

A STUDY OF TEACHER TRAINING IN THE UNITED STATES AND EUROPE

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Abstract

Governments and multilateral organizations frequently employ comparative studies, which are receiving increased attention in the contemporary process of globalization. Within the assessment of educational policies, this comparison is used to define the parameters of quality and the models of efficiency, and it allows us to see the roles that policy-makers pursue to confer upon the educators. The present paper focuses on the teacher training for general secondary school teachers in Spain, United States (Texas) and in two small states in Europe, namely Luxembourg and Iceland. In Spain, the adaptation of university degrees to the European Higher Education System (EHES) has resulted in the creation of a new compulsory Master's degree, which is required in order to become a secondary education teacher. In Luxembourg, future secondary school teachers need to pursue their Master's degree abroad, whereas in Iceland and due to new legislation teachers need to complete a Master's degree consisting of 300 ECTS or equivalent, plus training, in order to become a qualified compulsory and upper secondary teacher. The aim of this study is to perform a comparison of the main elements that make up the three models analyzed of teacher training: duration, curriculum (disciplinary training, teaching and practice) and the induction process, in order to draw conclusions that provide elements of analysis for evaluating models of initial teacher training.

Keywords: Initial teacher training, secondary education, master's degree, secondary school teachers, teaching practice

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1. Introduction

The influence of teachers in student achievement is unequivocal, so much that they are considered the most important within school factor for student learning (Hannaway, & Mittleman, 2011). In consequence, education policy in the United States places a great deal of attention on the issue of teacher training. In this regard, the No Child Left Behind Act (NCLB) of 2001 linked teacher competence to content knowledge, verbal skills and student performance (Hill, & Barth, 2004). The first two of these elements are directly linked to teacher preparation, an area that has been transformed as a result of this landmark legislative piece (Brown, 2010). Although calls have been made to dismantle teacher education systems and redefine teacher qualifications (Darling-Hammon & Youngs, 2002), many states follow similar pathways in the accreditation of teachers. Teaching certificates are issued by the states' education agencies for specific academic subjects and grade levels (elementary, middle and high school). Prior to requesting a teaching certificate, teacher candidates need to have obtained a bachelor's degree with coursework in the subject they will be teaching as well as pedagogy and teaching methods. A practicum or student teaching is also required as is passing a series of examinations in pedagogy and content knowledge (Ingersoll, 2007).

On the other hand, the European Union (EU) launched the European Higher Education Area (EHEA) in 2010 in the context of the Bologna Process "to ensure more comparable, compatible and coherent systems of higher education in Europe" (European Higher Education Area, 2014). As a consequence of this supra-national initiative, a total of 47 countries committed to reform their national qualifications frameworks for higher education, including the degree permitting access to the teaching profession. The EHEA initiative has resulted in significant changes in the way countries in the EU train their teachers (McKenzie, Santiago, Sliwka, & Hiroyuki, 2005; Enders et al., 2006; Zgaga, 2006). Whether the effects will be positive or negative and what tendencies these reforms have raised in terms of teacher education is still unclear as the empirical evidence is still small (Witte, Huisman, & Purser, 2009; Bauer, & Prenzel, 2012). Recent international comparative studies on teacher education (Witte, Huisman, & Purser, 2009; Schmidt, Houang, & Cogan, 2011; Tatto, & Senk, 2011) deliver no direct evidence of consequences. Almost 90 percent of EU member countries and 70 percent of higher education institutions have implemented the Bachelor's-Master's degree system in teacher education according to the requirements of the Bologna Process (Witte et al., 2009; Surssock, & Smidt, 2010). Teacher training at all levels is provided mostly in universities, and countries like Spain and Luxembourg have updated teacher education to university level (Bauer et al., 2011). Other countries like Iceland are still in the process of

upgrading compulsory and upper-secondary teacher education, and since 2012 it is necessary to complete a Master's degree to become a qualified teacher (EURYDICE, 2011).

The current discussion on teachers revolves around the quality of the initial teacher training, teaching and learning in schools and, as a result, the effectiveness of teachers (OECD, 2010). The results of the Teaching and Learning International Survey (TALIS) (OECD, 2009) reflected the teachers' development needs for various important aspects of their work, thus giving some hints on what to take into account when designing teacher education (Ostinelli, 2009). This paper promotes the idea that these principles must be translated into specific programs and strategies within the current teacher training framework, so as to bridge the gap between the initial training and the teacher profession, the teacher's routines, and the professional cultures (Nóvoa, 2009).

The most cited areas of need in the aforementioned survey were the following: teaching students with special learning needs, integrated co-teaching skills, classroom management, instructional practices, subject knowledge, student counselling, content and performance standards, student assessment practices, teaching in multicultural settings, and school management and administration (OECD, 2009). The survey showed that "being a teacher today in Europe does not mean the same as 20 or 30 years ago" (Ostinelli, 2009, p. 291) and that these important issues should be taken into account when configuring teacher education in a changing world (Desjardins, 2012; Looney, & Gordon, 2011). The fact that among other aspects the second phase of TALIS (TALIS 2013) focused on the initial teacher training reveals its importance for the entire educational system (OECD, 2012a).

