

The Internationalization of Education Policy in the Polytechnic Institutes of Portugal and the Partnerships with Brazilian Institutions of Vocational and Technological Education\*

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#### **ABSTRACT**

Portuguese actions and initiatives for the internationalization of education are developed not only with the European Union, but also with countries in Africa and Latin America. Portuguese polytechnic institutes are important partners of Brazilian public institutions for vocational and technological education, entering into interinstitutional agreements aimed at teaching, research and extension. The objective of this article is to understand the strategies and the partnerships between the Instituto Político de Coimbra and Instituto Politécnico do Porto and the three public institutions of professional and technological education: Instituto Federal de Educação, Ciência e Tecnologia do Sul de Minas Gerais - IFSULDEMINAS and São Paulo - IFSP and Centro Estadual de Educação Tecnológica e Paula Souza - CEETESP, seeking to understand the concepts and practices of vocational and technological education considering the process of internationalization of education. Through bibliographic and field research it was possible to conclude that such partnerships result from geopolitical, demographic issues and the reformulation of the Portuguese educational system in the face of European Union guidelines. What is emphasized in this study is the relevance of the Portuguese experience of vocational and technological training that makes Brazilian counterparts have more ease and even higher interest in the development of partnerships that need to be expanded as effective opportunities for construction projects for the internationalization

#### **KEYWORDS**

Internationalization of education. Vocacional and technological education. Teaching institutions. Education policy trends.

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# A Política de Internacionalização da Educação em Institutos Politécnicos de Portugal e as Parcerias com Instituições Brasileiras de Educação Profissional e Tecnológica

#### **RESUMO**

Ações e iniciativas portuguesas de internacionalização da educação se desenvolvem não somente com a União Europeia, mas também com países da África e América Latina. Os institutos politécnicos portugueses são importantes parceiros das instituições públicas brasileiras de educação profissional e tecnológica, celebrando acordos interinstitucionais voltados para o ensino, a pesquisa e a extensão. O objetivo desse artigo é compreender as estratégias e os alcances das parcerias entre o Instituto Político de Coimbra e o Instituto Politécnico do Porto face às três instituições públicas de educação profissional e tecnológica brasileiras: Instituto Federal de Educação, Ciência e Tecnologia do Sul de Minas Gerais - IFSULDEMINAS e de São Paulo - IFSP e o Centro Estadual de Educação Tecnológica Paula Souza - CEETESP, buscando conhecer as concepções e práticas de educação profissional e tecnológica no âmbito da internacionalização da educação. Por meio de uma abordagem qualitativa a partir do levantamento de documentos oficiais, da produção acadêmica e de entrevistas com gestores foi possível concluir que tais parcerias decorrem de questões geopolíticas, demográficas e da reformulação no sistema educacional português em conformidade com as diretrizes da União Europeia. Enfatiza-se a relevância da experiência portuguesa de formação profissional e tecnológica que faz com que as instituições congêneres brasileiras tenham mais facilidade e mesmo interesse em desenvolver parcerias que precisam ser ampliadas como oportunidades efetivas de construção de projetos formativos de internacionalização da educação.

#### PALAVRAS-CHAVE

Internacionalização da educação. Educação profissional e tecnológica. Instituições de ensino. Tendências da política educacional.

# La Política de Internacionalización de la Educación en los Institutos Politécnicos de Portugal y las Asociaciones con las Instituciones Brasileñas de Educación Profesional y Tecnológica

#### **RESUMEN**

Las acciones e iniciativas portuguesas para la internacionalización de la educación se desarrollan no solo con la Unión Europea, sino también con países de África y América Latina. Los institutos politécnicos portugueses son socios importantes de las instituciones públicas brasileñas de educación profesional y tecnológica, celebrando convenios interinstitucionales destinados a la enseñanza, la investigación y la extensión. El objetivo de este artículo es comprender las estrategias y el alcance de las alianzas entre el Instituto Político de Coimbra y el Instituto Politécnico do Porto en relación con las tres instituciones públicas de educación profesional y tecnológica en Brasil: Instituto Federal de Educação, Ciência e Tecnologia do Sul de Minas Gerais -IFSULDEMINAS y São Paulo - IFSP y el Centro Estatal de Educación Tecnológica Paula Souza - CEETESP, buscando conocer los conceptos y prácticas de la educación profesional y tecnológica en el contexto de la internacionalización de la educación. A través de un enfoque cualitativo basado en la encuesta de documentos oficiales, producción académica y entrevistas con gerentes, fue posible concluir que tales asociaciones surgen de cuestiones geopolíticas, demográficas y de la reformulación del sistema educativo portugués de acuerdo con las directrices de la Unión Europea. Se destaca la relevancia de la experiencia portuguesa de formación profesional y tecnológica, lo que hace que instituciones brasileñas similares sean más fáciles y aún más interesadas en desarrollar alianzas que necesitan ser ampliadas como oportunidades efectivas para construir proyectos de formación para la internacionalización de la educación.

#### **PALABRAS CLAVE**

Internacionalización de la educación. Formación profesional y tecnológica. Instituciones de enseñanza. Tendencias de las políticas educativas.

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## 1 Introduction

The international dimension is highlighted in youth, education and vocational training policies in several countries in recent decades, especially when announcing the goal of student and teacher mobility and cooperation between institutions for the development of academic partnerships.

In Portugal, vocational training strategies have been affected to meet the demands of the European Union aimed at making Europe a more dynamic and internationally competitive socioeconomic space. In this scenario, Portuguese higher education has undergone several changes to become more attractive in the European market that imposes a process of internationalization of education. In Portuguese polytechnic higher education, there is a demand for greater clarity of its institutional mission, and, consequently, of its connection with the European labor market and with the international dimension of education. Thus, actions and initiatives of internationalization of education are being developed not only with the European Union, but also with countries on the periphery of this process (GUIMARÃES, 1999).

