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Academics' perceptions about the effectiveness of the teacher education curriculum

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Abstract

Many teacher education institutions seem to have problems to make sense of the courses they teach, questioning among other issues the relevance of theory when pracice is compicious by its absence. In this study, a description of the teacher education curriculum in Turku, Finland and in Regensburg, Germany is presented. Subsequently, semi-structured interviews are used to gather academics' perceptions about the teacher education programmes consistency and effectiveness. The first phase of results revealed a list of attributes marked as strengths or opportunity areas of improvement in each university. In the second phase, using the attributes from the first phase, an instrument to measure the effectiveness of the teacher education curricula was designed. The instrument was piloted and its validity and reliability tested in both Finnish and German sample (27 contributors). Results from the reliability test showed Cronbach's α coefficients at acceptable level on five of the six dimensions. Using Pearson correlation the sixth dimension was re-analysed. Results suggested two variables that were not significantly correlated at a 0.01 level. These items were deleted and the instrument's reliability test was successfully completed.

Keywords: curriculum, perceptions, teacher education curriculum, effectiveness

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To:

My mother and father
because only they know
how to love the way they love
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for her love, blessings and prayers
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for their unconditional support
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Ein Abenteuer winkt.

INTRODUCION

Teacher education has been gaining importance in recent years; nevertheless, literature indicates that it faces two important challenges. First, teacher education has been the subject of massive changes. In many countries, extensive research gaps are found concerning teachers' preparation, work and careers (OECD, 2005). As a result, there is an urgent and constant need for research about the processes and outcomes of teacher education curricula, characteristics, mentoring aproaches and types of programming that are best suited to ensure competence in future teachers (Brouwer & Korthagen, 2005).

Teacher education faces a second challenge, opinions regarding the optimal content of teacher education curricula differ significantly. Approaches and models not only are abundant and diverse, but also most of the times ineffective (Schwille & Dembélé, 2007). Many have discussed advantages and disadvantages of these approaches and models. Erixon, Frånberg and Kallós (2001) and Toom, et al. (2010) for example, explored the Research-based approach in teacher education curricula; Cuadra and Moreno (2005) studied an approach that included a flexible curriculum in which professionals with a higher-education degree have the opportunity to choose a career in education, they also investigated the use of ICT to examine, interpret and communicate information to set up partnerships and exchange networks; Darling-Hammond (2000) and Cuadra and Moreno (2005) suggested an approach that mainly included teaching and learning processes; Donald (1995) and Musset (2010) discussed a model focused on the practical application of educational theory; Korthagen, Kessels, Koster, Lagerwerf, and Wubbels (2001) designed a teacher education model based on the idea of the integration of concrete practical problems in real contexts; and, Zeichner (2010) studied a collaborative approach that fostered learning communities. As we can notice, literature shows no consensus about the optimal content of teacher education curriculum, and as a consequence institutions face big challenges while designing effective and updated programmes.

There are many ways in which teacher education institutions can keep educational programmes up-to-date and effective through times of change. One of them is to consider employees' perceptions about it; in this case, employees are academics/teacher educators who work in a daily basis with the curriculum. However large or small an institution is, it is its employees at all levels that can make it or break it. Therefore, it is

of crucial importance to study their needs, drives, expectations and perceptions and aim at responding and satisfying them (Holtsnider & Jaffe, 2012) because employees' commitment is strictly linked to employees' job satisfaction (Ehsan, 2010).

In spite of the widely recognized importance of teacher education curricula and the importance of knowing academics' feelings and perceptions about it, there are rather few studies that focus on this topic; their attention instead has been focused in general on job satisfaction (Ehsan 2010, Perrachione & Rosser 2008; Tillman, 2008; Astrauskait & Vaitkevicius, 2011; Sharma & Jyoti, 2009). Thus, this study aims in one hand to analyze academics' perceptions about the consistency and effectiveness of the teacher education curriculum, and in the other hand it aims to develop an instrument to measure academics' perceptions about the teacher education curriculum effectiveness.

Due to the limitations of time and scope of this qualitative study and knowing that stronger empirical evidence is needed in order to give conclusions and make generalizations, results from the first phase served as the basis to develop an instrument that could serve for the purposes of quantitative research. Future studies, using the instrument developed and validated in this study, can identify factors related to teacher education curriculum effectiveness, and thus design a sustainable plan with strategies to improve curricula.

Difficulties may arise in this paper while trying to define what actually constitutes the conception of curriculum due to its variability, complexity and multidimensional approaches, creating a critical problem of scope for comprehensive analysis (Bray, 2007). Biases were tackled by using document analysis to build a descriptive framework of reference and semi-structured interviews to provide a contextual framework for understanding. Curriculum development is needed to keep institutions effective and modern; without changes and whitout looking what other countries are doing it would be difficult to learn from each other.

2. THEORETICAL BACKGROUND

2.1 History behind curriculum design

In educational research, the word curriculum has been defined by many (Bobbitt; 1918, 1924; Caswell & Cambell, 1935; Tyler, 1949; Taba, 1962). Bobbitt (1918) defined curriculum as "the entire range of experiences, both undirected and directed, concerned in unfolding the abilities of the individual"; or as "the series of consciously directed training experiences that schools use for completing and perfecting the unfoldment" (p.43). Caswell & Campbell (1935) defined it as "all the experiences children have under the guidance of teachers" (p.66), whereas Tyler (1949) considered to be "all the learning experiences planned and directed by the school to attain its educational goals"(p. 79). More recently, Akker (2004) described it as a simple course or track to be followed.

Bobbitt (1918) outlined the first plan of the principles of curriculum planning that included aims, content areas, activities and criteria. After Bobbitt, Caswell & Cambell (1935) designed a new way to develop curriculum with two approaches: the first one regarding the objectives and major functions of the curriculum such as scope and subjects, and the second one related to the sequence of the activities, but this time centred on the interests of the students. Although the four basic principles of Bobbit (1914) are clear repeated by Caswell and Cambell (1935), new details such as materials, teaching procedures, evaluation and organization of the lesson, appeared now in the process of development of curricula. Then, Tyler (1949) gave curricula a new emphasis: attainment or achievement. Later on, Taba (1962) clearly used Bobbitt's principles, Caswell & Cambell (1935) guideline, and the questions of Tyler (1949) to write her seven major steps in curricula design. In this model, diagnosis of the needs was a new step.

After the contributios of Bobbit (1914), Taba (1962), Caswell & Cambell (1935) and Tyler (1949); Akker (2004) offered a wider list of 10 components of curriculum: rationale, aims and objectives, content, learning activities, teacher role, materials and resources, grouping, location, time, and assessment. In these 10 steps, more than 100 years of curriculum development were summarized in a very dynamic way in which Akker drew a spider web where the 10 steps are interlinked, the core or rationale is

drawn in the centre containing the aims and content of learning, thus, when making changes into the rationale, changes in the rest of the elements are expected.

Glatthorn (2000) declared that there are several different types of curriculum that play a significant role in every school or institution. When these curricula are congruent with each other, then "student achievement is improved" (p. 83). These are:

1. Taught curriculum. It is what teachers deliver day by day. It is found in the documents produced by the state, the school system, the school, and the classroom teacher, specifying what is to be taught.
2. Supported curriculum. It includes those resources that support the curriculum, textbooks, software, and other media.
3. Assessed curriculum. It consists of tests and performance measures.
4. Learned curriculum. It is what students actually learn.
5. Hidden curriculum. This is the unintended curriculum. It defines what students learn from the physical environment, the policies, and the procedures of the school.

Taken from Glatthorn (2000), *Figure 1* shows an example of the relationship of these curricula as they interact with each other.

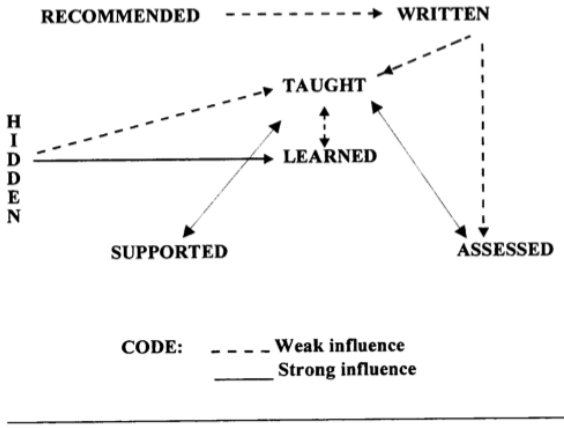

Figure 1. Types of curricula. Adapted from "The Principal as Curriculum Leader: Shaping What Is Taught & Tested", by Glatthorn, A.A., 2000, 2nd edition, p.85. Copyright by the Corwin Press. Adapted with permission.

2.2 The case of Finland

2.2.1 System of education in Finland

Seventy years of hard work in policy development and logical and reflective reforms, have placed Finland as a major international leader in education (OECD, 2010), revealing that people in Finland have a positive attitude towards schooling (Jakku-Sihovonen & Niemi, 2006).

There are two important bodies that lead education, the Ministry of Education and Culture and the Finnish National Board of Education (FNBE). The first one is the responsible body for developing educational, science, cultural, sport and youth policies and international cooperation in these fields, and the FNBE is responsible for drawing up the national core curricula for pre-primary and basic education and general upper secondary education and the national qualification requirements for vocational education and training and competence-based qualifications. Schools, Polytechnics and Universities follow the national core curricula, which determines the objectives and core contents of instruction and learning of each subject. However, the FNBE is not rigidly followed, their core curricula and programs serve as a basis for drawing up local curricula (Aho, Pitkänen and Sahlberg, 2006). Thus, curriculum is seen as a context friendly instrument, which is close to the needs of those affected by it.

The Finnish education system structure is rather simple (Rinne & Järvinen, 2011). It starts from the age of seven with nine years of compulsory education. Primary education comprises grades first to sixth taught by class teachers, lower secondary education comprises grades seventh to ninth taught by subject teachers. Primary and lower secondary education make the Finnish comprehensive school. After the compulsory, comprehensive basic education, the upper secondary education comprises general and vocational education, it lasts three to four years but is rather flexible because students are allowed to complete their studies in two years or as long as four years (Ministry of Education and Culture, 2013). According to the Basic Education Act, the aim of vocational education and training (VET) is to improve the skills of the work force, to respond to skills needs in the world of work and to support lifelong learning. The Finnish higher education system consists of polytechnics (Universities of Applied Sciences) that train professionals responding to the labour market, and academic universities which aim to conduct scientific research (see in *Appendix A* a graphic with

the complete system).

2.2.2 Teacher education in Finland

While talking about the Finnish teacher education career, four main points are considered worth to be described; first, teaching in Finland is one of the most respected professions; second, Finnish teacher education takes place in Universities; third, to become a teacher a master's degree is required; and fourth, Finnish teacher education is research-based.

The teaching profession in Finland was and still is a very attractive profession; it enjoys a high prestige among young Finns and there are always more applicants than free places (Hytönen, 1996). According to the Ministry of Education and Culture (2013), candidates are required to have a completed upper secondary school matriculation examination or a three-year vocational qualification, then, two phases of evaluation are set: the first evaluation phase is based on the scores of the matriculation examination and the second one is done internally by the universities. The second evaluation phase is based on gathering points from a test of reasoning abilities in mathematics and natural sciences, points from the national entrance exam and possible extra points from the General Upper Secondary School studies. It is also important to consider that the teacher salaries also contribute to the attractiveness of the teaching profession (2300 €/month, 24 teaching hrs. /week).

In late 1970s, the responsibility for educating prospective teachers both in primary and secondary level was left in hands of the universities in order to merge core aspects and develop high standards for prospective teachers (Jakku-Sihvonen & Niemi, 2006).

Hytönen (1996) expressed that the principles guiding the teacher education reform and the new degrees were mainly to increase academic level, to standardize education, to re-evaluate the position of pedagogical studies and subject studies and the integration of the theory and practice.

In 1981, the Ministry of education devoted attention to the teaching practice, declaring that it should be gradual and start as early as possible (Hytönen, 1996). By this time, the core curriculum for teacher education was defined as strict and inflexible. The 90s brought teacher education a new wave of reforms. Universities were given freedom to

profile their own curricula, and after this, flexibility and freedom spread a new philosophy between teachers and students, delegating to the teachers the responsibility of building their own teaching and for students their own study paths (Jakku-Sihvonen & Niemi, 2006; Aho, Pitkänen & Sahlberg, 2006).

In 1995 Finland renewed the structure of the Finnish higher education applying the two-cycle or two-tier degree system (Jakku-Sihvonen, & Niemi 2006). Along with the new strategy, a New University Act was adopted in 2004, giving to the teacher education two new phases: the lower academic degree (Bachelor's degree) with 180 credits to be completed in three years, and a higher academic degree (Master's degree) with 120 credits to be completed in 2 years.