2. Methods

The purpose of this study, consequently, was to examine the preparation and qualifications of secondary teachers in four countries of the Organization for Economic Cooperation and Development (OECD): Iceland, Luxembourg, Spain, and the United States. In the case of the latter, the high level of decentralization in the area of education entails that an examination of teacher training practices needs to focus on specific states of the union. This paper will examine how one of the states, Texas, manages pre-service teacher training. Texas is unique in which it was at the vanguard of the high-stakes accountability reforms leading to NCLB (Brown, 2010). This state is also unique in the demographics of the student population: More than half of the students are Hispanic. This high level of diversity is mirrored in Spain, Luxembourg and, to a lesser extent, Iceland. Past and new migratory trends and the growth of certain ethnic groups account for this high level of cultural, linguistic and ethnic diversity in the four political units analyzed in this study. Also, the four selected entities represent a wide

range of responses to the demands placed upon them by higher levels of government, the EU in the case of Luxembourg, Iceland, and Spain and the United States in the case of Texas.

To address the issue of the preparation of teachers, this cross-national study used comparative methodology. The research primarily focused on document analysis and internet research (including various EU and US databases). The use of comparative data allowed us to study different socio-educational realities in search of alternatives to analyze and interpret specific models. The goal was to transfer experiences (Phillips, 2000), to establish bridges across cultures (Crossley, 2008) and provide global perspectives (Cowen, 2009) that help in the decision making process.

In the case of the United States, the federal legislative piece known as The No Child Left Behind (NCLB) Act of 2001 and the Texas Administrative Code (TAC) were analyzed. The sources of data for the analysis of the three EU countries were the official European Commission Reports on national education systems and TALIS surveys (EURYDICE, 2011, 2012; Ministerio de Educación, Cultura y Deporte, 2013). Guiding the study, and using Ingersoll's model (2007), the overarching research question was formulated as follows: What are the preparation requirements and standards to become a teacher in Iceland, Luxembourg, Spain, and the state of Texas? Three elements were specially examined: the duration of the teacher preparation programs, the curriculum, and the induction process. These three elements are, in our view, key variables in the analysis of the secondary teacher training models.

One of the aspects considered in this study is the curriculum. Traditionally, the content of the curriculum was determined by the area of specialization of the teacher (Braslavsky, 1999). However, the trend is now to bestow a greater importance to pedagogical concepts. This study allowed analyzing the extent to which is the case for the four political units selected. The length of the training is another of the elements that was analyzed in this study. The focus, in this case, was to reflect on the suitability of the teacher-training model, consecutive or concurrent. The first involves an extensive training in the context of a bachelor's degree followed by a practicum. In a concurrent model, the content area and the pedagogical trainings coexist, with a greater emphasis in the latter. However, although the concurrent model underscores the importance of the pedagogical component of teacher training and the consecutive model highlights content area training, there is no empirical evidence that either one of the models brings the best results. Nonetheless, recent studies identify the concurrent model as the most popular one among European countries (Eurydice, 2012).

A third element considered in this study is the induction period. In this regard, research indicates the significance of the first few years of teaching. This initial period defines and shapes the professional style, values and ethics of teachers (Marcelo, 2009).

Accordingly, first the educational policies that have shaped the teacher training models in the four political units objects of this study will be analyzed. Then, we will draw a series of conclusions comparing the three aspects outlined in this section.

3. Teacher Training in Iceland

The importance of education as an essential factor for future progress, particularly in times of economic crisis, is unquestionably recognized in Iceland. Wide changes have taken place with a direct and indirect influence on the educational system, increasing the demands on teachers, both in analyzing social changes and carefully adapting their teaching to fit the new situation (Ragnarsdóttir, & Jóhannesson, 2014). The Icelandic Teachers' Union is concerned about the fact that teachers must be ensured enough time to prepare for the new responsibilities (Icelandic Teachers' Union, 2012). Fortunately, during the last ten years the Icelandic government has maintained high levels of funding at all levels of education and the PISA 2012 survey (Table 1) situated Iceland significantly above the OECD average in regards to the reading and mathematics scales (OECD, 2013).

In Iceland, all education is under the aegis of the Ministry of Education, Science and Culture. Compulsory education is composed of primary and lower secondary education; it generally takes place in the same school, and it is mandatory for children and adolescents between the ages of 6 and 16. The municipalities control pre-, primary and compulsory schools, whereas upper secondary schools (for students between the ages of 16 and 20) and higher education institutions are run by the state. Seven institutions build up the higher education system, three of which are private (EURYDICE, 2011). The Act no. 87/2008 on Education and Recruitment of Teachers and Head Teachers in Pre-School, Compulsory School and Upper Secondary School changed the requirements in regards to initial training for teachers starting in the fall of 2011. The new legislation specifies that the minimum requirement for teachers at all school stages is a five-year master's degree instead of the former three-year bachelor's degree (UNESCO, 2012).