Particularly in Latin America, polytechnic institutes are active in several countries, especially in Brazil. Polytechnic institutes are important partners of Brazilian public institutions of professional and technological education, celebrating inter-institutional agreements focused on teaching, research and extension.

With this in mind, the objective of this article is to understand the strategies and scope of the partnerships between Portuguese and Brazilian higher education institutions, seeking to know the conceptions and practices of professional and technological education considering the process of internationalization of education.

The choice of polytechnic higher education in Portugal to understand the internationalization of vocational and technological education in Brazil is a result of the studies developed within the research project entitled "Vocational and Technological Education Policies in the context of the internationalization of education", funded by Fapesp (2018-2020), and which had as its object the policies of technical and technological education<sup>1</sup>. Specifically, for the development of this text, we counted on bibliographic research on the internationalization of education in a scenario of economic globalization and neoliberal policies, documentary research with the objective of gathering information about Portuguese higher education, and the contribution of two interviews with professors who hold coordination positions in the Polytechnic Institutes of Portugal (Coimbra and Porto). As for the Brazilian professional and technological education institutions, we focused on systematizing the internationalization strategies of two institutes of the Federal Network of Professional Scientific and Technological Education (the Federal Institute of Education,

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Science and Technology of Southern Minas - IFSULDEMINAS and the Federal Institute of Education, Science and Technology of São Paulo - IFSP and of the São Paulo state network, the Paula Souza Technological Education Center (CEETEPS) based on their institutional documents, especially their institutional development plans. The choice of institutions was due to the existence of joint institutional partnerships and the professional and technological character that define them.

The first section discusses the perspective of the internationalization of education, considering the Bologna Process, which created a new paradigm and promoted changes throughout the European higher education system. Portugal's adherence to the Bologna Process has significantly changed the strategies of higher education institutions in the development of professional and technological education and in the ways and expectations regarding national and international academic partnerships.

The second section points to the nature of vocational education in Portuguese education in relation to the demands of the Portuguese and European labor market. It presents the Institute of Employment and Professional Training (IEFP) and points out the development of the educational policy and system that as a whole is aligned with the precepts of the Bologna Process.

The third section deals with polytechnic higher education, highlighting the aspect of professional and international education in the face of the political and economic context of the European Union based on the importance of the Professional Higher Technical Courses (CTESP). In this section we include, and comment on the pertinent documentation, the interviews that were conducted during field research in Portuguese institutions focused on professional education. These interviews allowed us to identify the dynamics of the implementation of the educational policy from the point of view of the institutional actors.

The fourth section presents some general elements of the partnerships of the Polytechnic Institutes of Portugal with the institutions of professional and technological education in Brazil pointing to some limits and possibilities.

#### 1.1 The Bologna Process and the Challenges for Portuguese Higher Education

Although the idea of a European higher education is old, it is with the Maastricht Treaty, known as the Treaty on European Union (TEU), of February 7, 1992, which established the European Union in the Dutch city of Maastricht that there will be advances in this direction.

The Maastricht Treaty, considered to be the first document of the European Union, aimed to prepare the Economic Monetary Union (EMU) and create the conditions for the harmonization of a European economic policy and to eliminate the barriers related to customs issues and the circulation of products, services, and people. It is also understood as an important document that signals the international dimension of European education. According to this document, the European Union's action would aim to:

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- developing the European dimension in education, particularly through the learning and dissemination of the languages of the Member States
- to encourage mobility of students and teachers, inter alia, by encouraging the academic recognition of diplomas and periods of study
- to promote cooperation between educational establishments
- to develop exchanges of information and experience on issues common to the education systems of the Member States
- encouraging the development of youth exchanges and of exchanges of socio-educational instructors
- encourage the development of distance education (MAASTRICHT TREATY, 1992).

Specifically, in articles 126 and 127 of the Maastricht Treaty (MAASTRICHT TREATY, 1992), when dealing with education, vocational training and youth, mobility, recognition of qualifications and periods of study, cooperation between institutions and the exchange of knowledge are highlighted as central objectives. In addition, institutional development, the flow of knowledge and people on a global scale associated with the regulation of certification and training time are made explicit in this document.

In relation to the vocational training policy, within the same logic, the Maastricht Treaty, in article no. 127, considers objectives related to training and socio-labor insertion, especially of young people, showing concern for those who need reconversion and reinsertion in the labor market in the context of the European Union member states:

- facilitating adaptation to industrial change, particularly through vocational training and retraining
- improving initial and continuing vocational training in order to facilitate vocational integration and reintegration into the labor market
- facilitating access to vocational training and encouraging the mobility of instructors and trainees, particularly young people
- encourage cooperation on training between educational or vocational training establishments and firms; develop exchanges of information and experience on issues common to the training systems of the Member States (MAASTRICHT TREATY, 1992).

Intertwined with geopolitical and economic issues, the international dimension of education and vocational training are important guidelines for the European Union. It is worth mentioning that the mobilization for the creation of the European Higher Education Area is attractive not only in the European Union, but also worldwide. Thinking about this mobilization in geopolitical terms is important when observing that the creation of the European Union is also a response to the expansion of the United States and the emerging Asian forces - China, Japan and India.

According to Bianchetti and Magalhaes (2015), the initiatives of the European Union organization result in the mobilization of a wide range of fronts. As far as the educational field is concerned, the Bologna Process (1999) stands out, which, at first, was presented as an initiative of the Ministers of Education only, but after the Lisbon Strategy (2000), it became a global strategy and entered the European Union's agenda. The Bologna Process is based on a set of measures that aim to create a European Higher Education Area, based on free competition in the higher education market, the harmonization of education systems, the mobility of teachers and students, and the employability of graduates.