Among the objectives mentioned in the Government Decree on University Degrees (2013) for the bachelor's first stage are knowledge of the major and minor subjects, scientific skills and methods, application of theory, and language and communication skills. As for the master's degree, the objectives are knowledge in advance studies, application of scientific methods and knowledge, skills to work independently, knowledge needed for postgraduate education and language and communication skills.

As reported by Jakku-Sihvonen & Niemi (2006) and Niemi (2006), research-based in the Finnish teacher education is seen as a professional culture, prospectus student teachers are taught scientific literacy and both qualitative and quantitative research methods since the beginning of the bachelor's degree, in order to train them to find, analyse and face future work problems. The result of the research-based training is a guided written thesis, in which professors orient students to actively work and think. Thus, student teachers internalize a research-oriented attitude and use it in a daily basis to solve problems and develop their teaching abilities.

2.2.3 Primary teacher education in Turku

The department of Teacher Education in Turku was founded in 1974 and it belongs to the University of Turku, Faculty of Education. The department offers Bachelor's and Master's degree curricula in Class Teacher Education.

According to Jakku-Sihvonen & Niemi (2006), the current research-based curriculum for teacher education was developed during 2004-2005, including academic disciplines

(disciplines taught in school), research studies, pedagogical studies including teaching practice, communication, language and ICT studies, a study plan as a guidance to develop their own effective curricula and career plans and optional or elective studies.

The Class teacher education in University of Turku currently offers a suggested study path for future class teachers (primary school teachers). The Bachelor of Arts in Education has 180 ECTS and it comprises three main parts: Language and Communication, Educational Science and Subjects and Themes in Basic Education. The first part is comprised by communication and language skills including Finnish, English and Swedish oral and written communication. In the second part, an introduction to educational science, sociology of education and three courses on educational psychology are taught. The third part of the study path corresponds to the integrated studies of subjects and themes in basic education; these are the subjects to be taught in the comprehensive schools: Finnish language and literature, Mathematics, History, Religion, Biology and Health Science, Geography, MATHSCI-Empirical Testing and Analysing, MATHSCI-Problem solving and Modelling, Visual arts, Technical-Textile Work, Music, Physical Education and two optional courses (Subject-based course, theme –based course). During the Bachelor of Arts, 40 ECTS are elective or minor studies. The Master of Arts in education has 120 ECTS, 80 of which correspond to Educational science with an emphasis on research and in-depth teacher training, administration and management, learning, teaching and evaluation. During the master studies only 5 to 15 credits are elective. Altogether, a class teacher must complete 300 ECTS (see *Appendix B*).

The practical training takes place in normal schools; they are part of the university and supervised by the Department of Teacher Education. Normal schools are real schools that serve as models of good teaching. In University of Turku, the periods of teaching practice happen four times with different lengths at different stages of their studies. According to Luukkainen (1996) the purpose of the teaching practice is to combine the theory from the courses and demonstrate it through practice, with the support of an experienced supervisor in and authentic learning environment. Hytönen (1996) and Luukkainen (1996) expressed that the integration of the theoretical aspects and the research-based approach with the practical training is essential for the system in order to work well.

2.3 The case of Germany

2.3.1 System of education in Germany

Germany is made up of 16 *Länder* (regions). All *Länder* follow a similar political and educational structure; nevertheless, they are autonomous and free to draw and implement their own curricula. For the purpose of this study, only the school system of *Bayern* (Bavaria) and the teacher education curriculum utilized in the University of Regensburg are described in this section.

According to the *Bayerisches Staatsministerium für Unterricht und Kultus* BSUK (2013), the system of education in Bavaria (see *Appendix C*) offers 13 different types of schools with different focus, requirements, goals and speeds. Begins at the age of 3 with optional Pre-school education or *Kindergarten* that lasts three years, then compulsory education starts at the age of 6 until the age of 18 comprising primary school, lower secondary education and upper secondary education. Primary school offers two options: *Förderschule* or special school for children with learning difficulties (mental, vision, hearing, physical and motor, language, emotional, social or learning development) or *Grundshule* which is the regular primary school that lasts 4 years. At the end of primary school (fourth grade), pupils can go to the lower secondary school of their choice. The first option is *Hauptschule (main school)* which is a vocational oriented school for non-university pupils; it gives qualification for a further vocational education and lasts grades 5th to 9th with an option of grade 10th that gives the students the same educational mobility as graduates from *Realschule*. The second option is *Realschule (middle school)*; it is professionally oriented and qualifies for upper secondary education and especially for *Fachoberschule* or special secondary education, covering grades 5th to 10th. The third option is *Gymnasium* (grammar school), it prepares students for university and offers a large variety of subjects according to different directions of study such as languages, arts, natural sciences, technology or social studies*;* after grammar school the final examination or *Abitur* provides free entrance to tertiary education. The *Sonderschule* or Remedial school is also offered at secondary level and there is also an option starting from year seven to go to a business school.

After year 10, four of the five options that students have to continue with their education are related with *Der Beruf* (the job, profession, occupation); when having an

Intermediate school certificate (*Hauptshule*) a B*erufsschule* or part-time vocational school is offered. In this dual system students learn job-related theory in the vocational school and get on-the-job training in a company. When having special secondary education certificate *(Realschule)*, the *Fachobershule* or upper vocational school is the option. This school provides general education, vocational education and work experience in five different streams: technology, agricultural economics, economics administration and law, social studies and fine arts. It prepares students for professions such as carpenters, electricians, IT professionals, medical assistant, commercial assistant, housekeeping, childcare and elderly care. There are two more options for vocational school, the *Fachobershule* that also provides a general, specialized theoretical and practical education but it starts with practical training since year 11th, and the *Berufsobershule* that trains only in one direction, it needs an apprenticeship or several years of relevant work experience and it includes the grades twelveth and thirteenth. The fifth and last option after upper secondary education corresponds to tertiary education. In Bavaria, students need to accomplish the *Abitur* examination in order to be able to apply to further education. Tertiary education offers three options, the first is the *Universität* (University) that focuses on research and scientific instruction; the second is the *Kunsthochschule* or College of Arts and the third is the *Fachhochschule* (University of Applied Sciences) that prepares students for the professional job market.

2.3.2 Teacher education in Bavaria

Education for primary school *Grundschule* (GS) teachers in Bavaria includes two phases; the first scholarly phase takes place in the university, it lasts from seven to nine semesters (three and a half to four and a half years) up to the First State Examination (FSE). This phase is governed since 2007 by the *Lehramtsprüfung* (Magisterium examination*)* LPO Order I (*Bayerishe Staatsregierung*, 2013) which stands as the legal basis. The second phase corresponds to the practical period *Referendariat,* in the case of GS teachers, it takes place in primary schools and it is supervised by a state organization called *Studienseminar* (study seminar). The practical stage lasts between 18 to 24 months to be completed with the Second State Examination (SSE).

2.3.3 Teacher education in the University of Regensburg

In the specific case of the University of Regensburg, the first phase can be classified as follows: two semesters for basic studies and orientation, four semesters for studies and writing the thesis paper, and one semester for the FSE. The final grade of the university stage is made up 60% by the FSE and 40% by the university module examinations.

According to LPO 1 § 22, in order to become GS teacher, 210 ECTS need to be completed during seven semesters or an average of 30 credit points per semester. The university phase has six components, each component uses Credit Points (ECTS) as measurements of workload (1 credit point= 25-30 hours), the components are: *Fachwissenschaft* (subjects) and *Fachdidaktik* (subject didactics), *Didaktik der Grundschule* (Didactics of the Primary school), *Erziehungswissenschaftliches Studium* EWS (Educational scientific studies), *Pädagogisch-didaktisches Schulpraktikum* (internships), *Zulassungsarbeit* (thesis housework) and *Sonstiges* (electives). The content of each component can be seen in *Appendix D*.

The internships are a significant part of the training for student teachers because they aim to provide students with an extensive overview of the duties of teachers and those of the teaching profession, as well as insights as to whether they are suitable for the intended job or not. The organization of internships for teachers at primary schools is set up in the Internship Office during the first academic stage. According to LPO I §25, §34 and §36, as part of the programme for students to become primary school teachers, five internships must be completed:

I. Internship in a production, further processing, trade or service: it lasts 8 weeks.
II. Orientation Internship: it has 3-4 weeks duration, about 20 hours per week or at least 3 hours per day. A minimum of 1 week must be done in the appropriate school in Bavaria, and the rest at any other school or institution for children and youth services.
III. Pedagogical-Didactic Teaching Practice: during the free-lecture period of about 150-160 hours of instruction at the school of the appropriate type, recommended to be set during the first half of the study.
IV. One-semester course related to pedagogical practical content.
V. One semester course related internship in the respective school.

According to the *Bayerisches Staatsministerium für Unterricht und Kultus* BSUK (2013), the second phase is mainly practical and it is called *Referendariat* or *Der Vorbereitungsdienst.* It is divided into two sections, each lasts 12 months. During the first 12 months, student teachers are autonomous to give instruction and teach eight hours a week in the subjects studied during the first stage except for German and Mathematics. The second section includes autonomous instruction in the subjects studied, 15 hours per week.

Teacher candidates attend group seminars two days a week during the 24 months, these are held at schools in the study seminar district and they are symposium groups for open dialogs and discussion of about eight to ten people. The *Seminarleitung* (seminar leader) guides and prepares the seminars. Some of the topics to be discussed are related to classroom situations or problems, education and politics, school law, etc. The *Referendariat* concludes with the SSE.

2.4 Core professional attributes in the teacher education curriculum

Teacher education programmes are developing all the time. They are made to prepare student teachers to assume the educators' responsibilities, reflect on the purposes of education of every country, and respond to the context that is never static. According to the literature reviewed, teacher education programmes should cover a range of core professional attributes:

a) Knowledge and understanding of the subjects that are to be taught.

Musset (2010) and Cuadra & Moreno (2005) identified that programmes that have an emphasis on the subject matter that is being taught are the most effective. Cuadra & Moreno (2005) called it "Identifying the core issues and the axes" (concepts, postulates, and methods) of knowledge of the subject as the only way to facilitate students' meaningful learning (p. 40).

b) Engagement in current educational problems and develop relevant skills.

A wide range of researchers supports the acquisition of research skills in teacher

education programmes (Erixon, Frånberg & Kallós, 2001; Jakku-Sihvonen & Niemi, 2006; Ritva & Niemi, 2006; Niemi, 2008; Toom, et al., 2010).

Niemi (2008) supported the promotion of evidence-based practice in education and training. She stated that the main components are the following: 1) research competence and research capacity-building starting at the pre-service level of teacher education; 2) working conditions which promote evidence-based practice; 3) the quality of evidence and research; 4) the effective delivery of and easy access to evidence; 5) an evaluation culture which gives space to contextual factors and practitioners' knowledge; and 6) collaborative professional networking (p. 200).

Toom, et al., (2010) considered research-based teacher education to be the answer to the problem of development of high skilled teachers, as with it, teachers are educated to become "autonomous actors with the ability to make rational, theory-based decisions and to consume as well as produce research" (p.339) and consequently meet the challenges of the future.

Erixon, Frånberg & Kallós (2001) identified a tendency in the involvement of research skills in teacher education programmes including: first, to engage teachers and teacher educators in research related to their job; second, to increase research centres; third, to increase the emphasis on the teacher as a researcher and/or at research focusing on teacher's work and practice; and fourth, promotion of research (and post-graduate studies). In their study, they stated that "the future seems promising" for those countries using research skills in their programmes; however, they remained a bit sceptical about the research-based tendency, arguing that teachers in Europe have not acquired the necessary competencies to carry out research, being rare for teachers –and also for teacher educators- to be engaged in research (p.57).

c) Knowledge of approaches to facilitate the learning of pupils.

Darling-Hammond (2000) showed in their study strong research evidence about the importance of a strong understanding of student teachers about the teaching and learning processes, because it is even more closely associated with student achievement than the content knowledge. She stated that teachers should develop "a keen diagnostic eye and a wide repertoire of strategies supporting mastery of challenging content" (p.

33).

Cuadra & Moreno (2005) supported that idea of *Pedagogical Content Knowledge* - specific and specialized knowledge about teaching and learning processes in a particular discipline-, as the type of knowledge most clearly linked to student achievement and the one with the greatest potential to the development of teachers (pp. 108-109). They also suggested the use of information and communication technologies (ICTs) to introduce radical change into the teaching and learning processes, recommending to adopt a critical attitude towards the advantages and limitations of ICT, to use effectively of ICT to investigate, to interpret and communicate information to solve problems, and to use it to set up partnerships and exchange networks.

d) Practical in a sense of being useful, real and functional.