As specified by articles 4 and 5 of Act No. 87/2008, a professional certification for Compulsory School Teacher and Upper Secondary School Teacher may only be granted to those that have completed:

- A master's degree from a university that has been accredited by the minister on the basis of the Higher Education Act no. 63/2006, in an accredited study field providing compulsory/upper secondary school teaching education; or

- Studies equivalent to a master's degree, which the minister recognizes as being equivalent to compulsory/upper secondary school teaching education (Ministry of Education, Science and Culture, 2008).

Iceland has the highest student age (20 years) for concluding upper secondary studies and consequently for starting higher education studies (EACEA/EURYDICE, 2012). Due to the limited number of vacant places for trainees at universities, each institution defines the admission requirements and implements a selection process. Academic results (particularly Icelandic language skills), extra training, work experience, involvement in social organizations and references are some of the criteria used (EURYDICE, 2011; Ministry of Education, Science and Culture, 2012a). The University of Iceland, the most important higher education institution in the country, currently provides teacher education at the master's level. There are more alternatives for specialization now than ever before, and increased professionalism, job satisfaction and career opportunities are promoted by the new legislation. Teachers trained in the consecutive model at the University of Iceland and Akureyri University are specialists licensed to teach their specific subject at the lower secondary and upper secondary levels (Ministry of Education, Science and Culture, 2012a, 2012b).

Teacher training consists of two parts after which a Master's in Education (M.Ed.) degree is conferred, in accordance with Act no. 87/2008. The first part of this five-year program comprises a three-year program toward a Bachelor in Education (B.Ed.) degree (180 ECTS). The concluding part consists of a two-year program toward a M.Ed. degree (120 ECTS) or a longer duration if carried out on a part-time basis. Bachelor degrees from other higher education institutions are accepted when applying for admission in the M.Ed. program. At the University of Iceland, future upper secondary school teachers choose their master's degree programs within the College of Teacher Education, once they have completed their bachelor degrees in an upper secondary school subject with a first class grade (7.25/10).

The M.Ed. mandatory core courses are structured as campus-based. Courses are narrowly connected to the field, and practical training is combined with academic studies. All students are assigned a school for their practical training (EURYDICE, 2011). Coursework is divided into core courses in pedagogy (40 ECTS), methodology and theories in educational studies (20 ECTS), courses on a specific field of study in upper secondary schools (30 ECTS), and final thesis (30 ECTS). The master studies are significantly based on independent reading and projects, which require a certain level of critical thinking and analytical skills. Student teachers are supposed to use the many paths offered by the information society in terms of gathering and sharing knowledge. Independent work methods, teamwork and initiative are also required. Several courses comprise seminars, group discussions and cooperative studies, and

demand the active participation of students. In summary, student teachers must attain the following competencies during their training:

- Knowledge and understanding of the main research methods in education, recent theories of learning, teaching and schooling, applying theories, critical thinking, and facing urgent challenges in contemporary education and schooling.
- Practical skills for using work methods, theoretical knowledge and research findings, creativity in developing professional ideas, decision taking, processing, assessing and interpreting gathered data related to education and schooling.
- Theoretical skills to be able to tackle new situations take an active part in the discussion of learning, teaching and schooling in contemporary society, initiate research and development projects and manage the work of individuals and groups.

Table 1. Global context in Spain, Luxembourg, Iceland and United States (2013)

Indicator	United States	Spain	Luxembourg	Iceland
GDP (\$)	53,143	29,118	78,668	45,263
Public spending on Education (% GDP)	5.4	4.6	4.7	8.1
Public spending on Secondary Education (% GDP)		3.1	2.9	5.1
Overall reading scale (PISA)	498	488	488	482
Mathematics scale (PISA)	481	484	490	492
Science scale (PISA)	497	496	491	478
Inhabitants	319,173,872	47,190,493	511,840	319,368
Immigrants (%)	13	12.1	41	6.8
Gross salary teachers (€) (min.- máx.)		31,411-46,591	75,997-132,101	30,669-40,809
Actual average salary for teachers (€)	36,141 (US\$)	No data	104,049	32,958

Notes: GDP = Per capita gross domestic product; * = in 2008, ** = small states with GDP higher than the average of OECD. (OECD, 2012b; OECD, 2013; Ministry of National Education and Vocational Training – SCRIPT/ADQS, 2011; STATEC, 2012; IMF, 2013)

4. Teacher Training in Luxembourg

The Luxembourgish educational system is influenced by the political, economic, demographic and linguistic characteristics of the country. As one of the smallest EU states, the low number of residents (Table 1) has vast consequences on the educational offer available, which has to be reduced to courses and programs that are expected to attract a critical mass of students. A strong tradition of educational mobility has therefore been established in the field of higher education (Ministry of National Education and Vocational Training – SCRIPT/ADQS, 2011). For general secondary education (lower and upper secondary

education), prospective teachers usually pursue their master's degree abroad and subsequently complete their professional training within the country.