In this perspective, according to Sousa (2011), the Lisbon Strategy of 2000 radically changed the direction of the European Union's educational policies, and outlined a set of objectives aimed at making Europe, the most dynamic and competitive economic space on the world stage. The intention relates to sustainable economic growth with the possibility of generating more and better jobs and social cohesion. The strategies include the need for a complete review of the European education system, including the definition of means capable of promoting student and teacher mobility, cooperation and research among educational institutions, among others.

According to Sousa (2011), the Lisbon Strategy has contributed to a greater visibility of vocational training, innovation and science & technology policies, by recognizing the importance of a knowledge-based economy and the international dimension. Most European nations joined the common European space of higher education and created actions to promote the mobility of teachers and students, the creation of credit system and comparable degrees, and the creation of an education system based on two cycles. The first cycle with a minimum duration of three years, which prepares students for the labor market and the second cycle that prepares them for access to masters and/or doctorate degrees. There is also the implementation of a "Diploma Supplement" that enables the employability of graduates and the competitiveness of the student trained in Europe. The purpose is to form competitive professionals to work not only in European countries, but all over the world. Hence the importance of the expansion of degrees that allow flexibility of functions and adaptation to new professional situations.

Sousa (2011) states that the explicit goals of the Bologna Process, such as the mobility and employability of students and teachers, the creation of a compatible, competitive and attractive space not only for European students, but also for third countries, represent a deliberately market-oriented project. According to the author, "the competitiveness of the European Higher Education Area seems to be the economic goal behind the search for quality and attractiveness that can compete with North American and Asian systems" (SOUSA, 2011, 52).

It follows that it is the prerogative of member states to adopt standards in order for Europe to become more attractive, competitive and promoters of mobility and employability. The key points to be achieved are circumscribed to the intention of creating flexible training

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courses aimed at competitive development, facilitating employability, promoting effective mobility of students and teachers, creating degrees, credits and assessment and certification mechanisms compatible between institutions.

According to Sousa (2011), these principles resignify the relationship with the production of knowledge that are intended, primarily, the creation of values and mobility between institutions, as well as create partnerships that enable responses to the demands of economic globalization. In this perspective, the implementation of the Bologna Process contributes to the construction of various groups committed to the elaboration of a system of credits and degrees that are comparable and easy to recognize. To this end, it is worth mentioning the Tuning Educational Structures in Europe project, which originated in 2000 and is financed by the European Commission. This project definitely contributed to the construction of a new paradigm by defining a 3-cycle education system, curricula based on competencies, assessments based on learning outcomes and mobility and comparability through a credit system called European Credit Transfer and Accumulation System (ECTS) (SOUSA, 2011).

In the wake of the changes, undergraduate degrees are considered part of the 1st cycle of higher education, with the purpose of developing skills with a view to employability and professional practice. The 2nd cycles and the doctorates, in turn, are directed towards specialization and research, should continue this logic, creating in students and teachers' values aimed at cultivating innovation and value production.

About the European Credit Transfer and Accumulation System (ECTS) proposed by the Tuning Project, there is the intention to introduce a common language and facilitate the construction of the simpler recognition system. ECTS considers the student to be active in the learning process and presupposes flexible curricula based on the competence model. The centrality of this system is the competencies aimed at increasing employability. Based on Sousa (2011), credits are awarded when learning outcomes are achieved by students. Learning outcomes refer to the programs of each course unit or modules formulated by teachers and competencies to the knowledge acquired by students. The competencies acquired are expressed in grade or level and relate to the study plan rather than the specific course units. Furthermore, despite the existence of several variables surrounding ECTS, the major characteristic is that it is a system centered on the student and on the volume of work that students need to develop in order to achieve the defined objectives.

Another important implication of the actions towards the realization of the Bologna Process was the creation by the Presidents of the European Parliament and the Council of the European Union, on April 23, 2008, of the European Qualifications Framework (EQF). The EQF has become a reference tool for comparing qualification levels in different countries' education systems. It is worth mentioning that the EQF is based on qualifications, not degrees, and the emphasis is on learning. The EQF has several levels that are classified from the acquisition of basic general knowledge to the acquisition of cutting-edge knowledge in

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one or more knowledge areas. In addition, the EQF defines learning outcomes as the knowledge that the student has achieved at the end of each study cycle. It is an important complementary instrument for European mobility and for facilitating credit transfer.

In Portugal, it is from Law no. 1/2003, which approved the Legal Regime for the Development and Quality of Higher Education (ASSEMBLEIA DA REPÚBLICA, 2003), that the Portuguese State began working effectively to harmonize the national system to the rationality of the European Higher Education Area. With the Decree Law no. 42/2005 (PORTUGAL, 2005a), Portuguese higher education institutions, even without much clarity, were obliged to implement the curricular reforms. The implementation process is not pacific, mainly because it is not a simple curricular alteration, but radical changes in the Portuguese higher education model itself. It is important to note that the process of implementing the vision expressed in the Bologna Declaration in Portugal is a process induced by the Portuguese government itself, which issued the Order No. 10543/2005 on May 11 (PORTUGAL, 2005b), with rules for higher education institutions in the country to submit their study plans and curriculum structures to the Ministry of Science, Technology and Higher Education (MCTES).