Donald (1995) studied the practical application of educational theory that contributes to professional education. His ideology was based on the idea of using theory for practical matters. In his opinion, theory used to guide practice can help student teachers to think critically and productively about how to teach. Donald gave many advantages to this approach, but also reported that the disciplines that inform such approach were still on sketch. Similarly, Musset (2010) analysed current practices of TEC in OECD countries, she suggested the same practical approach emphasized by Donald, stating that it has considerable advantages as retention (Macdonald, 1999) and improving problem solving skills (Reinhartz, 1999).

Korthagen et al. (2001) designed a teacher education model that takes teacher education into a more realistic scenario. The realistic teacher education approach was based on the idea of integrating concrete practical problems into real contexts. Constant reflection and teacher-student interaction and theory can make TEC work in a more realistic way helping students to understand their learning and development. Their model was called ALACT and included five phases: action, looking back on the action, awareness of essential aspects, creating alternative methods of action, and trial; the last one was considered to be the starting point of another cycle.

e) Flexible as to enable communication and integration

Teacher education curricula not only needs to offer a flexible paths with different options and freedom for elective courses but according to Cuadra & Moreno (2005) it should give the opportunity for professionals with a higher-education degree to choose a career in education with an extra teaching training program.

Not only teachers but also all departments involved in teacher education should remain very close to each other, as it is noticeable that they are trying to reach the same objectives. Zeichner (2010) studied a collaborative approach that fosters learning communities, he maintained that as two heads work better than one, this approach works in a way that members work more effectively together than individually. Also, Zeichner (2010) argued that teacher education institutions need to bring together teacher educators and practitioners by using *"*hybrid teacher educators*"* (p. 94) that work in both, college or university as well as in classrooms; by doing this, the problem of disconnection between what students are taught in universities and their practices in school may be eliminated.

f) Fosters professional development and commitment

Many have come to the question about how to engage teachers more actively in the process of curriculum development as theory supports that throughout this involvement, teachers gain professionalization (Schwartz, 2006). Research in curriculum development shows that curriculum approaches affect teachers' professional development (Craig, 2006) and teachers' curriculum approaches have an impact on student learning and motivation (Eisner, 1990). Shawer (2010) recommended introducing teachers in teacher training institutions, the approaches and strategies to raise their awareness of how they are expected to approach curriculum. However, it seems like curricula are far away from the people who should be contributing in their design and development (Toom, et al., 2010).

2.5 Conceptual map & assumptions

The main characteristics of an effective TEC were found in the literature reviewed, and they are summarized in *Figure 2*.

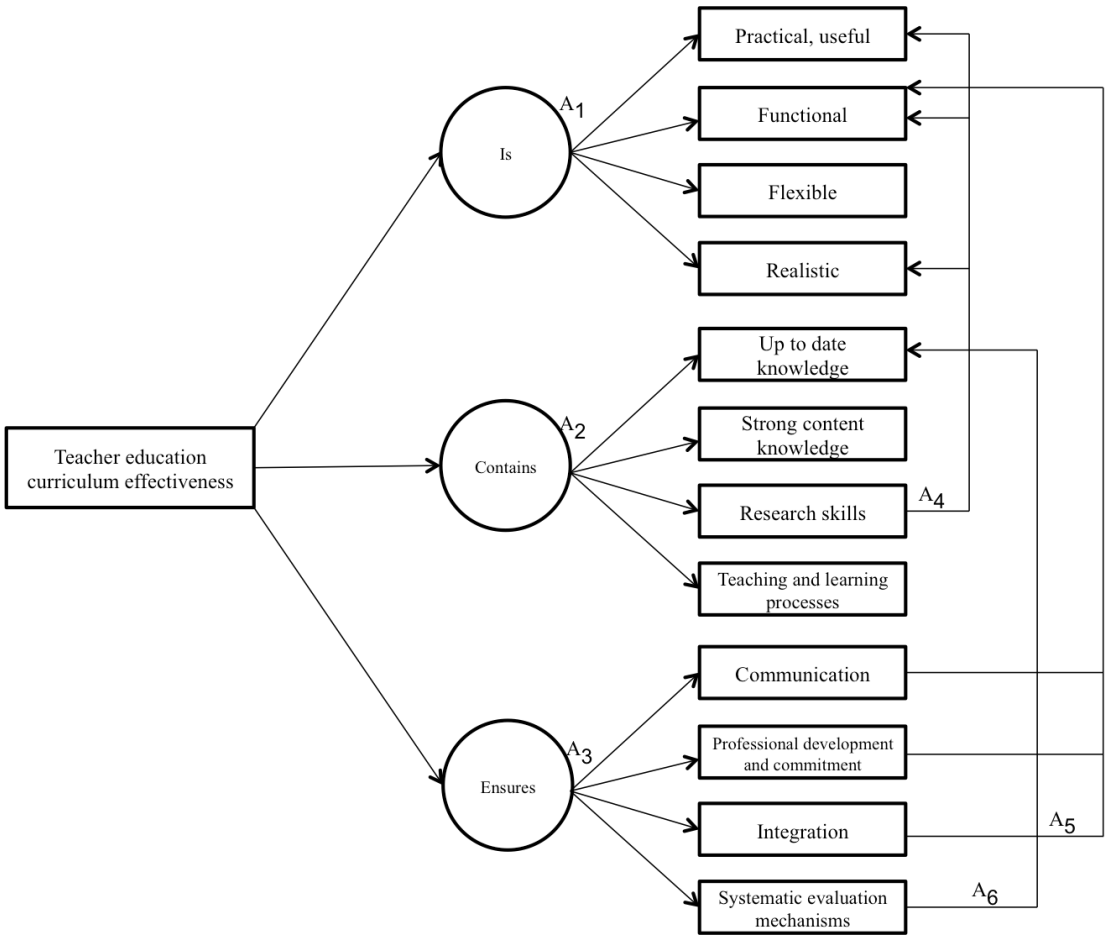

Figure 2. Main characteristics of an effective teacher education curriculum

Assumptions were then formulated:

$A_{1:}$ An effective teacher education curriculum is practical in a sense of being useful, realistic, functional and flexible.

$A_{2:}$ An effective teacher education curriculum contains up to date knowledge, strong content knowledge, research skills and the understanding of teaching and learning processes.

$A_{3:}$ An effective teacher education curriculum ensures communication, integration, professional development and commitment of both students and teachers educators and offers systematic evaluation mechanisms.

$A_{4:}$ When teacher education curriculum contains the acquisition of research skills; it makes it more realistic, useful and functional.

$A_{5:}$ When teacher education curriculum ensures communication, professional development, commitment and integration; it makes it functional.

$A_{6:}$ When teacher education curriculum ensures systematic evaluation mechanisms; it makes it to be up-to-date.

3. AIMS & RESEARCH QUESTIONS

This study aims to investigate how effective teacher education curricula are in reaching their objectives according to academics or teacher educators. Specifically, the purposes of this study were:

- To investigate teacher educators' perceptions about the teacher education curriculum effectiveness.
- To find a way in which the effectiveness of the teacher education curriculum can be measured using teacher educators' perceptions.

Two main research questions were defined and divided into two phases, as answering the second requires the completion of the first:

First phase:

1. What is the academics' perception about the teacher education curriculum effectiveness in the University of Turku, Finland and in the University of Regensburg, Germany?
    1.1 What are the strengths and opportunity areas of improvement of the teacher education curriculum?

Second phase:

2. Based on the results that emerged from the first research question, how could the effectiveness of the teacher education curriculum be measured?

4. METHOD

4.1 Sample

In the first phase, the group of participants comprised of six experts on the field of teacher education curriculum, three from the University of Turku and three from the University of Regensburg. Their position and quantity can be classified as follows in Table 1:

Table 1

Participants first phase

Number of participants	Position
1	Counsellor of education
2	Head/chair of department of teacher education (theoretical)
2	Head/chair of department of teacher education (practical)
1	Professor for educational sciences

In the second phase, an electronic invitation with the design of an online-survey (see *Appendix F*) was sent to all academics/teacher educators using and working with the teacher education curriculum. 27 answers were received: 8 from the University of Regensburg and 19 from the University of Turku, 8 male and 19 female. Their job positions were: head of department for teacher education, professor for educational science, senior researcher and teacher, professor for primary school didactics-reading-writing, lecturer, PhD student and teacher, senior lecturer of Finnish language and literature education, author of textbooks for schools, statistician-professor, teacher training professor and university lecturer in craft science and education. The status of their job, years of service and level of education of the participants can be seen in Table 2.

Table 2

Characteristics of the participants, second phase

Years of service	F	Status of the job	F	Level of education	F
0 to 5 years	8	Permanent full-time	13	Technical/vocational	1
6 to 10 years	1	Permanent part-time	1	College graduate	4
11 to 20 years	6	Temporary contract full-time	9	Some Postgraduate	2
20 or more	12	Temporary contract part-time	3	Post graduate degree	19
Total	27		26		26

* F= frequency

4.2 Instrument & Procedures

4.2.1 First phase

In the first phase, the research data consisted of three interview responses from academics/teacher educators working in different key areas of the teacher education programme at the UT, and three interview responses from similar positions within the UR. The areas were:

1. Theoretical studies
2. Practical studies
3. A person experienced in the development of the teacher education curriculum

As curricula in both universities are different, an interview was design for each participant. Validity and reliability of the interviews was done via triangulation of information among different sources of data (curriculum analysis and official webpages and document analysis) and expert review (see Creswell 2000). An example on an interview can be seen in *Appendix E.*

The steps done in the process of data collection were as follows:

- 1st Step: Academics were chosen according to their positions within each university and an appointment was set for a face-to-face interview. Afterwards, an email that contained an overview of the questions to be discussed was sent.

- 2nd Step: All interviews were audio-recorded and transcribed.

- 3rd Step: Inductive and deductive content analysis was performed to organize data (see Roth, 2005). After codes emerged, categories/attributes were found.

Data collection of this phase was performed with the specific purpose of capturing the teacher educators' perceptions about the teacher education curriculum effectiveness and to depict a complete and diversified view of these perceptions.

The interview answers were analysed using both inductive and deductive analyses (see Roth, 2005). The inductive analysis was done in five steps:

- First step: deep reading and understanding.
- Second step: identify important data.
- Third step: design categories or codes, text segments accompanied them (see categories in the Table 3).
- Fourth Step: establish inks between categories.

Deductive analysis was also performed. In this analysis the theory found regarding the optimal content of a teacher education curriculum was used to see the implications of it with the data from the interviews.

4.3.2 Second phase

In the second phase, the categories/attributes that emerged from the first phase of data collection combined with the main characteristics of an effective teacher education curriculum (*Figure 2*) were used to design an instrument that could measure the academics' perceptions about the effectiveness of the teacher education curriculum. The instrument, a survey named: *Academics' perceptions about the effectiveness of the*

curriculum for teacher education, was made of 53 variables comprising six dimensions (a complete description of it will be found in the Results section).

Experts made the validation of the survey and the Cronbach's α (alpha) coefficient was calculated to measure the internal consistency of the dimensions. The coefficient will show in one hand if the survey items were inter-correlated, and in the other hand if the items were measuring the same construct or dimension.

The instrument was sent electronically to both universities; all teacher educators/academics working with the teacher education curriculum were asked to fill the survey voluntarily.

5. RESULTS

5.1 First phase results

Six interviews were analysed and 23 Categories/attributes emerged. These categories can be found in Table 3.

Table 3

Categories/Attributes

Number	Category/Attribute
1	Individual needs
2	Self worth/confidence
3	Flexibility
4	Integrative
5	Workload
6	Internships
7	Exchange opportunities
8	Cooperation/Partnerships
9	Communication
10	Focused/Profiling
11	Realistic
12	Articulate
13	Steady
14	Trust
15	Functional practice
16	Mentoring/supervision
17	Evaluation and assessment processes
18	Academic degree status
19	Autonomy
20	Functionality
21	Usefulness
22	Research skills
23	Entry requirements

To facilitate the analysis, the attributes were categorized based on the frequency by which they were mentioned in: most often (3 or 2 times mentioned), less often (1 time mentioned) or not at all mentioned. According to the academics, these attributes were good developed or managed by the university (strengths) or were not satisfactory (opportunity areas, improvement areas). In *Figure 3* the strengths of both universities can be seen with the number of frequencies by which they were mentioned, and in *Figure 4 opportunity* areas or improvement areas can be found.