Luxembourg is a trilingual country (French, German and Luxembourgish) and the languages spoken by immigrants who amount to 43 percent of the population (Table 1), as well as English are gaining importance. This multilingualism is also reflected in the educational system. Luxembourg has the highest proportion of students who do not speak the language of instruction at home and the highest number of foreign languages learned per student. During the PISA survey 2012 (Table 1), Luxembourg was the only country being assessed in two languages: German and French (OECD, 2013; STATEC, 2012; EURYDICE, 2012; Weber, & Horner, 2012).

Teacher training is regulated by the Act of June 10th 1980, but has undergone several changes over the last three decades. The most important change took place with the creation of the University in Luxembourg in 2003. This allowed to combine previously independent institutions in one structure, and to design an academic offer that responded to the Bologna system (MEN, 1980; EURYDICE, 2010; MENFP, 2012). Teacher trainees are required to have an accredited higher education degree (a three- or four-year bachelor's degree, plus a one- or two-year master's degree). Furthermore, all future secondary education teachers are required to possess a good knowledge of the three official languages and of the Luxembourgish educational system. The next hurdle they need to overcome is a national recruitment examination, which qualifies them to access the profession. Civil servant status is only granted following a positive achievement of the two-year probationary period (MENFP, 2010).

The initial education of teachers for secondary education in Luxembourg follows a consecutive model, and a program of professional training in pedagogy and teaching occurs during the final on-the-job qualifying period and lasts for at least two years (stage pédagogique) after the state examination. The professional training program is prepared by the University of Luxembourg and is combined concurrently with one-year teaching practice in schools. Lastly, the final examination consists of two evaluation lessons, a pedagogical project and an assessment on educational law. After successfully finishing this induction program, the teacher trainee is assessed by a jury consisting of a state commissioner, a school principal and three secondary education teachers from the same subject field.

The candidates' training program for secondary education in Luxembourg is organized according to the following principles: Modular and specific subject training, alternating training in schools and at the University of Luxembourg, and progressive integration into the teaching process through a tutorial system and in the following five areas:

- Educational sciences
- Methodological teaching skills
- Pedagogy and education: Student diversity
- Legislative and institutional framework
- Personal project

The candidates' teaching load varies between 7 and 18 hours per week, carrying out this task with the assigned tutor who guides them and thus warrants the gradual integration into the teaching profession and helps in reaching the required competencies. The candidates propose extracurricular activities as part of a personal and autonomous project, and its content is discussed and approved in advance by the subject coordinator. After the first and third terms of their training, the candidates meet with their tutor, the subject and the module coordinators. These sessions allow a review and update of the work done, and help identifying the tasks needed in order to improve the skills that the candidate has not yet fully mastered. After each interview, the student teacher needs to develop a self-assessment document of his training course. The criteria for the assessment of teacher trainees are summarized in the list of reference skills (Shewbridge, Ehren, Santiago, & Tamassia, 2012):

- Communicating with internal and external school partners
- Constructing one's own professional project
- Being familiar with the institutional framework of the educational system
- Monitoring the learning activities reflecting student diversity
- Adjusting learning in a formative aspect
- Using information and communications technology
- Exploring school and socio-cultural data with respect to students
- Assessing and evaluating student knowledge and know-how in view of certification
- Defining the psycho-pedagogical and disciplinary knowledge
- Assisting students in becoming independent and building their own personal projects
- Constantly reflecting actively with respect to practice
- Participating actively in school development
- Assisting the student to become independent in school and socio-cultural skills.

The Luxembourgish teacher training offers a framework for future teachers to develop their own training plan autonomously and responsibly. In this sense, the candidates are the authors of the construction process of subject and pedagogical knowledge throughout their

future careers. Thus, through the different teaching situations offered during the induction phase, they are encouraged to develop their skills in accordance with the prescribed competency framework.

5. Teacher Training in Spain

In Spain, the training of secondary education teachers has only received increasing importance in educational policy during the last few years. Until 2009, the existing model (set during Franco's dictatorship) was ineffective, impractical, disorganized and socially undervalued (Benejam, 2004; Imbernón, 2007; González, 2009; Puelles, 2003). The social changes during the last decades showed that the former training model was not responding to the needs of the trainees. One of the most significant characteristics is the enrollment of many immigrant students in Spanish schools. Currently, the immigrant population represents 12.1% (Table 1) of the total population in Spain (2.2% in 2000). According to official data, most immigrants originate from the EU, Latin America and the Maghreb (Ministerio de Empleo y Seguridad Social, INE, 2010). This situation affects the educational planning, since almost 80% of the teachers are concerned about training in intercultural education and recognize not having adequate language skills to promote integration in multicultural classrooms (Alegre, 2008; García, Castilla, & Rubio, 2012; Yanes, 2012).