Currently, the necessary actions to achieve the Bologna Process are under development in Portugal for the recognition of qualifications and the continuation of studies in any European country. In Portugal, three cycles have been adopted, a system of accumulation and transfer of credits has been created, facilitating the recognition of exchange programs, such as the Sacrates-Eramus Program. There is greater academic mobility with recognition of qualifications, the "Diploma Supplement" and the European Model Curriculum Vitae. The adoption of the Bologna Process was definitively concluded by the MCTES in 2009, when it drafted the National Qualification Framework for Higher Education (QNQES), and made it possible to systematize the legislation implemented between 2005 and 2008, reorganizing the different levels of higher education qualifications and the national and international mobility mechanisms.

Finally, the implementation of the norms in Portugal intended to contribute to the creation of the European Higher Education Area brought significant challenges and tensions, because the simple restructuring of curricula is not enough to create the conditions for the development of a new culture. This process requires teachers and students to signify their roles. It is worth considering that the necessary change does not depend basically on the creation of legal documents, but on the actors involved in the educational process concretely assuming the ideals under development. Hence, the process of modernization of higher education in Portugal cannot be considered complete.

In summary, the strategies of professionalization at the higher education level have been, in Portugal, a way to meet the demands of the European Union and are thought and implemented in a way that the graduates of its courses continue their training trajectory in all kinds of institutions and educational levels of the European Union. Internationalization, in this sense, is not thought of simply as an institutional practice, but as the core of the educational policy common to all signatories of the European Union.

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### 1.2 The Professional and Technological Dimension in Education in Portugal

In accordance with the vision expressed in the Bologna Declaration, secondary education, aimed at the education and training of young people and adults, required the restructuring of the curriculum and purpose of education. Decree-Law No. 55/2018, of July 6 (PRESIDENCY OF THE COUNCIL OF MINISTERS. 2018), which establishes the curriculum for basic and secondary education, presents the guiding principles for its design, operationalization, and assessment of learning related to youth and adult education and training. This decree-law grants curricular autonomy to schools, materialized, among other aspects, in the possibility of flexible management of the educational and training curricular matrices, according to the curricular options of each school. Basic and secondary education include dual certification courses, namely education and training courses for young people, aimed at the completion of compulsory education and insertion into working life (PRESIDENCY OF THE COUNCIL OF MINISTERS. 2018).

Regarding professional courses, the National Qualifications System (SNQ), established by Decree-Law No. 396/2007, of December 31 (PORTUGAL 2007), came to address the low levels of qualification of the population. The SNQ has committed itself to the generalization of the secondary level as the minimum qualification of the population, and mechanisms for the organization of qualifications have been created, such as the National Qualifications Framework (QNQ) and the National Catalogue of Qualifications (CNQ), in order to link the importance of training and learning to the process of modernization of enterprises and the economy.

The catalog designed and implemented in line with the European Qualifications Framework - EQF as the Recommendation of the European Parliament and of the Council, of April 23rd, 2008, on the establishment of the EQF for Lifelong Learning (2008/C 111/01) (RECOMMENDATIONS EUROPEAN PARLIAMENT, 2008) and also with the National Qualifications Framework. The National Qualifications Catalog (CNQ) is a strategic management tool for non-higher level qualifications that integrates the National Qualifications System (Decree-Law 396/2007, December 31st). Its mission is to coordinate the implementation of education and vocational training policies for young people and adults and to ensure the development and management of the system of recognition, validation and certification of skills. This instrument, integrates the qualifications that cover 39 areas of education and training. The National Qualifications Catalogue is organized by education and training areas, according to the National Classification of Education and Training Areas, according to the Decree n° 256/2005, 16th March (PORTUGAL, 2005), and defines for each qualification the respective references that are the Vocational Profile, the Training Referential, the Referential for Recognition and Validation and Certification of Skills, basic and technological components.

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The catalog is a normative and dynamic document that is always being updated by the National Agency for Qualification and Vocational Education (ANQEP, 2020). Based on the Decree-Law no. 55/2018, it is possible to state that the curricular plan of vocational training integrates the following training components: specific training in scientific-humanistic courses; b) scientific training in specialized artistic courses and in vocational courses aiming to associate the specificity of each course to the professional qualification; c) artistic technical training in specialized artistic courses and technology in vocational courses; d) training in the work context carried out in companies and other organizations materialized in the internship format (PRESIDENCY OF THE COUNCIL OF MINISTERS. 2018).

The structure of the Portuguese school system in general and what is specific to vocational training is quite complex and flexible. Basic Education is divided into 3 cycles: 1st cycle (from 1st to 4th grade), 2nd cycle (from 5th to 6th grade) and 3rd cycle (from 7th to 9th grade). Basic Education, being 9 years, is strictly public in nature. Secondary Education includes the 10th, 11th and 12th grades. Professional and technological education as a system and educational program, on the other hand, is a policy more focused on the schooling and professionalization of young people and adults, that is, students outside the expected flow of formal education in the various cycles of basic and secondary education. Technical and technological education, as it is understood as professional education at the secondary and higher levels, presents distinctions in relation to propaedeutic and university education, but is not constituted as a system, program or policy separate from the other forms of schooling and professionalization.

The vocational training strategies have been a way to meet the demands of the European Union and are designed and implemented in such a way that the graduates of the courses continue their training in all kinds of institutions and educational levels and manage to keep themselves employable in the European space.

In this scenario, the Instituto de Emprego e Formação Profissional (IEFP) stands out. It is aimed at young people and adults who have dropped out of school, offering professional qualification courses. The courses are open to those who need professional reinsertion. The IEFP is an institution marked by the flexibility of the Portuguese educational system, especially regarding professional education. The IEFP is aligned to the needs of modernization of the Portuguese education system according to the Bologna Process, and stands out for its emphasis on flexibility to facilitate people's access to education, including higher education. Any citizen, including foreigners, by taking a course at IEFP has the opportunity to enter higher education and obtain professional qualifications valid and recognized throughout Europe.