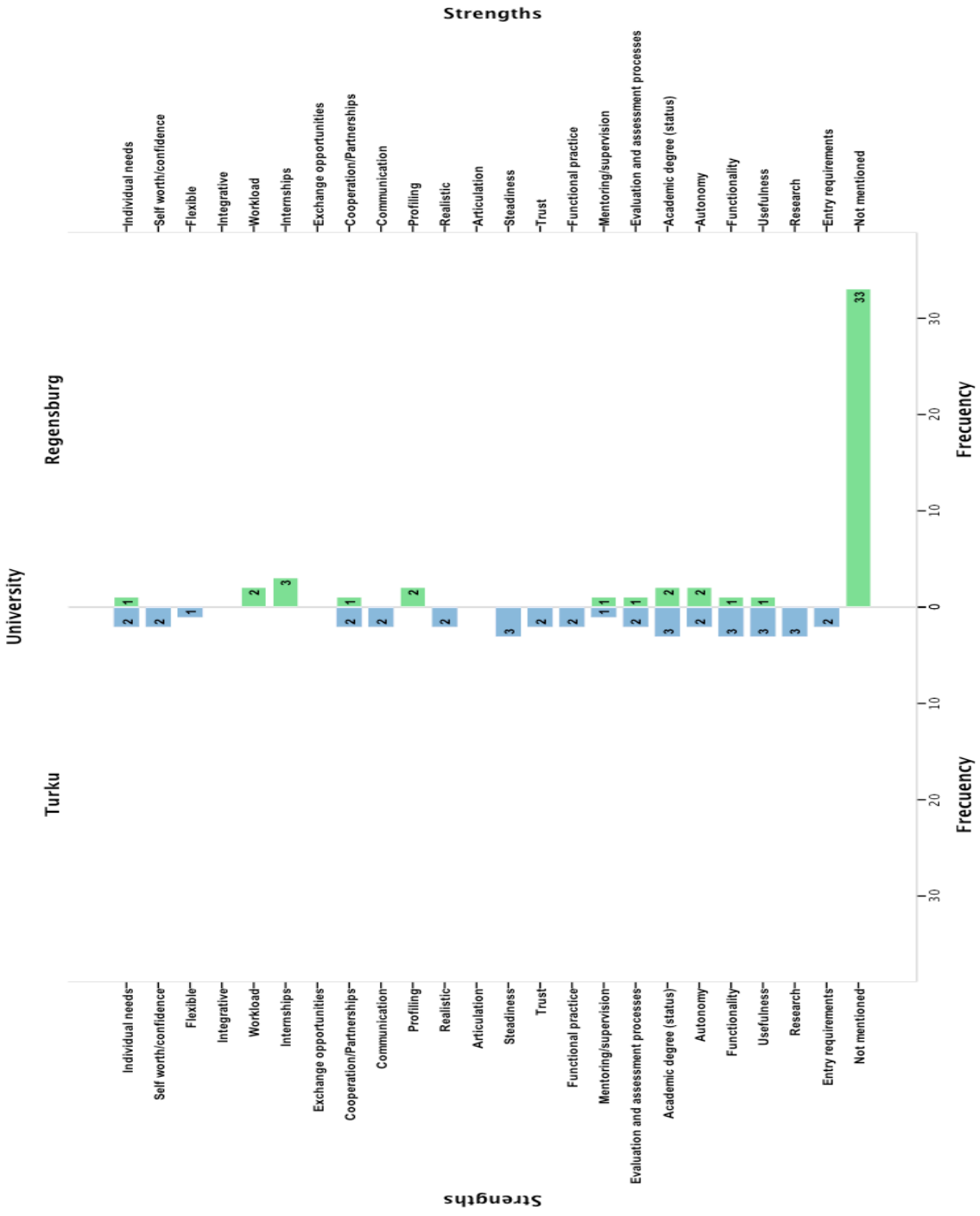

Figure 3. Strengths

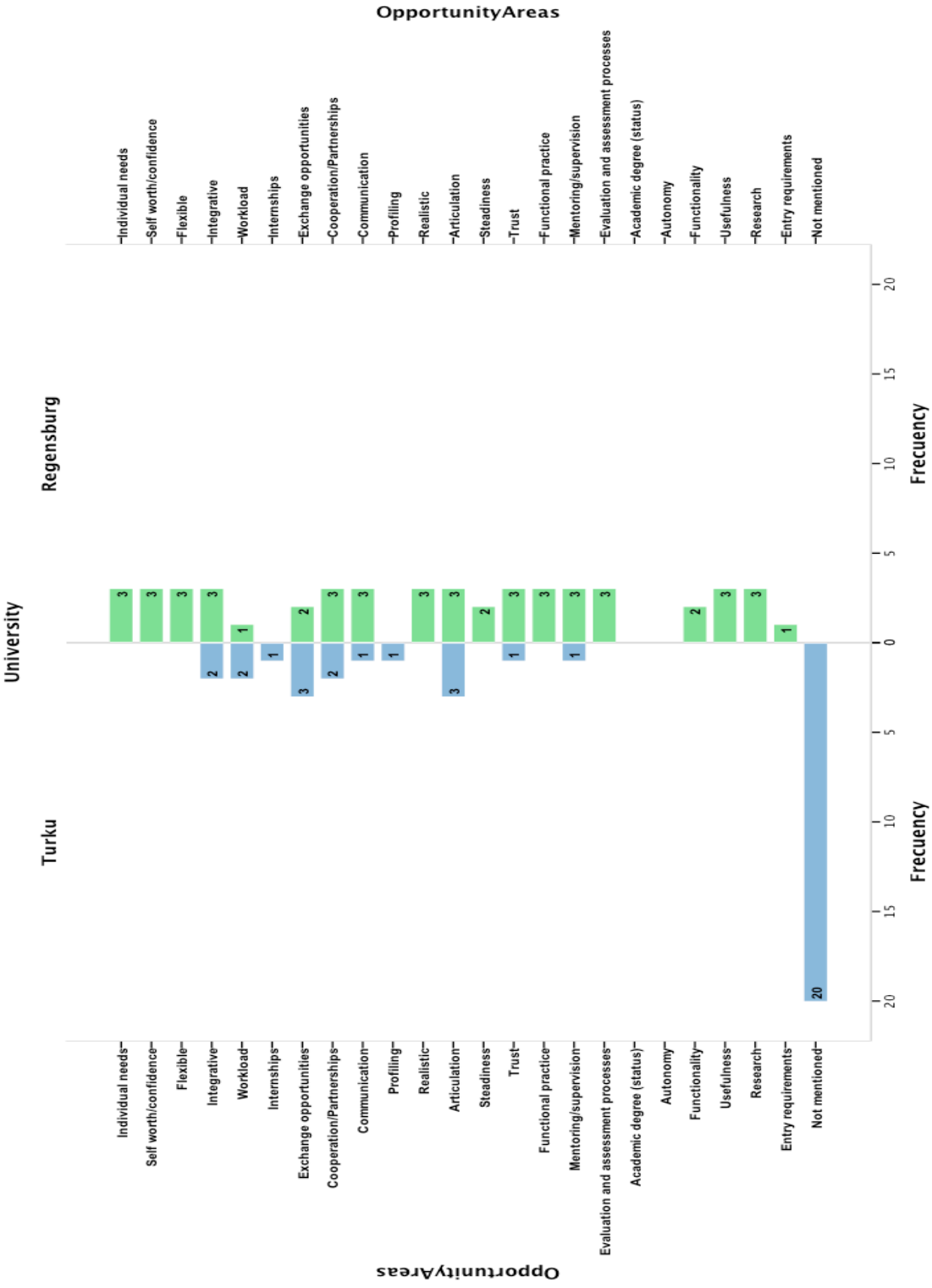

Figure 4. Opportunity Areas

5.1.1 The case of the University of Turku

In the case of the University of Turku, 63% of the attributes (15 attributes) were most often mentioned, the 8% of them (2 attributes) were less often mentioned, and 29% (7 attributes) were not mentioned at all (see Table 4).

Table 4

University of Turku attributes

Label	Number of times mentioned	Number of attributes	%	Attribute
No mentioned	0	7	29	No mentioned Articulation Profiling Exchange opportunities Internships Workload Integrative
Moderated	1	2	8	Mentoring/supervision Flexible
High	2 y 3	15	63	Entry requirements Autonomy Evaluation and assessment processes Functional practice Trust Realistic Communication Cooperation/Partnerships Self worth/confidence Individual needs Research Usefulness Functionality Academic degree (status) Steadiness

The University of Turku has a highly selective teacher education programme; it means that to be part of it, students need to pass external and internal evaluations. The highly selective criterion brings the best students into the profession and as a result good graduation rates.

Research skills are the groundwork of the teacher education programme as they are believed to be the basis for the development of teaching competences. The research

skills in the UT are organized in a gradual way from planning to report. This model is replicated every year during the 5 years of the career, increasing gradually the level of difficulty and complexity. Also with this model of research-based teacher education, hands on courses are shaped and a more realistic work is perceived. According to the experts the model "works" and produces "no pressure, no panic, no anxiety" to the students:

> The model works, it works! And we have no problems to get our students finalize their master's thesis… they have no pressure, no panic, no anxiety to start to write their master's thesis because they know everything… We are training good, qualified, skilful teachers.
>
> …[Students] work with real research questions, authentic research questions, they do the research plan, we stimulate the whole research process, from planning to reporting and even presenting the results in mini-conferences.

These two attributes, entrance selection and research skills, were mentioned as the starting point and basis of the teacher education curriculum in Turku:

> The requirements are quite high… our programme is highly selective. We get in the first phase thousands of applicants, which take part in multiple-choice questions, in the second phase… We select approximately 280-300 [students] with a test, which is concentrated in mathematical logical understanding, reasoning and [also] a group interview to measure personal orientation to see how they fit to the profession… We get 100 students… they are highly selected.
>
> We think that research skills are the basis of developing teaching competences and also professional ethics… from the first till the fifth year.

The academic degree according to the experts, gives to the programme a strong content knowledge, making teacher education an attractive career; the teacher profession is taken in a very serious and professional way, phrases like "we are in professional institutions" "we are in the university" "we work evidence-based" were commonly mentioned by the interviewees:

> The Finnish teacher education has an obligation, and that is that it has a higher academic degree [with it] teachers have solid knowledge in the subjects that they are going to teach and also they are good specialists in pedagogical thinking.

Other aspect that makes this programme unique is the cyclical curriculum evaluation; every year stakeholders are involved in feedback mechanisms, this situation makes everyone to participate in the curriculum development, and as a result, they feel committed to work with it. The programme becomes an instrument that everybody knows, an instrument that is evolvable and never static:

> …I go regularly to seminars where we meet with the people of the board of education, we meet with other university colleagues and we talk about the [programme]… the curriculum is in continuous development and we participate on it.

Thus, teacher education in Turku is steady but evolvable in comparison with what is happening in other countries, educational policy does not change very much when political changes occur; however, changes and improvements in the curriculum occur regularly. This situation makes teacher education policy solid but malleable and far away from chaos.

Mentoring is other strength of the programme; students are mentored in a very dynamic way in which they are active participants. First, mentors design learning environments in which educational discussions happen, then, subject specialists visit student teachers and give subject-matter advices. Through this combination of forces students are always accompanied. In this model nobody no body is supervising you from above but everyone is a co-creator; it gives to the students trust in themselves and in their development:

> …They [mentors and students] have educational discussions with each other, for the benefit of the child. There are also subject specialists that are going there to help too… These people [mentors, students and subject specialists] combine their forces to educate students.

As reported for the teacher educators, the practical training works quite well in the University of Turku:

> …We gradually start with very small steps… we [introduce] students to the teacher's work… and then we add more heavy load…During the third period… you teach days by yourself, but you have this mentoring teacher also available who is giving you feedback, you have your peers who give you feedback and everything is done to push the students forward into the educational

professionalism.

Trust is seen as an important part of the practical stage as it is believed that students need to be trusted at all time to perform well.

> …We trust in them, and they need to be trusted to perform well.

The opportunity areas of improvement were significantly less than strengths in the University of Turku; however, the relevance of these attributes is worth to be considered.

Articulation between educational psychology and educational sciences is a challenge that the university is facing because these two departments offer disarticulated theoretical lessons. Its functionality in real life school settings was questioned by the academics:

> …There has been always a very big challenge because we are two departments, two physical environments… we should make it more supporting so that students understand the links between educational psychology and teaching practice… We would like to make more visible and useful the social phycology into the teaching practice, because there is this sort of real life observation possibilities… we need to see the link between teacher practice with educational sciences and research skills.

The workload is other opportunity area in the UT, some of the academics agree that the curriculum as it is prepares students in "so many subjects and different domains" that it does not allow profiles; money, time and recourses could be used more efficiently:

> …We are teaching very much and we have to think what is important and what sort of competences are our ideal for the future… There are some concrete plans to design a specialized teacher educator.

> … We have so many subjects, different domains that are included in the curriculum and it is already very full… We should develop a more specific profile [because] … we cannot do everything, it is too much; we need to find our basic competences and then specialize in… different areas.