During 2009, the Spanish government restructured the training of secondary education teachers in order to adapt it to the EHES, establishing a single master's degree (Máster Universitario en Profesorado en Enseñanza Secundaria Obligatoria y Bachillerato, Formación Profesional y Enseñanzas de Idiomas - MAES). The new curriculum consists of 60 ECTS credits, to be accomplished, preferably, in one year. Future secondary school teachers may access the MAES once they have completed a four-year bachelor's degree in a secondary school subject. The Spanish teacher-training model is a consecutive model; first students receive general education in order to obtain a degree in their specialty subject or branch of study. At or near the end of this period of study, they enroll in a program of initial professional training, enabling them to qualify as teachers (Ostinelli, 2009). A further requirement to apply for admission in the MAES is the achievement of the foreign language proficiency equivalent to level B1 of the Common European Framework of Reference for Languages.

The MAES comprises two modules, one general and one specific (12 and 24 ECTS, respectively); teaching practices (10 ECTS); an elective module (8 ECTS) and a final essay (6 ECTS).

The general module examines items such as:

- Learning and personality development.
- Processes and educational contexts.
- Society, family and education.

The specific module is composed of three groups of subjects:

- Additional subject training.
- Learning and teaching of the different subjects.
- Teaching innovation and introducing educational research.

The teaching practices, as well as the final essay, are subjects where the student teachers should implement the knowledge acquired during the academic training in secondary education schools. During the teaching practices, a professional tutor is responsible for coordinating, examining and appraising the student teacher at the allocated school (assessment report). Moreover, an academic tutor at the university (academic coordinator), in synchronization with the professional tutor in school, is responsible to assess and sign the transcripts of records according to the assessment report.

The final essay consists of a project, a report or study involving the application of the acquired knowledge during the MAES degree. First and foremost, this is an opportunity for implementing and developing knowledge during the teaching practices reflected in any event, in light of the theoretical contributions. The essay must necessarily start from the experience gained during the stay in school, the work conducted, and the analysis and assessment.

Briefly, the MAES degree methodologically establishes two periods. The theoretical period is taken essentially through master classes combining several methodological strategies, such as alternating individual and group activities, and it promotes constructive resolution of problems arising during the study of the subject. The practical period takes place in secondary education schools under the supervision of a tutor, and its aim is basically to understand and reflect upon the key processes at schools. The student teachers need to become aware of the complexity of teaching. Furthermore, they are required to develop certain attitudes like adaptability, teamwork, pursuit of improvement and innovation through systematic data collection and assessment.

After finishing the MAES degree, those who wish to become a teacher and civil servant must pass a state examination during which they are required to demonstrate their abilities and skills in their own subject. The first part of this selective examination is to prove the knowledge

and ability to plan a class, whereas the second part assesses teaching experience, academic training, and lifelong learning.

6. Teacher Training in Texas

The dominance of local governance in the American public education system (Wong, & Farris, 2011) is a direct consequence of the 10th amendment of the United States Constitution, which bestows the powers not regulated by the constitution, such as education, to the states (Dennis, 2000). However, this independence from higher levels of government has been severely curtailed in the last half century and schools today are subject to a high degree of scrutiny at the state and federal levels (Ingersoll, 2007), the latest example being the Common Core Standards for the subjects of mathematics and English language arts. Nevertheless, it can be affirmed that the American educational system is still highly decentralized. The significance of this decentralization is that each state in the union sets its unique certification requirements regulating the teaching profession.

As English language learners continue to be the fastest growing group of students in K-12 schools (Palmer & Snodgrass Rangel, 2011), Texas is attempting to adapt to the increasingly diverse student population. This requires training educators with the intercultural understandings needed to teach in a state where more than half of the K-12 student population is Hispanic (51.3% as of the school year 2012-2013) but where almost two thirds of the teachers are White (Texas Education Agency, 2014). Tables 2 and 3 show a complete breakdown of the teacher and student demographics in the state of Texas.

Table 2. Ethnic Distribution of Students in Texas

Ethnic Distribution	Count	Percent
African American	637,934	12.8%
Hispanic	2,530,789	50.8%
White	1,520,320	30.5%
American Indian	22,224	0.4%
Asian	176,755	3.6%
Pacific Islander	6,227	0.1%
Two or more races	83,871	1.7%

Source: Texas Education Agency

The second half of the twentieth century witnessed a fundamental change in the preparation of teachers in the United States. Multiple certification systems emerged during this time, effectively ending the monopoly of universities (Mitchell, 2011). These pathways to

teaching are known as alternative certification programs. However, the most common route toward teacher certification still is through an accredited institution of higher education (college or university). Prospective teachers need to complete an academic major in addition to the necessary teacher-training program and comply with the certification requirements regulated in Title 19 of the Texas Administrative Code (TAC). This legislative text gives the responsibility for teacher preparation to both the educator preparation programs and the state's public and private schools. It is important to note that it is the state of Texas, which provides participants in education prepares the certification that will enable them to teach. The role of the universities and alternative certification programs is to recommend candidates for certification in one or more fields.