Therefore, the international dimension is not something secondary in the vocational and technological education of young people and adults in Portugal. The internationalization of education materializes in professional education directly linked to the employability objectives, presenting itself as a gateway to the common European market. Therefore, the internationalization of education is inherent to the educational policy as a whole and is

adjusted to the professionalizing education of Portuguese education and inserted in the demands and needs of the common European market, with greater expression in polytechnic higher education institutions.

# 1.3 Portuguese Polytechnic Higher Education: the Importance of the Professional Higher Technical Courses (CTESP)

Higher education enters the Portuguese political agenda in the 1970s, recognizing its importance for the country's economic and social development. In that decade Portuguese higher education diversifies and configures itself in a binary system formed by the coexistence of a university education subsystem and a polytechnic education subsystem.

Law No. 62 of September 10, 2007 (ASSEMBLEIA DA REPÚBLICA, 2007), when referring to the binary nature of the higher education system points out in Article 3:

- 1 Higher education is organized in a binary system; university education shall be oriented towards the offer of solid scientific training, joining efforts and competences of teaching and research units, and polytechnic education shall concentrate especially on vocational training and advanced technical training, professionally oriented.
- 2 The organization of the binary system should meet the requirements of an increasingly diversified demand for higher education oriented to meet the needs of those finishing secondary education and those seeking vocational and professional courses and lifelong learning (ASSEMBLEIA DA REPÚBLICA, 2007).

The international dimension of higher education is addressed in Article 16 of Law No. 62 of September 10, 2007, when it reports that:

- 1 Higher education institutions may freely establish among themselves or with other institutions association or cooperation agreements to encourage mobility of students and teachers and to pursue partnerships and common projects, including joint degree programs under the terms of the law or sharing of resources or equipment, either based on criteria of territorial aggregation or on criteria of sectorial aggregation.
- 2 Under the terms foreseen in the statutes of the respective higher education institution, the organic units of a higher education institution may also associate with organic units of other higher education institutions for the purpose of joint coordination in the pursuit of their activities.
- 3 National higher education institutions may freely integrate in networks and establish partnership and cooperation relations with foreign higher education institutions, foreign or international scientific organizations and other institutions, namely within the scope of the European Union, of bilateral or multilateral agreements signed by the Portuguese State, and also within the framework of Portuguese speaking countries, for the purposes set forth in the previous number.
- 4 The actions and programs of international cooperation must be compatible with the nature and purposes of the institutions and take into account the broad lines of national policy, particularly in matters of education, science, culture and international relations (ASSEMBLEIA DA REPÚBLICA, 2007).

Specifically, about polytechnic education institutions, Law No. 62 of September 10, 2007, in Article 7 states:

- 1 Polytechnic institutes and other polytechnic education institutions are high-level institutions oriented towards the creation, transmission and dissemination of culture and knowledge of a professional nature, through the articulation of study, teaching, oriented research and experimental development.
- 2 Polytechnic education institutions confer the degrees of licensed and master, under the terms of the law (ASSEMBLEIA DA REPÚBLICA, 2007).

The training of a more applied and labor-oriented nature at a higher level occurs in the polytechnic institutes and is oriented towards the labor market, unlike training in universities, which are characterized more by academic, theoretical and scientific research aspects.

The differentiation that is made between polytechnics and universities is more by the focus of the training. There is no legal restriction regarding the scope of study areas taught in each subsystem. The emphasis of the polytechnics is on professional training and applied research in cooperation with companies. As for the degrees offered at polytechnics, Law 62 of September 10, 2007, states that polytechnics offer bachelor's and master's degrees, while universities offer bachelor's, master's, and doctoral degrees.

As for the denomination of higher education institutions in Law 62 of September 10, 2007, article 1 states that "higher education institutions must have their own characteristic denomination, in Portuguese, that unequivocally identifies them, without prejudice to the joint use of foreign language versions of the denomination". In addition, Article 3 states that "the use of the terms "university", "college", "higher institute", "university institute", "polytechnic institute", "higher school" and other expressions that convey the idea that higher education is provided therein is reserved for the names of higher education institutions" (ASSEMBLEIA DA REPÚBLICA, 2007).

The position of Law no. 62 of September 10, 2007, in relation to the denomination of higher education is a response to the confusion generated by the fact that polytechnic institutes are not called universities. It must be considered that there are sectors that defend the creation of polytechnic universities in Portugal. This denomination would enable polytechnic institutes to offer doctorates, which currently can be offered as long as in partnership with universities. Being a polytechnic university would facilitate the structuring of research, which is also intense in some institutes. In any case, there is a leveling in terms of evaluation of polytechnics and universities by the same indicators, but with different weights, as in relation to the employability aspect.

Article 8, item 2 of Law no. 62 of September 10, 2007, states that "higher education institutions are also responsible, under the terms of the law, for granting equivalences and recognizing academic degrees and qualifications".

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Despite the need to differentiate polytechnics from universities, claiming that the former has a vocation for applied research and a more vocational training, it is worth considering that the two systems have tendencies to come closer together because they offer similar or identical areas and courses. It is common to hear that polytechnics are becoming more and more university-oriented and universities are becoming more and more polytechnic. This is an empirical finding obtained from the interviews conducted in the context of this study.

As mentioned in the introduction of this article, given the relevance of the partnerships of Portuguese polytechnics with Brazilian institutions, field research was conducted in Portugal with visits to schools linked to the Polytechnic Institute of Coimbra and the Polytechnic Institute of Porto. These interviews were conducted with educational managers throughout the month of July 2019. Combined with the reading of documents related to Portuguese educational policies, these interviews were important for the objectives formulated for our studies. Below we consider the contribution of the testimony of two interviews.