Other two aspects to be considered are the communication and the cooperation. Some of the academics agreed that communication between the university and the training

schools is sometimes very difficult, they argued that a much more systematic and coherent link could be designed, a link in which integrated theoretical courses could give practical solutions in practical teaching:

> …We are very far from each other, communication with the university and the training schools is sometimes very difficult… we should make it more systematic and coherent… so students can integrate theoretical courses in practical teaching.

Cooperation in the University of Turku is also an opportunity area although some programmes like "Problem-based learning environments" and "Co-teaching" (various students from different levels teaching together), have been implemented recently. Academics argued that much more cooperation is needed between class teachers, subject teachers, special teachers, etc. Besides, cooperation between teacher education schools should be fortified because "without cooperation [teacher education] collapses":

> …We do have some seminars like Problem based learning environments, in which we try to simulate the teacher cooperation… [The idea of] co-teaching and multidisciplinary cooperation (for example the special teacher and class teacher, teaching together with the psychology teacher) is the direction in which we are going.

All academics agreed on the necessity of future teachers to broaden their scope about what is happening in other schools around the world; in their opinion, every student should have the opportunity to go abroad and see what is like to be a teacher somewhere else:

> …Not everyone has the opportunity or the recourses to go abroad during their teaching training… It is useful to know what is going on in different countries, [to know] what is the situation, because is useful to analyse which kind of signals could be there for us… is recommended [to create] exchanges [of students] between different universities and financing research projects [together with different universities].

5.1.2 The case of the University of Regensburg

In the case of the University of Regensburg, 22% of the attributes (5 attributes) were most often mentioned, the 26% of them (6 attributes) were less often mentioned, and 52% (12 attributes) were not mentioned at all (see Table 5).

Table 5

University of Regensburg attributes

Label	Number of times mentioned	Number of attributes	%	Attributes
No mentioned	0	12	52	Entry requirements Research Functional practice Trust Steadiness Articulation Realistic Communication Exchange opportunities Integrative Flexible Self worth/confidence
Moderated	1	6	26	Usefulness Functionality Evaluation and assessment processes Mentoring/supervision Cooperation/Partnerships Individual needs
High	2 and 3	5	22	Autonomy Academic degree status Profiling Workload Internships

In the University of Regensburg, autonomy was seen as strength of the programme. Academics agreed on the advantages of being free to choose, design and organize what is to be taught in the teacher education curriculum.

Another strong attribute corresponds to the status of the academic degree and the way it

is organized in the UR. The programme offers great opportunities to obtain strong content knowledge and the way the *modules* are organized and objectives and standards met, gives high prestige status to the degree. Academics perceptions about their students were quite high, as they feel that after graduation student teachers are strongly shaped; students though, according to the academics, seem to feel a bit anxious about the heavy workload that the programme requires:

> …They [students] have to pass *modules*… and only when you pass the basic modules, you can go into the next ones, it is very good, now its very good structured, it is much better than it has been before. Many students don't like it that much, because they are forced to do much more, they can't select so much, they have to pass much more exams than they have to do before, many student's can't work besides their studies, but for us as teachers, we think its not only better structured but they are also better prepared in matters of schooling.

Profiling is other attribute mentioned as strength in the UR. Since the beginning of the career students are asked to choose a path (three subjects) in which they will become experts, this kind of profiling allows teachers to guide students towards a more narrowed and focused profile in which recourses are more efficiently used. Student teachers at the UR become experts in a very specific range of disciplines. Content-wise the profiles seem to work quite well, as teachers' perceptions about students' development are positive. Phrases like "they really know what they are teaching", "they are strongly shaped", "students are well prepared", were constantly heard in the interviews:

> … The students have to study one *ein unterichtfacht* (one discipline) rather intensive and at least three others as a didactic *fach* (discipline)…so they have to study four disciplines, one very intensive also theoretically the others are more concern of teaching those disciplines they have to study. And then of course they have to study education, that means general education psicology, learning, teaching, psychology, *schule pedagogic* (school pedagogy), education, school, practical education… then, there is fifth [in which] they have to study either sociology of *folkskunde* (folklore).

Other strength corresponds to the internships that the university organizes during the teacher education programme; student teachers have to participate in five of them along the four years length of the university stage. In the internships, students are able to

identify whether they like the profession or not, whether they want to teach or not, etc. A weak point in this strength is the students' accompaniment that the university organizes during the internships to produce the desirable reflection. Academics argued that accompaniment sometimes does not take place and most of the times students are left alone in their observations and reflections; besides, the internships are so flexible that sometimes students are permitted to choose something that is not related with teaching:

> …[The internships] they are practical, but they are special, we have one internship before they start the university, they do it before, to see being a primary school teacher, what does it mean, what do I have to do, do I like children, we hope so, but is not supervised. They can choose a school and they can ask can I sit down here and observe for two or three weeks, and then they have a period very long internship but is not supervised either, it's the first big one, they have to write down the situations in sort of report is corrected by a teacher… [students] are alone with the teacher in school… sometimes they can do the internships somewhere else but not in schools.

Cooperation is a moderate attribute in the UR, some showed dissatisfaction with the actual 2-stages system, arguing that cooperation between teacher training institutions and the university is very difficult to have when everybody is "working on their own and not together"; however, they also mentioned some ongoing programmes like "*Dialogos"* in which more than 20 schools sign a *Vertag* (contract) to work intensively together with the university; this schools are called *Partnershule* (partner schools) and students can go whenever they want to have more observations and practice:

> …We have what we called *Dialogos*…Last year we started a program with more than 20 schools in the surroundings of Regensburg, *Gymnasium, Hauptschule,* and elementary school, they work more, rather intensive together with university of Regensburg and ours students can go whenever they want to have more practice, they can go to that school and can observe or they can do their, bachelor thesis… we are obliged to give some teacher training courses in this schools when they ask for it, or we have some special programs once or twice a year for those teachers that they have or hand our on our schools, we called them *Partnerschule* (partner school) and they are very much connected to the university, we have a *Vertage* (contract) … a promise to work together and

> they sign [it], is really a contract between those 23 schools and the university of Regensburg to work more together.

Academics were very critical about the challenges that the programme for teachers in the University of Regensburg is facing at the moment. To begin with, phrases like "I am not very happy with the system" "it is nonsense", were mentioned when the functionality of the programme was put under discussion.

Academics argued that the university stage and the practical stage are completely separated from each other. They agreed that theory by itself was not useful, mentioning that they have heard their students saying that after the four years in university they "can put all [theory] things in the bin". Besides, teachers from the university stage and teachers from the practical stage have "unfortunately nothing to do with each other", both stages are completely disarticulated and mentors argued that when they receive teacher students after four years of university, they have to start from the beginning calming that "they [students] don't know anything":

> …I think our program at the university its, there is less connection with the schools…I think for it is not useful that our students will have practical times at the school and we don't supervise them…it is nonsense, if we train a teacher I have to go with whit students with my students to the school to have a look at the lessons, how they gain…their experiences and discuss their experiences and give feedback and all those things…I am not very happy with this system.

> …Separating from this the theoretical studies from the practical things, is not as good, because when they study 4 years and they hear the theoretical things, they don't try this things in the practical phase, they don't try on their own, there are some students who made this change, but I think [pause] there are not lot of them… I think this 4 years at the university should be more important, should be more important for the practical things…the students at our university they say after the first exam "you can put all your things in the bin" and the *Seminarleiter* (mentor) says "they don't know anything, I have to start with the theoretical things". I think that, when they are only learning these theoretical things without any thinking about how will I do that in my class? What is my way? What is my opinion? Is not worth it.

The academics agreed that the programme for teacher education has not changed for

more than 30 years; this was seen as an opportunity area in the university. Academics argued that there is not much they have done or participate doing for developing of TEC:

> …The basic structure of the studies becoming primary school teacher are I would say, they haven't change since 30 years. I was studying here in 19… I finished in 1985 and it was the same system, I studied the same subjects.

Exchange opportunities are only a bunch and not all students have the opportunity to go abroad and see how teacher education looks like in other contexts; the academics claimed that this is a challenge in the programme arguing that all student teachers should have the opportunity to live this experience:

> …I would like that our students, more of our students would see what is going on in other countries, teacher training is not that good in Germany, but in [other countries] there are very good programs or different but good programs …every year at least twice a year [a teacher] goes with some students to different countries, but there are very few students that could have the opportunity, so I would like that every student would have the opportunity not only should have the opportunity but they should have more chances to go in a different country, or at least into Germany, we have 16 countries in Germany, with 16 different concepts or teacher education, so if they would go to Berlin or to Hamburg or lower Saxony it would be also very good experience for Bavarian teachers, that would be for me also very important topic.

Research is not "the main topic" in the UR, there is not a specific field in the curriculum for learning research skills and academics agreed that this is a problem that needs to be fixed soon. They also commented that the university should change this situation because "there are lots of systems [teacher education curricula] which are quite better than" the one they have in the University of Regensburg:

> …I would say research skills is not our main topic, I think it would be better to develop something like that… the only thing they are doing is that they are writing a thesis at the end of their studies. I think is maybe comparable to a Ba thesis, and doing this they have to have some research skills, but, it does not work most of the time, there is no, no special field in the studies to develop research skills.

> …[Research skills] it depends very much only on the colleagues and their teaching methods and what they see is relevant.
>
> …Usually we hope that they learn the research method in history for example when there is the special discipline they are studying very hard, but often they tell me I don't think I don't learn research in history or in literature…till now, our students do not learn research, we work on it, we want to change it, but till now our student don't learn during their, their studies they don't have to study empirical science.

Supervision and mentoring is also an opportunity area in the university, academics agreed on the strong position that the *Seminarleiter* (mentor) has over the students, saying that the *Referendare* (student teachers) are afraid of them because they are responsible for the grade they get at the end of their career; this grade accompanies them during their life long teacher career because having a good grade is synonym of having a good job. This situation provokes as a consequence fear and anxiety among students, because they are "very afraid of their marks" and that number "becomes everything you want and look for". Other consequence is the feeling of unfairness that grading the teaching practice produces. This situation is not well accepted by the students and not well seen by the teachers in the university stage, as it is clear that students who get schools with a nice context and an easy environment will have the best grades.

5.2 Second phase results

Results from the interviews and the document analysis revealed a list of attributes that teacher education curriculum should include in order to be effective. Dimensions and variables were designed as it can be seen in *Figure 5*.

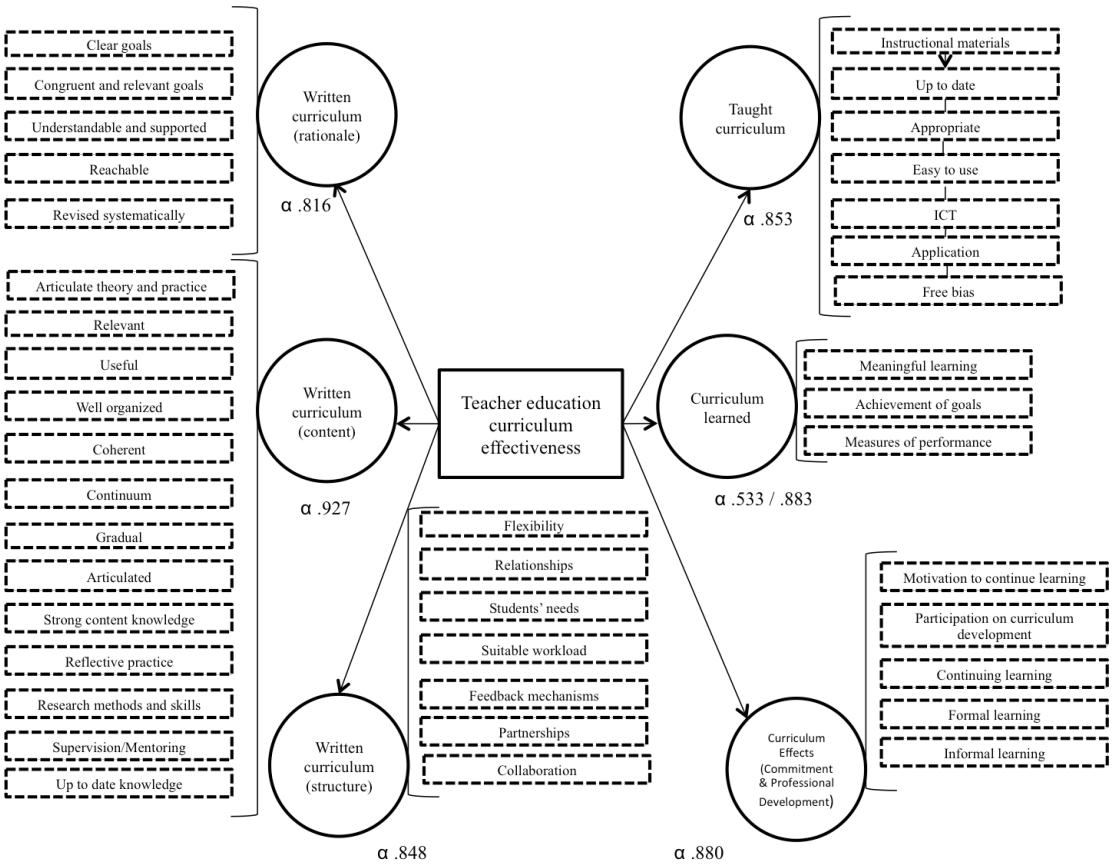

Figure 5. Dimensions and variables to be measured

The instrument, a survey named: *Academics' perceptions about the effectiveness of the curriculum for teacher education*, was made of 53 items comprising five dimensions as follows: 7 items, Demographics; 5 items, Dimension 1: Written curriculum (Rationale); 4 items, Dimension 2: Written curriculum (Content); 10 items, Dimension 3: Written curriculum (Structure); 6 items, Dimension 4: Taught curriculum; 2 items, Dimension 5: Curriculum learned and 5 items, Dimension 6: Curriculum effects.