Table 3. Ethnic Distribution of Teachers in Texas

Ethnic Distribution	Count	Percent
African American	29,897	9.2%
Hispanic	79,116	24.4%
White	205,476	63.4%
American Indian	1,310	0.4%
Asian	4281	1.3%
Pacific Islander	256	0.1%
Two or More Races	3,808	1.2%

Source: Texas Education Agency

With regard to the admission to a teacher preparation program, candidates to the teaching profession must be enrolled in an accredited institution of higher education or, in the case of candidates for an alternative certification or a post-baccalaureate program; they must have a four- year degree earned at an accredited institution of higher education. Candidates need to have a grade point average (GPA) of 2.5 (in a scale of four) in their last 60 U.S. credit hours (120 ECTS). In addition to this, students applying for admission in a teacher preparation program need to have taken 12 U.S. credit hours (24 ECTS) in the subject in which they will attempt to become certified. They also need to demonstrate basic skills in reading, writing and mathematics.

The coursework in the teacher preparation program is based on both the educator standards approved by the State Board for Educator Certification (SBEC) and the Texas Essential Knowledge and Skills (TEKS) for the particular certificate that the candidate seeks. This curriculum includes topics such as child development, motivation, learning theories, and special populations, to name a few (for a complete list, see Table 4). Coursework must include a minimum of 300 clock-hours. At least 30 clock-hours of field-based experiences and 80

clock-hours of coursework must be completed before student teaching which is the practicum that candidates must complete in a school. The period of student teaching must be at least 12 weeks on a full-time basis.

Table 4. Curriculum Topics of Educator Preparation Programs in Texas

Curriculum Topics
Subject area reading instruction
Code of ethics and standard practices for Texas educators
Child development
Motivation
Learning theories
TEKS organization, structure, and skills
TEKS in the content areas
State assessment of students
Curriculum development and lesson planning
Classroom assessment for instruction/diagnosing student needs
Classroom management/developing a positive learning environment
Special populations
Parent conferences/communication skills
Instructional technology
Pedagogy/instructional strategies
Differentiated instruction
Certification test preparation

In an effort to increase teacher retention and provide support to new teachers, teacher candidates are assigned a cooperating teacher during their period of student teaching. Also, a field supervisor, typically a faculty member from the university where the teacher candidate is enrolled, provides guidance and ongoing support. This field supervisor documents the observations and provides written feedback to the student teacher. A minimum of three 45-minute observations must be carried out in the 12-week student teaching period.

All teacher candidates are required to pass the Texas Examinations of Educator Standards (TExES). This test is developed and administered by Educational Testing Service (ETS), an independent contractor, in cooperation with the SBEC (Rosado, & Lara, 2012). The TExES tests are criterion referenced and measure the candidate's knowledge in the field in which they are seeking certification as well as in pedagogy and professional responsibilities (Educational Testing Services, n.d.).

7. Comparing Secondary Teacher Training Models

The first aspect to be considered in the comparative analysis of the four political units relates to both economic and social characteristics. As for the GDP per capita, it is noteworthy that Luxembourg enjoys the second highest GDP in the world according to the International Monetary Fund (IMF), while Iceland and Spain rank 21st and 26th, respectively, with a GDP of over \$30,000 (IMF, 2013). The United States ranks 10th. Furthermore, gross salaries of secondary education teachers in Luxembourg double or even triple the amount received by Spanish and Icelandic teachers (Table 1). These economic indicators do not seem to be directly related to the amount of money invested in public education in the three E.U. countries. In the United States, public spending on education is slightly below the average of the three E.U. countries (5.4 and 5.8%, respectively). However, very significant differences can be found in relation to the number of inhabitants and to immigration. In regard to the latter, Luxembourg presents a much higher percent of immigrants within the total population than Iceland and Spain. In the United States, the immigrant population is slightly above that of Spain (13% and 12.1%, respectively). Undoubtedly, all these factors influence the characteristics of the models of teacher education.

7.1. Training model and duration

In the framework of the European educational reforms, the teacher-training models in the three E.U. countries agree to follow a postgraduate, university model adapted to the EHES. With regard to duration, the three countries have different models. Spain is one of the few EU countries implementing a 4+1 model (postgraduate degree). This model, initiated in 2009, departs from the traditional training for secondary school teachers in Spain based on a pedagogical course (the *Certificado de Adaptación Pedagógica* or CAP). This course, mandatory after a five-year degree, lasted one year and was based on lectures. However, in February 2015, the Spanish government issued a decree that has given to universities the freedom to choose whether they prefer to adopt the model 3+2 or 4+1, creating an important social debate (Ministerio de Educación, Cultura y Deporte, 2015).

Iceland, aligning itself with the common teacher-training model within the EHES, has adopted the 3+2 model. In fact, based on Act No. 87/2008, a two-year master's degree was established as mandatory to work as a teacher at any educational level. This training takes place at the College of Teacher Education of the University of Iceland after obtaining a bachelor's degree in education, arts, or science.

The Grand Duchy of Luxembourg has established a training model to address the identity provided by the geographic, economic and linguistic characteristics of the country,

which consists in the recognition of studies from different European countries and which by law accepts the different lengths of foreign programs. The Luxembourgish teacher training model has a duration that can range from seven to nine years. Several models can be combined: a three or four-year bachelor's degree, which is usually done abroad, plus a one- or two- year master's degree, depending on the country where the training is completed. After the master's degree, a period of two to four years of teacher education is completed at the College of Language and Literature, Humanities, Arts, and Education.