Interviewee J.P.T., a lecturer and manager at the Polytechnic Institute of Porto, indicates that a key difference between Portuguese higher education institutions seems to be noticed when looking at the budgetary aspect of the institutions. For example, the annual budget of the Polytechnic Institute of Porto in 2019, with 18 thousand students was approximately 42 million euros, while the University of Aveiro, with 16 thousand students was around 100 million. According to this same interviewee J.P.T. 20 or 30 years ago, polytechnics were the second choice of students. This seems to have changed a lot. The universities offer much more teaching-oriented courses, however, the country is experiencing a serious demographic problem with the drastic decrease in the birth rate and the increase in the elderly population. This benefits the polytechnics, which have a more vocational training offer from a liberal agenda that was greatly encouraged by the Bologna Process. Furthermore, despite the fact that training at polytechnics is commonly placed in second place in terms of social recognition compared to university education, the interviewees considered that companies prefer students trained at polytechnics due to the technical and technological training aimed at technical demands closer to the reality of the productive world.

It is important to highlight the recent aspects of the recent educational offer of the Professional Higher Technical Courses (CTESP) by the polytechnic institutes that began in 2015. At the time of the field research, the debates and actions towards making this educational offer feasible were very intense in the context of the institutions visited. These courses refer to a process of education massification in Portugal in which the educational offer had to be expanded and the different cycles needed to become more flexible and allow a broad access to education. CTESP courses are open to holders of secondary school diplomas or legally equivalent qualifications, holders of technological specialization diplomas, holders of professional higher education diplomas, and holders of higher education degrees who wish to upgrade their professional skills. Also those over the age of 23 who have passed the tests designed to assess capacity to attend higher education.

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The legal regime of the professional technical higher education course is provided for in Decree-Law No. 74/2006, of March 24 (PORTUGAL 2006) amended by Decree-Law No. 63/2016, of September 13 (PORTUGAL 2016) and Decree-Law No. 65/2018, of August 16 (PRESIDENCY OF THE COUNCIL OF MINISTERS, 2018). The higher education course does not confer an academic degree and the successful completion of the respective study cycle awards the professional higher technician diploma.

This cycle of studies, taught in polytechnic education, has 120 credits and its duration is of four curricular semesters, consisting of a set of curricular units organized in general and scientific training components, technical training and on-the-job training, which is materialized through an internship. Each higher education institution confers the higher professional technician diploma in the training areas, taking into consideration the professional training needs, namely in the region where it is located. Holders of the professional higher technician diploma can access and enter bachelor's and integrated master's study cycles through a special competition, and acquire the respective academic degree. Courses consisting of 120 credits are accepted throughout Europe. They do not refer to a degree, but to a diploma of higher education. They are not degree courses, but are of a professional nature with a full semester of mandatory internship.

According to the interviewee P.C.B, a teacher and manager at the Coimbra School of Engineering (ISEC), the problem is that the CTESP is not a degree and still lacks the necessary recognition by students, families, and companies, although it has become increasingly popular and more suited to the needs of the productive sector. It has slowly been taking space, according to the interviewee, because students recognize that it is a useful alternative from which a higher education degree can be obtained in just two years for students who do not need a rigid academic education. In this period there is the internship that takes place in one semester. Only three semesters are academic. According to the interviewee, the success of the CTESP is measured by the amount of students who have completed it or got jobs, and it has been very useful for students who have stopped studying or have not been able to complete other courses.

Another important point is that the European Union encourages this type of offer and the federal government has supported this type of course by setting up laboratories. Moreover, according to the interviewee P.C.B, the dialogue with companies is fundamental because they help in the promotion of Polytechnic Institutes and also in entering the job market. There are polytechnic institutes that are more advanced in terms of CTESP and are true CTESP factories. There are institutes where ¼ of the students are from CTESP. The Polytechnic Institute of Porto has only 5% CTESP in its total offer, but they have been trying to expand it. However, it is noticeable that when students from CTESP are not integrated into the higher education schools linked to the polytechnic institute, they drop out more easily because they are not integrated into the academic space and life.

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The interviewee J.P.T. reports that over the last few years, graduates, PhDs, graduates in nursing, architecture, and engineering have migrated to other countries. It was ¼ of the young population that migrated, making up the body of professionals from several countries, as is the case of English hospitals that are mainly integrated by Portuguese nurses. Many do not return and make the Portuguese demographic problem even more difficult (PORTUGUESE REPUBLIC, 2019).

The interviewee J.P.T. also highlights that collaboration with international counterparts has been a vital strategy for the mission of polytechnic institutes. Currently, the Polytechnic Institute of Porto has a vast network of cooperation and more than 700 protocols including 28 European Union member states, Norway, Iceland, Liechtenstein, Turkey, Switzerland, Brazil, Bosnia, China, Senegal, Mozambique, Macau, Japan, São Tomé and Príncipe, Ukraine, Angola, Russia, South Korea, Serbia, Paraguay, Argentina and the United States. There is a strong investment of the Polytechnic Institute of Porto in Brazil that receives mostly students from Brazil, with emphasis also on Angola, Cape Verde, Guinea-Bissau, Ukraine, Mozambique, Timor-Leste Venezuela. There are also students from Australia, Canada, USA, Syria, India, Macau, Russia, Kazakhstan, among others.

According to P.C.B at this moment, one of the Achilles heels of the CTESP is the fact that they are not in internationalization programs. These students don't do mobility. For example, there are no CTESP scholarships in the Erasmus+ mobility program. In general, Portuguese Erasmus+ students choose countries that have the cost of living compatible with Portugal, such as Poland, Czech Republic or Spain, which is close. They avoid studying in Denmark, Holland, Sweden which are more expensive, because without scholarships for CTESP students it is quite difficult. There are no scholarships despite some initial and personal attempts. This occurs despite the fact that there are equivalent diplomas to the CTESP in other European countries, such as Germany, Switzerland, Finland, Denmark and France.