The survey was designed as a six-level *Likert* scale, from 1 (disagree) to 6 (agree): (1) Disagree very much, (2) Disagree moderately, (3) Disagree slightly, (4) Agree slightly, (5) Agree moderately and (6) Agree very much. The instrument was sent electronically to both universities; academics were asked to fill in the survey voluntarily. 27 responses were collected, 8 from the University of Regensburg and 19 from the University of Turku (see the complete survey in *Apendix G*).

Results showed that Cronbach's α (alpha) coefficient for the first factor was α .816; for the second factor α .927; for the third factor α .848; for the forth factor α .853; for the fifth factor α .533; and for the sixth factor α . 880. Five of the six coefficients were at

acceptable level (see *Figure 4*). The fifth dimension was re-analysed using Pearson correlation to verify if all items were correlated; results showed that only two factors were significantly correlated at a 0.01 level (see *Table 6*).

Items that were not correlated were deleted from the survey. The Cronbach's α (alpha) coefficient was calculated for the items that were correlated obtaining an α of .883. Finally, the calculated coefficients were all in the acceptable range, suggesting that the survey and each dimension have internal reliability.

The items deleted were: item 43. *The institution provides curriculum-based tests and standardized tests that reflect and correspond with the objectives stated in the course guides,* and item 44. *The tests that the institution offers are valid and reliable measures of performance.*

Finally, the survey remained with 6 dimensions and 51 variables.

Table 6

Dimension 5 correlations

Correlations

		The institution provides curriculum-based tests and standardized tests that reflect and correspond with the objectives stated in the course guides.	The tests that the institution offers are valid and reliable measures of performance.	I perceive that pupils believe that what they are learning is useful and meaningful.	I perceive that pupils achieve the specified objectives at a satisfactory level.
The institution provides curriculum-based tests and standardized tests that reflect and correspond with the objectives stated in the course guides.	Pearson Correlation	1	.121	.012	.066
	Sig. (2-tailed)		.693	.965	.807
	N	16	13	16	16
The tests that the institution offers are valid and reliable measures of performance.	Pearson Correlation	.121	1	.460	.343
	Sig. (2-tailed)	.693		.114	.251
	N	13	13	13	13
I perceive that pupils believe that what they are learning is useful and meaningful.	Pearson Correlation	.012	.460	1	.796**
	Sig. (2-tailed)	.965	.114		.000
	N	16	13	16	16
I perceive that pupils achieve the specified objectives at a satisfactory level.	Pearson Correlation	.066	.343	.796**	1
	Sig. (2-tailed)	.807	.251	.000	
	N	16	13	16	16

**. Correlation is significant at the 0.01 level (2-tailed).

6. DISCUSSION

6.1 First phase

There is not perfect way to design teacher education curricula as we live in different societies that face different challenges and needs. However, being different should not be something to be worried about, but a reason to be curious. Acknowledging and respecting our differences is the only way to get to know each other's strengths and weaknesses and gain understanding and comprehension that could help our societies to stay more easily connected.

Teacher education curriculum in the Faculty of Education in Turku, Finland, and in the Department for teacher education in Regensburg, Germany, have been described, analysed and discussed in this document. Academics' perceptions about the teacher education curriculum effectiveness have been gathered using semi-structured interviews. Also in this study, an instrument to measure academics' perceptions about the teacher education curriculum effectiveness was designed and validated in both countries.

Results from the first phase of this study suggest key aspects of an effective teacher education programme, these attributes could be of help when teacher education institutions whish to make a diagnosis or evaluate the effectiveness of the teacher education programmes. Results from the second phase of this study show an instrument that demonstrated internal reliability and validity, therefore, the instrument is ready to be used in further research. Through the use of this instrument and the correct empirical verification of data, future studies could focus on building a justifiable plan with strategies to improve curricula and processes based on the needs of each institution.

The assumptions presented at the beginning of this research (*Figure 2*) were completed with the data gathered in the interviews from the academics of the Faculty of Teacher Education in the University of Turku (UT) and academics from the Department of Education in the University of Regensburg (UR). The previous assumptions and their modifications will be discussed in this section.

Assumption 1: An effective teacher education curriculum is practical in a sense of being useful, realistic, functional and flexible. According to the academics, it should also be autonomous, focused and inclusive in a way in which everybody participates in the curriculum development.

In the department of teacher education in the UT, the concept of Donald (1995) of Practical Theorising has been widely applied, the use of theory is based on the idea of exercising it in real life settings; practice guides theory and not vice-versa. This situation differs from what is being done in the UR, where four years of academic training is required in order to start practice. When students find the praxis as a reason to study theory, both practice and theory, have much more sense, studying theory becomes indispensable and the development and improvement of students' practice becomes imminent (Korthagen & Vasalos, 2010). Academics from both universities agreed with the idea of Korthagen and Vasalos (2010) on the urgent necessity of a curriculum that could tighten the link between theory and practice. Still, in both universities, departments that teach different domains in different stages of the degree are separated from each other. Students' perceptions about this situation are important to be considered in further research.

Both universities enjoy autonomy and flexibility in their curriculum. Academics seem to be quite satisfied with the freedom they have to develop their own path according to their needs. However, the teacher education curriculum in the UR has not been substantially reformed in more than 30 years and academics seem unsatisfied with their null participation in the development of the curriculum they currently use. This situation is different in the UT where mechanisms to get feedback are every year designed and the participation of academics is taken into account in order to design and implement changes. Academics from the UT act as co-participants in the design of TEC, this situation provokes positive attitudes towards the challenges that they might face when they try new processes, new content or new didactics. As reported it by Schwartz (2006) and Shawer (2010) getting teachers to be involved in the curriculum development and design has as a result up-to-date teaching, engaged teachers and makes them improve their professionalization and awareness of the institutions' expectations. However, data gathered in this research only represent the perceptions of the people that were interviewed. No generalizations can be assumed with their answers.

Flexibility should be considered as an important attribute in teacher education curricula not only in the quantity of elective courses they offer (in the case of the UT there are more than 20 elective courses), but in the way in which other professionals with higher education can have the chance to enter the teaching profession without coursing the whole programme, thus saving human and economic recourses (Cuadra & Moreno, 2005). In both universities, different mechanisms and paths into the profession were mentioned, but their functionality remains unknown, prompting future research to investigate about this topic.

Assumption 2 and 4: An effective teacher education curriculum contains up to date knowledge, strong content knowledge, research skills (to make it more realistic, useful and functional) and the understanding of teaching and learning processes. According to the academics, an effective teacher education curriculum should also include practical experiences abroad, effective mentoring/supervision mechanisms and hands on practice (internships).

Practical experiences abroad is an attribute that should be strengthened in both universities. Money was mentioned as the mayor obstacle while designing curricula that could include these kinds of experiences for all students. Cuadra & Moreno (2005) suggested the use of ICT to investigate, interpret and communicate information to solve problems and set partnerships and exchange networks. Academics in both universities seem to need a teacher education curriculum that could include the opportunity to all teacher students to set cartels, alliances, or coalitions with other teacher students from different countries around the globe, if not physically, at least via online. Platforms and networks in which teacher students can share knowledge and teaching experiences are urgently needed. How can this platforms work? This is another interesting topic for further research.

The practical training in UT was supported by all academics interviewed, not only because it happens in an authentic learning environment, but also because it is linked with the research-based approach that characterizes the Finnish teacher education. This approach puts together the practical training and the research approach, and with this, student teachers become aware of their own practical theories (Luukkainen, 1996). In

the UT, the gradual processes of practical training and research have undoubtedly unabated stress, panic and anxiety in both, teachers and students. Contrarily, the model that the UR follows for the practical training has many opportunities for improvement according to the academics, because its design is completely disarticulated with the academic phase. Teachers from both stages, theoretical and practical in the UR, criticized its functionality and claimed for a change because of very many reasons, among them they mentioned that research skills are nowhere in the programme for teacher education in the UR, that prospectus student teachers are not taught scientific literacy; also, students are not trained to find, analyse and face future problems, they are not trained to write their thesis, they do not get knowledge of the recent advances of research in the subjects they teach, they are not trained to see teacher education itself as an object of study and research, they are not trained to internalize nor to develop a research attitude about their work and they are not trained to be analytical. "What is the point of these four years of theory without practice?" This last question mentioned by an academic in the UR is an important input worth to be considered by policymakers and curriculum designers in the UR. Once again, the perceptions here discussed only belong to the academics that were interviewed; generalizations cannot be supposed with this research.

Content knowledge is a strong attribute in the UR. Four years of academic training along with constant internal and external evaluations have as a result extremely prepared teachers, as well as very equipped teachers in specific areas of knowledge, thanks to the profile method that characterizes the German teacher education programme. It could be said that content-wise, the teacher education curriculum in the UR is effective (Musset, 2010; Cuadra & Moreno 2005) as through a subject matter emphasis they have found the way to facilitate student's meaningful learning. All academics in the UR seemed to be satisfied with the way in which the *Modules* are organized, as students have the opportunity to decide in between many options and paths according to their talents and future expectations. However, it would be interesting to know the students' perceptions about it.

TEC in the UT also offers strong content knowledge but is strictly attached to practice and research. The Finnish research-based model for teacher education puts the curriculum in a realistic scenario. Just like the ALACT model of Korthagen et al. (2001), the Finnish model integrates practical problems into real contexts. In this model,

while looking for answers to the problems, students face constant reflection, collaboration and interaction, taking the programme into a more realistic experience. The model is gradually replicated during the 5 years length of the career. It can be represented as a cone that grows gradually every year *(see Figure 6)*.

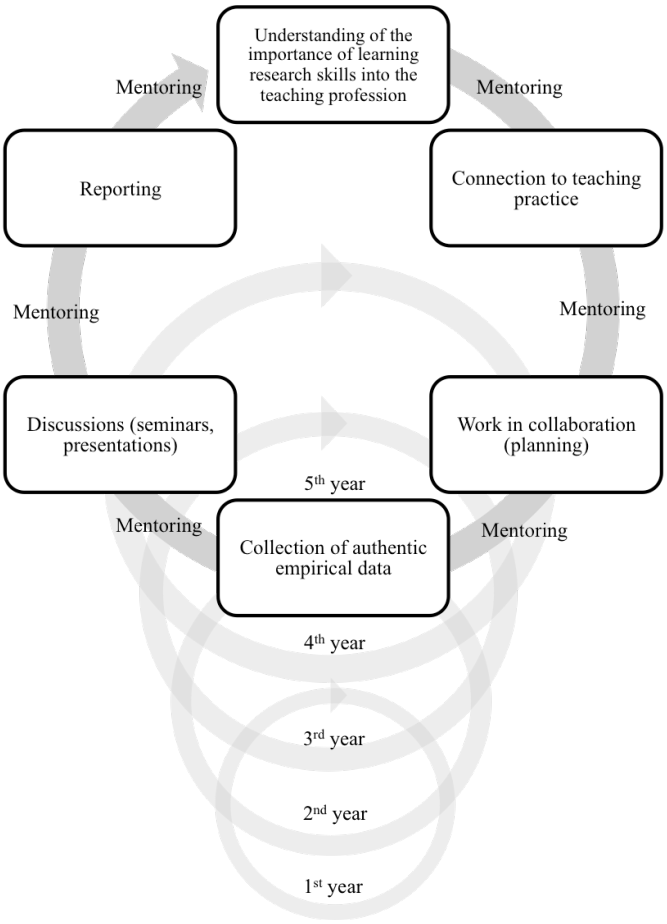

Figure 6. Research-based model in the teacher education curriculum

According to the academics, the challenges that this model is facing at the moment are first, the development of profiles to make the path of students clearer and narrower, second, the link of the courses of educational psychology with the courses of educational sciences and both of them with the research-based model and with the practical training, and third, the development of an strategy to give the opportunity to all students to go abroad.