In Texas, the most common model of teacher training is one in which pre-service secondary teachers obtain a bachelor's degree in four years. During the first two years, students take courses on different academic areas with a focus on the subject area for which they will eventually be certified. At the end of their second year, students apply for admission into the teacher preparation program at a College of Education. Once admitted, students take courses on pedagogy for the next two years. During the second of these two years, students spend one semester taking courses and observing in schools. After that, students are required to conduct a practicum during their final semester, also known as student teaching. It is during this semester that students usually take their state certification exams. In the case of students pursuing their teacher certificates through a post- baccalaureate program, the model is one in which students spend one year taking courses in pedagogy after having obtained a bachelor's degree. They also need to complete one semester of student teaching.

7.2. Curriculum (content area, pedagogy and practical training)

The fundamental content of the teacher training course curriculum is the same in all EU countries examined: content area, educational theory and teaching methods, and practical experience. However, attention to each of these areas is different in the three models examined.

The importance of the training content is also different in each of the three EU models. In Spain, content area training has greater weight than the generic module, with duration of 240 hours (Table 5). In most cases, the teaching practices are not performed until this second module is completed, although many Spanish universities are already working on alternating teaching practices in schools with the subject or specific module. Something similar happens in Iceland, where content area training has a larger workload than just generic training. Specifically, the workload is distributed in 40 ECTS of compulsory core courses, 20 ECTS of courses in methodology and theories in educational sciences and 30 ECTS of courses on fields of study in upper secondary schools. In Luxembourg, however, usually equal weight is given to subject teaching knowledge and knowledge of the teaching profession. In Texas, curriculum requirements differ depending on the type of certification sought (elementary or secondary).

However, in all cases students are required to complete between 120 and 126 SCH (60 and 63 ECTS) of course work. Students seeking a secondary certification need to complete 21 SCH (10.5 ECTS) of coursework in education as a minor. The rest of the coursework is part of their major area of study.

Table 5. Content of the training modules

SPAIN	LUXEMBOURG	ICELAND	TEXAS
GENERAL MODULE: Learning and personality development Processes and educational contexts Society, family and education	<u>MODULE 1:</u> General and specific didactics Subject teaching	Pedagogy courses Methodology and theories in educational studies	University requirements Professional Development Advanced Electives Electives
SPECIFIC MODULE Additional subject training Learning and teaching of subjects Teaching innovation and introducing educational research	<u>MODULE 2:</u> Knowledge of teacher profession Learning and teaching Assessment, communication and socialization Personal project and analysis of teaching practices	Courses on the fields of study	
MASTER THESIS TEACHING PRACTICES	<u>MODULE 3:</u> MASTER THESIS <u>MODULE 4:</u> Tutoring and supervising by teacher	FINAL THESIS	

The most significant differences between the training models examined can be found in relation to the teaching practicum. The only common point in teaching practicums involves in all cases a complete and exclusive immersion in a secondary school, but the duration or nature of this immersion differs. In all cases, moreover, the practicum is understood as a situation in which candidates must demonstrate and implement knowledge and theories. In Spain, internships have duration of 100 hours and are subject to a dual supervision: in school, a professional tutor is responsible for coordinating, reviewing and evaluating the future teachers (evaluation report). Moreover, an academic mentor at the University (academic tutor), in coordination with the professional tutor, is responsible to assess candidates according to the

evaluation report. However, unlike Luxembourg, both professional and academic tutors are allowed to adapt the monitoring guidelines to the reality of each candidate and teacher-training institution. In Luxembourg, the teaching practices have duration of one year; during which at all times the future teachers are accompanied and supervised by the teacher assigned at school. In Iceland, the course Teaching: Practical Training (10 ECTS) is taught in students' homeschools. Prospective teachers must attend a seminar on Tuesday mornings and conduct practical training of 60 hours over the entire academic year. The practical training takes place during the working hours of each school according to the university timetable. As in Luxembourg, these practices are carried out in parallel with the training within the M.Ed. Students are exposed to the schools from the beginning and get to know through their own experiences the real problems of secondary schools. In Texas, the apprentice teaching or practicum is completed the semester prior to graduation and is the equivalent of seven SCH (3.5 ECTS). Teacher candidates act as classroom teachers for one semester under the guidance of a classroom mentor teacher. In addition to this practicum, students must attend a one-credit hour seminar one night each week.

Finally, all three EU master programs conclude with a master thesis with different durations in each country. Spain establishes a six ECTS master thesis, while in Iceland the final thesis takes 30 ECTS. In Luxembourg, the final project of the stage pédagogique starts in the first trimester of the pedagogical training period and spans over five trimesters. Regardless of the workload of the master thesis, it consists, in all cases, of the development and defense of an academic and research project that summarize the set of skills developed and learned in the training period.