The interviewee P.C.B. says that one of the ways thought to promote student mobility in the CTESP is from internships in other countries. But, this is complicated because there are internship protocols that need to be met before implementing the courses.

The interviewee J.P.T. also reports that in the same way that there are Portuguese students who move to Brazil through Erasmus+ there are students who go to Latin America. Internationalization has many facets such as research projects, partnerships and several actions that can be deepened with the person responsible for the GRI. He mentions that there is a considerable inflow of foreign students in Portugal. According to J.P.T. currently with Erasmus+ students, Porto receives 6 thousand foreign students per year, which is considered a lot for Portuguese cities (J.P.T).

Regarding Brazil, the interviewee J.P.T. reports that many partnerships have been developed with the Federal Institutes, especially in the area of accounting and administration. At the Polytechnic Institute of Porto, the masters' courses in these areas receive a large group

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of Brazilians every year, who give classes in person and at a distance. Portuguese professors from the Polytechnic Institute of Porto go to Brazil to work with the masters in this area. There are partnerships with several institutions, including the University of São Paulo (USP).

Finally, according to the interviewee J.P.T., the Polytechnic Institutes are consolidated institutions, but they need more articulation among themselves and a joint strategy, for example, regarding internationalization. That is why it has been important to move towards an inter-institutional conception that propitiates a network action, involving the concept of polytechnic higher education.

To this end, the Coordinating Council for the Installation of Polytechnic Higher Education Establishments (CCISP) was created. The public network of Polytechnic Higher Education is made up of 15 Polytechnic Institutes, 5 Non-Integrated Schools, and 7 Universities, 4 of which are represented on the CCISP. This body is a joint representation of the public polytechnic higher education establishments and emerged following Decree-Law no. 513-L1/79, December 27 (PORTUGAL, 1979), and its main function was to coordinate the installation commissions of the Polytechnic Institutes and the Non-Integrated Schools. Decree Law 344/93, October 1 (PORTUGAL, 1993), approved the current statute of the Coordinating Council of Higher Polytechnic Institutes. All public polytechnic higher institutes are represented in this body which is advisory to the Ministry of Education. According to the interviewee J.P.T., the CCSIP has been a very recurrent representation in international meetings involving partners in the Federal Network of Vocational and Technological Education and CEETPS, either to continue the established agreements or to create new ones.

## 1.4 Cooperation and Internationalization Agreements of the Polytechnic Institutes with Brazilian Professional and Technological Education Institutions

From a survey conducted on the internationalization of education in three Brazilian public institutions of professional and technological education (Federal Institute of Education, Science and Technology of Southern Minas Gerais - IFSULDEMINAS and São Paulo - IFSP and the State Center of Technological Education Paula Souza - CEETESP) it was found effective partnerships with Polytechnic Institutes of Portugal, between the years 2018 and 2020.

The IFSP presents partnerships with the Polytechnic Institutes of Bragança, Porto, Guarda, and Cávado e Ave. IFSP also has partnerships with other Portuguese institutions, being the Faculty of Architecture of Lisbon and the University of Porto. IFSP has 11 agreements, six with Portugal, two with Spain, one with India and one with Canada, highlighting the concentration of agreements with Portuguese institutions.

The same survey, based on institutional information made available by CEETEPS, identified that the partnerships were also concentrated in Portuguese institutions, especially the Polytechnic Institutes of Castelo Branco, Bragança, Guarda and Santarém. There are

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thirteen agreements with Portugal, six with Argentina, six with Spain, three with Mexico, two with Belgium, two with Chile, and one with each of the following countries: Colombia, United States, France, Holland, Italy, Latvia, Peru, Russia, Uruguay, and one agreement with an institution in Brazil itself.

As for IFSULDEMINAS, the emphasis on partnerships with Portuguese institutions was again identified. IFSULDEMINAS established partnerships with the same partner institutions as IFSP and CEETEPS, besides other polytechnic institutes such as those of Beja, Leiria, Santarém, Tomar, Portalegre, Coimbra, Algarve and Lisbon. There are thirteen agreements with Portugal, eight with Spain, six with Italy, five with Argentina, four with each country: Bolivia, Mexico and Colombia, three with each country: Canada and Peru, two with each country: Ecuador, Russia and Uruguay, and with Brazil itself, and finally, one with the following countries: Congo, Cuba, the United States, Finland, Paraguay and Turkey.

IFSULDEMINAS and CEETPS present greater territorial coverage in the partnerships, reaching the South-South connections and approaching Mozambique, in Africa, and most of the Latin American countries. Specifically, the emphasis on partnerships with Portuguese institutions was promoted as something related to the ease of linguistic communication through the Portuguese language. In view of this, Brazilian institutions have seen the need to institute effective language policies not only to diversify the territoriality of the exchanges, but to develop academic mobility to attract faculty and students from the most diverse regions of the world, with English as the main universal language.

The approximation with Portuguese institutions although strategic from the linguistic point of view, becomes more onerous for Brazilian institutions because of the standards of living in the European Union. In the first year of the IFSULDEMINAS Academic Mobility Program in 2013, more than 30 students were selected to study in Portuguese institutions in different cities according to the PDI 2019-2023 (IFSULDEMINAS 2018). An important factor for this flow that increased in the following years refers to the fact that some Portuguese institutions provide the benefits of accommodation and food for exchange students.