The practical stage in the UR happens only at the end of the university stage once the students have all the theory they need to start practice. The organization of the stages was mentioned by all academics as an opportunity area in the UR, according to all academics in both universities, TEC should be divided no more, experts on both; theory and practice should combine their forces to guide students towards the same goals.

An important attribute in TEC was the organization of the supervision or mentoring. In the UT students get orientation and very warm support. The word *Mentorointi* (mentoring) is utilized in teacher education contexts and it occurs in a very friendly manner in which subject experts and pedagogues combine their forces to push students forward. The way in which the process of mentoring is functioning is another interesting topic worth to be studied in further research.

Supervision in Germany happens in a different way in which a *Seminarleiter (seminar leader)* strictly supervises students and he/she is the only person who decides about the grade that students get during the entire process; as a result, teacher students are very afraid of their marks. Academics in the UR asked for a more transparent procedure in order to give fairness to the procedure of giving a grade to the students in the practical stage. "What do we get from giving them a note in the practical training?" This phrase mentioned by an academic in the UR shows an important input worth to be considered by policymakers and curriculum designers.

Assumption 3, 5 and 6: An effective teacher education curriculum ensures communication, integration, professional development and commitment of both students and teachers and offers systematic evaluation mechanisms (that makes it up-to-date and functional). According to the academics, an effective teacher education programme should also ensure trust, suitable workload, attendance of individual needs and up to date knowledge.

In accordance with Zeichner (2010), this study found that ensuring communication and cooperation is a challenge many teacher education institutions face. Yet, none of the faculties have used "hybrid teacher educators" (p. 94). Teachers from the UT and from the UR do not teach in teacher training schools and vice-versa. An important step needs to be done in both universities to bridge the gap between the practical and theoretical stages in TEC. By making academics work in both university campuses as well as in school classrooms, this gap could be shortened or even eliminated; however, more research is needed regarding the benefit of having hybrid teacher educators. Nevertheless, getting all stakeholders involved in TEC development and design is the only way to create an atmosphere of commitment and professional development. The establishment of learning communities (Zeichner, 2010) inside universities could help

to discuss TEC and thus get everyone involved and have an updated and functional programme.

The model of professionalization of teaching is used in both universities; academics corresponded with Musset (2010) and Toom et al. (2010) as they argued that the status of the degree has given students the tools they need to solve professional problems and gain appreciation. However, the professionalization of the teaching profession has dragged some problems with its implementation: the workload in both universities seems to be quite dense. Academics in both universities are concerned about how to develop a much more focused curriculum. The Department of education in the UR has been working quite well with this dilemma. In their curriculum, students are asked to choose three subjects since the beginning of their career, allowing them a kind of profile drawing a narrower path that works well for teachers and students. Meanwhile, academics in the department of teacher education in the UT are looking for ways to add more hours to the day. A review of the content of the curricula should be further analysed and ways to make it more focused should be designed. Recommendations from Schwille & Dembélé (2007) can be considered while designing profiles, taking into account ICTs and further development.

Individual support for students is also needed in TEC. Both universities have interesting departments that seek to orient students towards the successful completion of their degree. Individual counselling and the development of a learning plan is part of the curriculum in TEC in Turku. In the UR, individual support is offered only when is required by a student. More research is needed in order to find the reasons why even though students have this kind of support and guidance in both universities, they still seem to complain about the workload of the programme. Maybe the length of the career or perhaps the pertinence of teaching many subjects could be taken in to consideration in future research.

6.2 Second phase

An instrument to measure academics' perceptions about the effectiveness of the teacher education curricula was developed in this study. Its design is the result of the analysis of a wide number of research papers found about this topic and the analysis of 6 interviews of experienced academics. Glatthorn (2000) types of curriculum were

succesfully used to formulate the dimensions of the instrument. Research from Musset (2010), Cuadra and Moreno (2005), Erixon, Frånberg & Kallós (2001), Jakku-Sihvonen & Niemi (2006), Ritva & Niemi (2006) Niemi (2008), Toom, et al. (2010), Darling-Hammond (2000), Donald (1995), Macdonald, (1999), Reinhartz, (1999), Korthagen et al (2001), Craig (2006), Schwartz (2006), Eisner (1990), Shawer (2010) and Zeichner (2010), helped in the design of the 53 variables that measure these dimensions. Although much research was used to develop this instrument, the variables can be considered as editable because curricula serve different societies and concepts or proceses might change with the context. No dimension should be deleted from this survey as the types of curriculum used to design them are interlinked with each other and they are all needed when analysing and evaluating curricula (Glatthorn, 2000). However, when changes are needed to be made in the variables, the consistency of each dimension should be be re-checked.

Some problems arised when reporting the data from the isntrument after it was piloted. Mainly, the problems were related to the answers of the dempgraphic information. Some of the participants (two) decided not to answer the question regarding their job positon as their anonimity was not protected. Another problem that the demographic information faced was the scales used for age and years of service, as punctual or exact information would have been easier to report in this study.

7. LIMITATIONS AND FUTURE DIRECTIONS

Keeping the teacher education programmes up-to-date is a big challenge for every teacher education institution, without doubts all stakeholders need to be involved in its development. Especially, teacher educators should become partakers of the education they offer participating in the design of the curriculum they work with. Constant research needs to be performed and every teacher educator should be a co-creator of its design. Students' perceptions are equally important in curriculum development, as their opinions regarding the courses they take, fail or recommend are needed when curricula evaluations are on demand and improvements need to be designed. This was a limitation of this study because only the teacher educators' perceptions were taken into consideration.

Another limitation of this study was its qualitative nature. Data cannot be used to draw conclusions or make generalizations. Future studies can identify factors related to the effectiveness of the teacher education curriculum and thus design a sustainable plan with strategies to improve curricula using the instrument developed and validated in this study. One last limitation of this study was the number interviews performed (three in each university). When a deep diagnosis of the situation of an institution is needed, research should include the perceptions of a higher number of stakeholders.

Some questions and important topics to be further discussed emerged during the development of this study: What are the different mechanisms or paths into the teaching profession? Are those mechanisms functioning? Is the length of the teacher education career suitable? Why to develop profiles in teacher education programmes? What subjects could be considered in a teacher education programme that develops profiles? What are the pros and cons of using hybrid teacher educators? What are the students' perceptions about the teacher education curricula?

A successful teacher education curricula is never static, developing a curriculum that works is an evolutionary process that needs constant research. This study gave an insight of a diagnosis of the teacher education curriculum in the University of Turku and the University of Regensburg; with it, understanding about the academics' perceptions about the effectiveness of the teacher education curriculum was gained. Moreover, this study also offered an instrument to measure the effectiveness of teacher education curriculum in further research.

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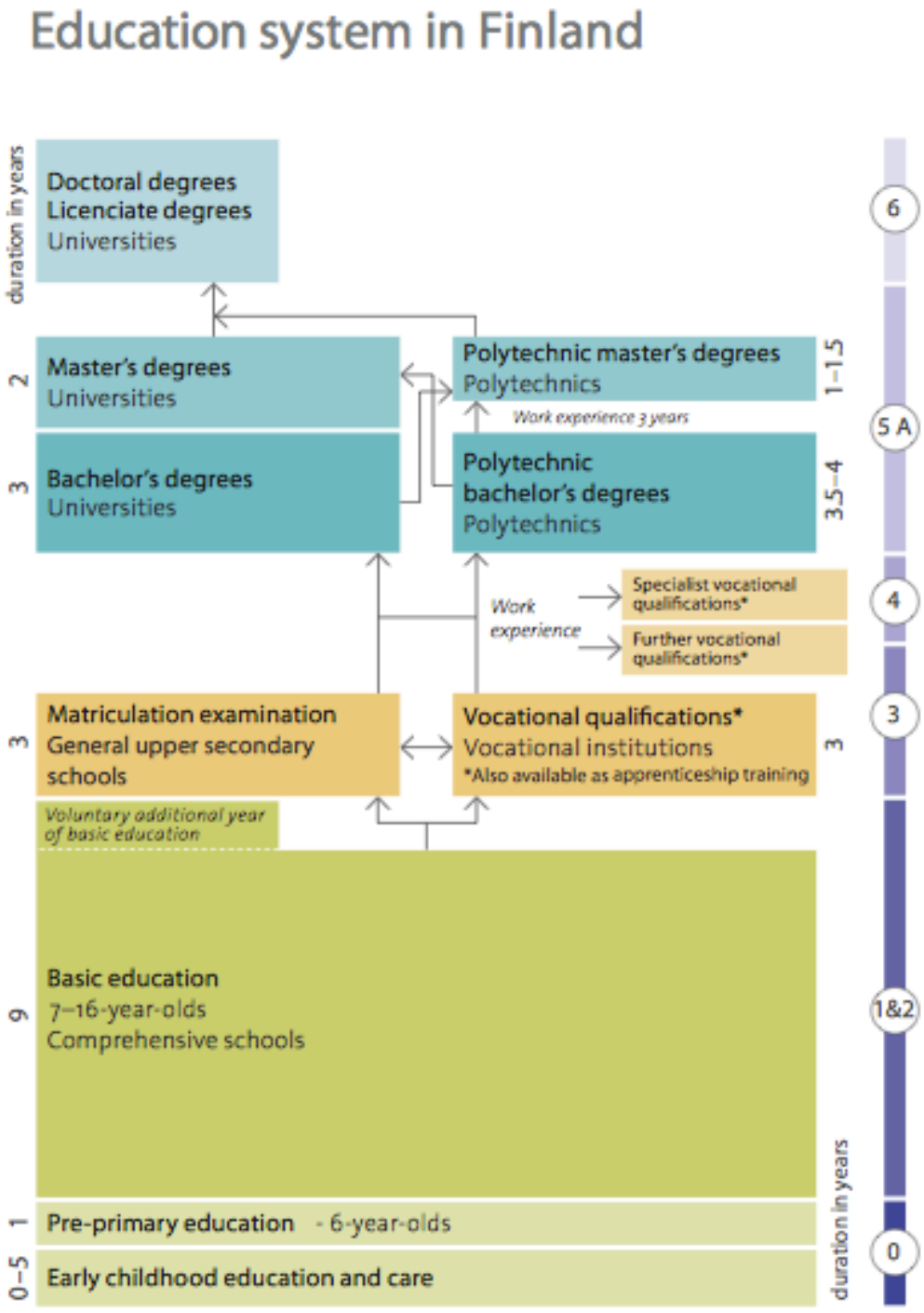
APPENDIX A

Finnish Education System



Finnish Education System (National Board of Education). Education System Chart Adapted from http://www.minedu.fi/export/sites/default/OPM/Koulutus/koulutusjaerjestelmae/liitteet/finnish_education .pdf, by Ministry of Education and Culture. Copyright 2014 by www.minedu.fi/copyright. Adapted with permission.

