grant proposal on a specific topic to the national or European research council. If the application is successful, the allocated funds are used to cover the compensation of everyone involved: from research assistants and PhDs to postdoctoral researchers and principal investigators. Typically, several PhD students are recruited for one project. As the research topic is predetermined by the project, students have little flexibility to work on something else. This form of doctorate studies is rare in America.

Funding opportunities. Funding sources and opportunities for PhDs are another striking difference. In America, PhD funding is typically a complex composite. The funds come from various sources: the graduate school, the department, or a dedicated charity or national fund. The form of funding varies, too: from teaching and research assistantships to merit-based scholarships. The final amount might vary from year to year and depends on the student’s individual circumstances.

In Europe, a PhD scholarship is usually a fixed amount offered for the duration of the program. Additional funds may come from teaching and exam invigilation activities (the latter being particularly common in the UK). The funds are allocated by

the university or the department. For those pursuing a project-based PhD (see the previous section), the funds come from the sponsoring body and are administered by the department.

Moreover, in Europe, it is common to do an externally funded PhD: a company or an organization (such as a ministry, a national central bank, or a think tank) sponsors the doctoral degree for their (future) employee to research a very particular topic that is relevant for them. This is usually done in collaboration with a university, but the expenses are covered by the respective stakeholder.

Teaching expectations. Both American and European PhD programs offer significant exposure to teaching. In America, teaching duties are not only an essential part of economics PhD training but also a source of funding in most cases. Teaching at both undergraduate and Master's levels is considered a crucial element of a successful academic job market preparation for graduate students. In Europe, the amount of teaching workload depends on the program and institution. In a standard 4-year PhD track, students spend on average 15% of their time on teaching. Project-based and externally funded PhD students are typically not expected to teach any classes, but the department usually provides the opportunity to do so at the student's will. In the UK, for instance, PhD students can choose how many hours to teach: this work is paid on top of the base PhD scholarship.

Universities in Australia, New Zealand and Canada typically follow the American PhD structure: two years of classes plus three years of independent research. A PhD experience there is comparable to the one in the US. Similar programs (in terms of organization) are offered by top Asian schools in Hong Kong, Singapore, and South Korea.

In other parts of the world, where economics research capacities are less developed, doctoral studies take various forms, such as employment at the national academy of sciences.

Conclusion. The main results of the conducted research are presented in the following conclusions:

1. The article examines the specifics of Training PhDs in Economics, and systematizes the specifics of each country.

2. In the article, a comparative analysis of the system of training economics specialists at the scientific level of doctoral studies in the USA, Canada, Japan, and EU countries is carried out.

3. The main differences were established in such areas as: Program duration; Master's degree requirements; Research flexibility; Funding opportunities; Teaching expectations.

4. It has been established that Universities in Australia, New Zealand and Canada typically follow the American PhD structure: two years of classes plus three years of independent research. A PhD experience there is comparable to the one in the US. Similar programs (in terms of organization) are offered by top Asian schools in Hong Kong, Singapore, and South Korea. In other parts of the world, where economics research capacities are less developed, doctoral studies take various forms, such as employment at the national academy of sciences.

Author contributions. The authors contributed equally.

Disclosure statement. The authors do not have any conflict of interest.

References:

1. Gregory M. Perry (1998). On Training PhDs in Economics: What Can Economics Programs Learn from Those in Agricultural Economics? *American Journal of Agricultural Economics*. Vol. 80, No. 3 (Aug., 1998), pp. 608-615. DOI: <https://doi.org/10.2307/1244567>.
2. Hansen, W.L. "The Education and Training of Economics Doctorates: Major Findings of the American Economic Association's Commission on Graduate Education in Economics." *Journal of Economic Literature* 29(1991):1054-87.
3. Scott, F., and Anstine, J.D. "Market Structure in the Production of Economics Ph.D.'s." *Southern Economic Journal* 64(1997):307-20
4. Sakhno, H. (2022). 5 key differences between American- and European-style PhD programs. URL: <https://cutt.ly/FNr6WfJ>.
5. Barnett JV, Harris RA, Mulvany MJ. A comparison of best practices for doctoral training in Europe and North America. *FEBS Open Bio*. 2017 Sep 8;7(10):1444-1452. doi: 10.1002/2211-5463.12305. PMID: 28979835; PMCID: PMC5623696.
6. Powell S and Green H (2007) *The Doctorate Worldwide*. Open University Press, Maidenhead, UK.
7. Nerad M and Heggelund M (2008) *Toward a Global PhD? Forces and Forms in Doctoral Education Worldwide*. University of Washington Press, Seattle, USA: and London, UK.
8. Hreben, S., Mihus, I., Parashchenko, L., Laptiev, S., & Alkema, V. (2019). The mechanism of financial control over the allocation of budgetary funds depending on the results of scientific activity of a higher education institution. *Financial And Credit Activity: Problems Of Theory And Practice*, 4(31), 466-476. doi:<http://dx.doi.org/10.18371/fcaptp.v4i31.190998>.
9. Abdalqadr, A., & Mihus, I. (2020). Educational institutions and the development of the concept of social responsibility. *Science Notes of KROK University*, (1 (57), 94-104. <https://doi.org/10.31732/2663-2209-2020-57-94-104>
10. Abdalqadr, A. (2020). Academic integrity is an extension of your own personal integrity. *Economics, Finance and Management Review*, (1), 93-98. <https://doi.org/10.36690/2674-5208-2020-1-93-98>

Received: August 25, 2022

Approved: September 29, 2022