However, between 2018 and 2020, IFSULDEMINAS has shifted its focus to Latin America. Mexico, Colombia, Peru, Bolivia, Uruguay, Argentina, are countries in which IFSULDEMINAS has concentrated its internationalization energies. This is due to the low cost, a closer relationship with our reality and the fact that the student has at his disposal the development of a language, Spanish, as closer and more accessible to learning, compared to the Portuguese language. Thus, according to data from the PDI 2019-2023, the actions for the financing of student mobility programs, which in 2017 meant an investment of R\$302,577.69, in 2018 totaled R\$301,000.00, enabling exchange students to have academic experiences not only in Portugal, but in other countries, such as Peru, Colombia, Portugal, Argentina, Bolivia, Mexico and Uruguay.

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This expansion did not let the approach with the polytechnic institutes cool down. The IFSULDEMINAS from 2018 began working towards the elaboration and implementation of a double degree program in partnership with these institutions. As a result of this effort, a technical cooperation term was signed in May 2018 with the Polytechnic Guard Institute (IPG). This technical cooperation consists in allowing students from the Civil Engineering course at the Pouso Alegre Campus to obtain double degrees. The agreement enables closer relations between the academic communities of these two institutions, in addition to student mobility and the development of joint projects. With the formalization of the agreement, students of the Civil Engineering course at the Pouso Alegre Campus, from the fifth year on, can enroll in the double degree program. By attending an additional six months at IPG, the student receives the title of Graduated in Civil Engineering and, with one more year, he or she receives the title of Master in Civil Constructions. In the case of the IPG, the student of the Degree Course in Civil Engineering can, starting in the third year, participate in the double degree program by studying another year and a half at the IFSULDEMINAS Pouso Alegre Campus, receiving the title of Bachelor in Civil Engineering.

Besides the continuous contacts with the Federal Institutes, the polytechnic institutes have developed an organized action with other institutions, as is the case of CEETEPS. As of 2019, the Coordinating Council of Higher Polytechnic Institutes (CCSIP) has held events with the academic community of CEETEPS. In the event in 2019, which we attended, we could observe a group of approximately 40 representatives from Portuguese institutions and authorities from the consulate of Portugal. At that moment, the CCSIP representative stressed the importance of the "Portugal Polytechnics" Program which is part of a European educational network entitled "Universities of Applied Sciences Network". Moreover, celebrating the agreement established in 2018 with CEETEPS, the then CCSIP representative pointed out that the main lure for Brazilians is to perform a Portuguese language degree in a country with public safety and that offers certification valid for all of Europe. A remarkable feature of the Portuguese Polytechnic Institutes to be highlighted is that they offer theoretical and practical courses considered of low cost for the undergraduate level, i.e. around 6 thousand euros. This event aimed at attracting Brazilian students took place for the third time in 2020 under the name of 3rd International Higher Education Fair: Portugal in perspective.

These initiatives are aligned with the educational reforms of higher level professional education in Portugal, with its demographic and geopolitical needs in the context of the European Union as it was possible to present throughout this study. It is not possible to ignore that for Brazilian students linked to professional and technological education institutions, the partnerships with polytechnic institutes open opportunities for training and entry into the globalized labor market, however, this does not mean that these opportunities are without contradictions and limits. Hence, it becomes necessary to develop specific studies to evaluate the reach of these partnerships for students. In any case, for technical and technological education institutions, in Portuguese and Brazilian contexts, to strengthen their internationalization initiatives, it is important not only to develop occasional partnerships among themselves, but especially to turn to their effective international articulation with partnerships and dialogues specifically for this purpose.

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## **Final Considerations**

The study made it evident that the Bologna Process has created a paradigm and produced radical changes throughout the European education system. By joining the Bologna Process, Portugal committed itself to the development of a policy and an educational system that has as main references for the professional training of youth the expansion of academic mobility, recognition of titles, cooperation among international institutions, among others.

From this scenario arose the importance of understanding the internationalization of vocational and technological education in the way higher education institutions in Portugal position themselves in relation to the professional and international dimension of education and partnerships with institutions of vocational and technological education in Brazil.

Through the testimonies collected in field research conducted in Portuguese institutions, such as the Polytechnic Institutes of Porto and Coimbra, we realized the complexity of the Bologna Process and the need for deepening and mutual knowledge of policies and educational systems in order to understand the phenomenon of internationalization of institutions of vocational and technological education.

It was observed that it was necessary to understand the modernization process of the Portuguese system considering the changes produced by the Bologna Process and, specifically, the importance and scope that is attributed to partnerships that are not located within the European Union, among which, between the Portuguese higher education institutions, specifically, the Polytechnic Institute of Porto and Coimbra with the Brazilian ones, especially IFSP, IFSULDEMINAS and CEETEPS.

Such partnerships are also due to reasons related to demographic problems and to the European Union's guidelines and funding that have facilitated the expansion of professional education in Portugal as an important locus of human capital formation. It is worth mentioning that despite considering the need to deepen the meanings of the connectivity between Brazilian professional and technological education institutions and the polytechnic institutes of Portugal, what we emphasize in this study is the relevance of the Portuguese experience of professional education that makes it easier and even more interesting for Brazilian similar institutions to develop partnerships, according to the demands of the globalized economy. Thus, the internationalization of professional and technological education from the perspective of the educational offerings and partnerships of Portuguese and Brazilian institutions necessarily involves the type of training desired, that is, internationalized for a highly competitive labor market.

Finally, there are specific challenges regarding technical and technological training both in Portugal and Brazil, as the nature and objectives of this type of training are not always fully understood, especially in new contexts that impose radical changes in organizational and pedagogical processes. Therefore, we understand that to the existing strategies should add the efforts of institutions involved with professional and technological education not only

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to understand about its nature and its social meanings or to place themselves as important spaces of prospection of students in view of professional practice, but as an effective opportunity to build formative projects of internationalization, still quite timid, in the case of Brazil.

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