APPENDIX B

Kasvatustieteiden tiedekunta/Faculty of Education/Class teacher Education/Turku

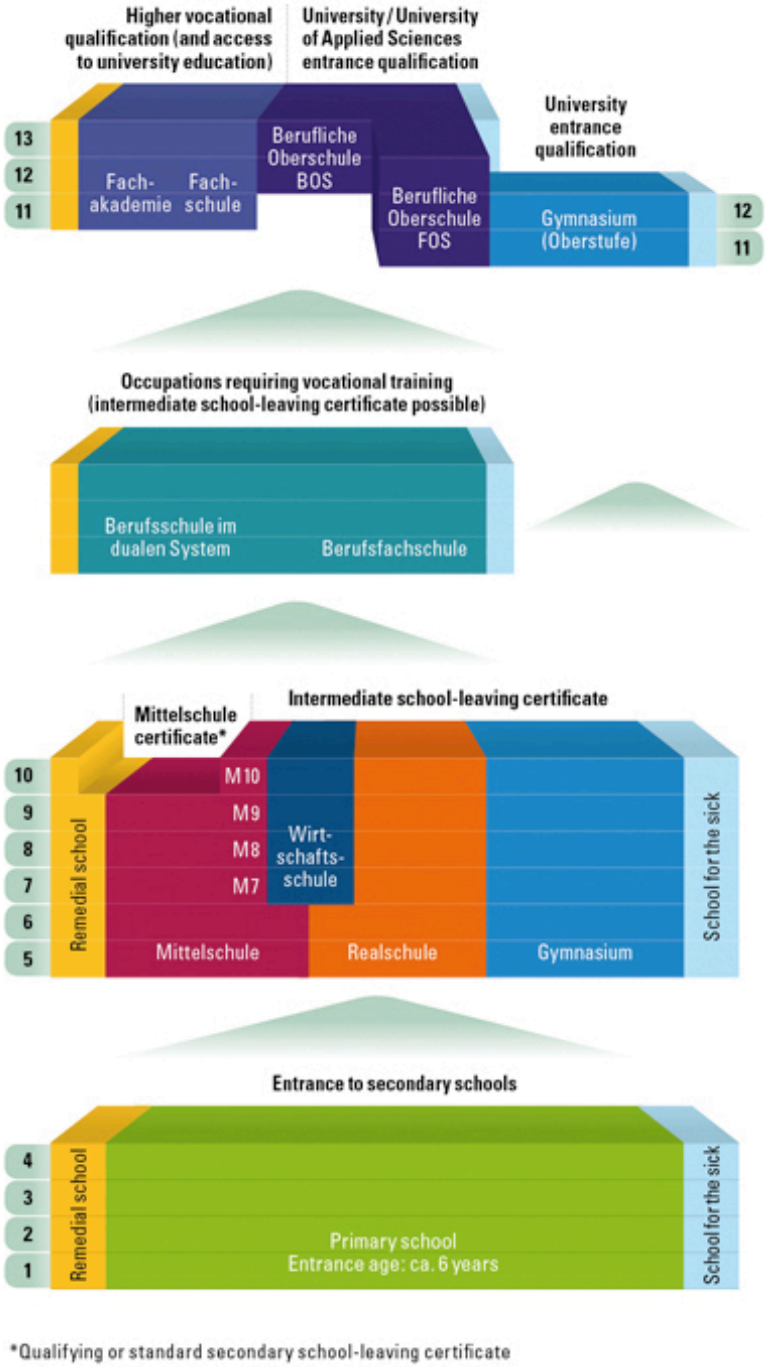
Area	ECTS		Subject
Language and oral communication	20	4	Introduction to University Studies
		5	Finnish oral and written skills
		5	English oral and written skills
		3	Swedish oral and written skills
		3	Computing in classroom
Educational Science	60	4	Introduction to educational sciences
		4	Education and Sociology of education
		13	Educational Psychology (courses A, B and C)
		4	Final examination for Basic studies
		4	Basics of Research and Knowledge Acquisition Methods
		6	Multimethod-Nature of Educational Science and Investigative Teacherhood
		8	Research in developing Expertise (thesis for bachelor of Arts in Education
	80	5	Research Methods
		16	Research Seminar I (Master's Thesis)
		14	Research Seminar II (Master's Thesis)
		10	In-depth Subject Training and Weekly Practice
		10	Optional Thematic Teaching Practice
		4	School and organization, Leadership and Law of School
		5	The Educational Community and its Well-Being
		3	Support of Student's learning
		3	Foundations for Education and Early School
		3	Philosophy, Ethics and Evaluation
		4	Learning, Motivation and Learning Environments
		3	Optional Studies: Education, Learning, Teaching and Evaluation
Themes in Basic Education	60	3	Introduction to Subjects in Basic Education and Teaching
		8	Finnish language and Literature
		3	Mathematics
		3	History
		3	Religion
		4	Biology and Health Science
		3	Geography

		3	MATHSCI- Empirical Testing and Analysing
		3	MATHSCI- Problem solving and modelling
		5	Visual Arts
		6	Technical/Textile Work
		5	Music
		5	Physical Education
		3	Subject-based course
		3	Theme-based course
Elective Studies	45-55		A) Subject -oriented courses Posting of Education Creative drama Use of theory and experiment Fairy tale pedagogics Teaching Mathematics When cultures crash Exploratory learning environment subjects Earth zonation and geographic phenomena Physics and Chemistry Arts and Crafts and Design Communication and Media Photo Cultures Crafts (emphasis on textile work) Certainty teaching music School Sports Project Water - life administration B) Clustered based courses Environmental Education and Sustainable Development Multicultural education Art and Environmental Education Handicraft, Design and Entrepreneurship Entrepreneurship education in primary schools Physics and Technology ICT application in education Web page design and implementation Online course design

Note. Translated and adapted from: Kasvatustieteiden tiedekunta/Faculty of Education/Class teacher Education/Turku

APPENDIX C

Education system in Germany



Adapted from http://www.km.bayern.de/education-in-bavaria.html. Copyright 2014 by Bayerisches Staatsministerium für Bildung und Kultus, Wissenschaft und Kunst. Adapted with permission.

APPENDIX D

Grundschullehrerausbildung. Primary teacher education curriculum

LP	About	ECTS	About	Courses offered
66	*Fachwissenschaft*	54	Subject	Chemistry English German Protestant religion, History,
	Fachdidaktik	12	Subject Didactics	Catholic religion, Art, Mathematics, Music, Physics, Sports.
70	*Didaktik der Grundschule*	Min.28	Elementary education and didactics	The study of primary school pedagogy and didactics Literacy acquisition Social Studies
		Max.27	Teaching subjects	When you choose German or Mathematics as a subject, you can combine them with German, Teaching German as a Second Language, English, History, mathematics or Religious Education (evangelic/catholic). When you choose music or art or sport as a subject, you can combine them with: Teaching German as a Second Language, English, History, Art, Music, Religious Education (evangelic/catholic) or Sports.
		Max. 15	Electives	
43	*Erziehungswissenschaftliches Studium EWS*	Min.7	General Education	Foundations of education and socialization, History of Pedagogy/Education anthropology
		Min.7	School Pedagogy	Theory of the school as an institution and organization,
		Min.10	Psychology	Social Psychology of the school and family, behaviour of children with special needs.
		Max. 10	Electives	
		8	Social Sciences	Introduction to the comparative cultural studies, cultural and cross-cultural analysis of historical and contemporary popular culture in Europe, Germany and Bavaria. It also includes courses from political science, sociology or ethnography as well as from philosophy or the Protestant and Catholic theology.
	Pädagogisch-didaktisches Schulpraktikum	6	Internships	Internship in a production, further processing, trade or service — 8 weeks Orientation Internship to the teaching profession — 3-4 weeks Pedagogical-Didactic teaching practice during the free-lecture period — 150-160 hours One-semester pedagogical content course in one of the selected subjects — 1 semester

6				One semester course related internship in connection with the study of primary school didactics.	1 semester
10	*Zulassungsarbeit*	10		Under the supervision of an advisor	
15	*Sonstiges*	15	Electives	Language courses Speech training IT training.	
210	Guidelines of the LPO 1				

Note. Translated and adapted from: http://www.ur.de/rul/studium/grundschule/index.html

APPENDIX E

Interview example

1. In your opinion, what are the main features of the teacher education programme in the University of Turku?
   - -What are the strengths?
   - -What are the weaknesses?

2. How are students' research skills and knowledge acquisition approached in the class teacher education programme?
   - Why are these skills considered important for future class teachers?
   - Could you describe the content of courses on research skills?
   - How have you developed these courses?
   - In which stage/s research skills are taught? When are put on practice?
   - Your experience as teacher of these courses?
   - How are students' research skills evaluated? (Workshop)

3. Why is the programme divided in bachelor/master stages?

4. Based on your experience, where are the major spaces for improvement in the class teacher education at the University of Turku?

5. What are the likely future reforms to be implemented in class teacher education programme?

   -How are these reforms planned to be implemented and when?

APPENDIX F

Survey

Academics' perceptions about the effectiveness of the curriculum for teacher education

PART 1. PLEASE ANSWER EACH QUESTION ABOUT DEMOGRAPHIC INFORMATION		
	1.	University
	2.	What is your gender?
	3.	What is the highest level of education you have completed?
	4.	What is your age?
	5.	Describe your job position.
	6.	Status of job.
	7.	Years of service.

PART 2. PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.			Disagree very much	Disagree moderately	Disagree slightly	Agree slightly	Agree moderately	Agree very much
Written Curriculum (Rationale)	8.	The goals of teacher education (TE) curriculum are clearly and explicitly stated and readily accessible to those who need to refer to them.	1	2	3	4	5	6
	9.	The goals of TE curriculum are congruent and relevant.	1	2	3	4	5	6
	10.	The goals of TE curriculum are understood and supported.	1	2	3	4	5	6
	11.	The goals of TE curriculum are too high to meet.	1	2	3	4	5	6
	12.	The goals of TE curriculum are revised systematically.	1	2	3	4	5	6
Written Curriculum (Content)	13.	The subjects in the curriculum of TE are relevant.	1	2	3	4	5	6
	14.	The subjects in the curriculum of TE are useful.	1	2	3	4	5	6
	15.	The subjects in the curriculum of ITE are well organized.	1	2	3	4	5	6
	16.	The subjects in the curriculum of TE are coherent with the reality in schools.	1	2	3	4	5	6
	17.	The subjects in the curriculum of TE help students to continue learning during their professional life.	1	2	3	4	5	6
	18.	The subjects in the curriculum of TE are organized in a way that the acquisition of knowledge is gradual.	1	2	3	4	5	6
	19.	The subjects in the curriculum of TE are articulated.						

	20.	TE curriculum ensures strong content knowledge.	1 2 3 4 5 6
	21.	TE curriculum ensures reflective practice.	1 2 3 4 5 6
	22.	TE curriculum ensures research methods.	1 2 3 4 5 6
	23.	The practical content is well organized.	1 2 3 4 5 6
	24	The practical content is well supervised.	1 2 3 4 5 6
	25.	The practical content and the theoretical content complement with each other.	1 2 3 4 5 6
	26.	The content of the curriculum of TE is up-to-date.	1 2 3 4 5 6
Written Curriculum (Structure)	27.	The curriculum structure allows students from different careers to enrol in teacher education curricula.	1 2 3 4 5 6
	28.	The curriculum structure allows students to choose their own study path.	1 2 3 4 5 6
	29.	The curriculum structure allows close relationships among schools, teachers, employers, training schools, and mentors.	1 2 3 4 5 6
	30.	The curriculum structure responds well to students' needs.	1 2 3 4 5 6
	31.	The curriculum workload is suitable.	1 2 3 4 5 6
	32.	The curriculum structure facilitates feedback mechanisms to monitor outcomes.	1 2 3 4 5 6
	33.	33. The curriculum structure assesses students in a regular basis to ensure that they have the necessary motivation, skills and knowledge to continue in the programme.	1 2 3 4 5 6
	34.	The curriculum structure facilitates partnerships between teacher education institutions and training schools (subject teachers with mentors or seminar leaders).	1 2 3 4 5 6
	35.	The curriculum structure facilitates collaboration.	1 2 3 4 5 6
	36.	The curriculum structure facilitates good relationships among teachers, students, leaders and administrators.	1 2 3 4 5 6
Taught Curriculum	37.	The instructional materials that academics use to teach the subjects in the TE curriculum reflect the best current knowledge in this field of study.	1 2 3 4 5 6
	38.	The instructional materials are free of gender and ethnic bias	1 2 3 4 5 6
	39.	The instructional materials are written at an appropriate level of difficulty.	1 2 3 4 5 6
	40.	The instructional materials are designed and organized in a manner that facilitates teacher use.	1 2 3 4 5 6
	41.	The instructional materials reflect learning principles; they offer explanation, application in real life, reinforcement if needed and motivation	1 2 3 4 5 6
	42.	The instructional methods used by teachers reflect the best current knowledge about teaching that field of study	1 2 3 4 5 6
Curriculum Learned	43.	I perceive that pupils believe that what they are learning is	1 2 3 4 5 6

		useful and meaningful.	
	44.	I perceive that pupils achieve the specified objectives at a satisfactory level.	1 2 3 4 5 6
Curriculum Effects (Commitment & Professional Development)	45.	Even if my place of work does not give opportunity for formal or informal learning, I look for activities to do so.	1 2 3 4 5 6
	46.	Because I participate in the development and improvement of the curriculum I feel an important part of the institution.	1 2 3 4 5 6
	47.	Because I participate in the development and improvement of the curriculum I feel empowered by the institution.	1 2 3 4 5 6
	48	Because I participate in the development and improvement of the curriculum I feel enthusiastic about my job.	1 2 3 4 5 6
	49.	Due to the continuous development of the curriculum I have the opportunity to continue growing in formal learning activities such as: courses, workshops and certifications.	1 2 3 4 5 6
	50.	Due to the continuous development of the curriculum I have the opportunity to continue learning in informal activities such as discussions with colleagues, writing publications, attending conferences, managing a project etc.	1 2 3 4 5 6
	51.	Even if my place of work does not give opportunity for formal or informal learning, I look for activities to do so.	1 2 3 4 5 6