7.3. Assessment

One of the important issues in the study of teacher training for secondary education is the admission to the teaching profession. In Spain, in order to get an employment in public schools, after completing the program described in the previous sections, a mandatory state-examination is required. In the case of Luxembourg and Iceland, the teacher selection system is based on specific examinations, interviews and personality tests prior to teacher training. Selection occurs prior to the training process, which then grants access to a job as a teacher. In the case of Spain, the admission to training is unrestricted and the selection occurs once the training process is completed. Consequently, there is the possibility that individuals trained as teachers may not obtain a job in the public education sector, which limits their professional options to the private sector. In Texas, completion of the degree requirements and graduation

from the program does not guarantee teaching certification. Certification is granted after the candidate has completed the program of study and passed the state certification exams.

Furthermore, the linguistic requirements are considerably different. In Luxembourg, prospective teachers need to demonstrate sufficient language skills in the three official languages of the duchy (German, French, and Luxemburgish). In the United States, only teachers seeking a bilingual certification must pass an exam demonstrating proficiency in Spanish. In Spain, in order to apply for admission in the MAES, the achievement of the foreign language proficiency equivalent to level B1 of the Common European Framework of Reference for Languages is required. Finally, Icelandic prospective teachers must have shown sufficient Icelandic language skills when they applied for the limited vacant places for trainees at universities.

7.4. Induction

The induction phase refers to additional teacher training after the initial education training. This final ‘on-the-job’ phase, which exists only in some countries, is a compulsory period of transition between initial teacher education and the professional life of qualified teachers. It includes an important supportive and supervisory dimension, as well as a formal assessment of teaching skills, and it takes place during the ‘critical’ stage at the commencement of the career, which is generally the first year after qualifying as a teacher, marking the first independent steps as teachers.

This feature was found in our study only in Luxembourg, where the induction lasts two years. It is arranged by the university and includes one year of teaching practice in schools. It is aimed at teachers who are not yet qualified and do not have a license to teach. In Iceland and Spain, there are no statewide induction systems.

In a nine-country cross-national study, Conway, Murphy, Rath & Hall (2009) note that there is unanimity that learning to teach effectively should not be limited to initial teacher education alone. Teacher induction has to be considered as a necessary and critical element in any teacher education reform agenda and as an important element in retaining beginning teachers and assisting them to build effectively on the early teaching bases of initial teacher education.

8. Conclusions

The teacher training models analyzed meet similar instructional and pedagogical structures. However, there is no consensus on the duration or the importance of each training module within the education programs of future teachers. In Spain, almost all universities offer

a master's degree in secondary education for future teachers. The program of study differs little among universities. On the contrary, in the case of Iceland and Luxembourg, both small countries, this training is much more heterogeneous.

Notwithstanding, and after analyzing the four models, we may conclude that the objective of the teacher training is common. The training structure has a professional orientation and aims to train future teachers as mediators between socio-personal development and learning as well as to form citizens capable of making decisions, autonomous and critical within society. In sum, all four models aim to train teachers not only to resolve educational situations, but also to become professionals in reflection, problem solving, research and innovation, who may contribute to future generations of students to be better prepared in order to meet the challenges that they will undoubtedly have to face.

In terms of content, the four models advocate a teacher education that seeks to respond to the new realities emerging in education as a result of the acceleration of social change. Issues such as immigration, information and communications technology, behavior problems, teaching practices and others enrich the perspective of interpreting the analysis of the training models which now arises in countries as diverse as Luxembourg, Spain, Iceland and the United States to address more real than structural problems. The respective governments predetermine the curriculum in all four cases, which, in turn, is subject to political changes. This is usually a common aspect in countries where the access to a job in public education requires state examinations (Maandag, Deinum, Hofman, & Buitink, 2007). Interestingly, this does not occur in Iceland, where the head teachers in school decide on the selection of teachers considering aspects such as previous experience.

No clear pattern seems to appear in regard to the structure of teacher training in the four political entities. It is true that educational policies at the European level have been geared to give significant weight to the teaching practice within the training of future teachers, but, despite that, practice still plays a different role in the three cases. Spain continues to give priority to the academic training, while Iceland and the United States attempt to find a balance by implementing a mixed model. Luxembourg has clearly opted for teaching practice versus academic training only. The prime example of this is the importance given in this country to the induction phase as intermediate process between training and access to the labor market.

The main difference among the four teacher training models is found in the debate on the timing of selection of the teachers for secondary education. The four countries clearly diverge in this aspect, which evidences that perhaps this is still one of the great unsolved problems in teacher training. When should teachers be selected: at the beginning of the training, when entering the profession, or through a phase of qualification in the workplace?

The response to these questions could be the key to defining educational policies, and for that only experience and research may confirm the most appropriate strategies for establishing a universal model of teacher education at this level. According to the McKinsey report, we may agree that "the quality of an education system cannot exceed the quality of its teachers" (Barber, & Mourshed, 2007, p. 7), and that is why it is so important to act on this key factor to obtain quality in education. Therefore, we conclude that a good training and selection of teachers is and should become the cornerstone of any educational system.

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