DOCTORAL (PhD) THESIS

CSILLA PESTI

THE EVOLUTION OF TEACHER EDUCATION PROGRAMS IN DIFFERENT COUNTRIES WITH A SPECIAL FOCUS ON THE ROLE OF PRACTICUM IN DEVELOPING TEACHER COMPETENCES

2019

EÖTVÖS LORÁND UNIVERSITY

FACULTY OF EDUCATION AND PSYCHOLOGY

UNIVERSITY OF INNSBRUCK

FACULTY OF TEACHER EDUCATION

CSILLA PESTI

THE EVOLUTION OF TEACHER EDUCATION PROGRAMS IN DIFFERENT COUNTRIES WITH A SPECIAL FOCUS ON THE ROLE OF PRACTICUM IN DEVELOPING TEACHER COMPETENCES

Doctoral School of Education

Head of the Doctoral School: Gábor Halász, DSc habil.

European Doctorate in Teacher Education Programme

Leader of the programme: Gábor Halász, DSc habil.

Supervisors:

János Győri, Ph.D. habil., Erika Kopp, Ph.D. habil., Christian Kraler, Ph.D. habil.

Members of the review board:

Chairperson:	Andrea Kárpáti, DSc
Secretary:	Nóra Rapos, Ph.D. habil.
Reviewers:	Ágnes Boreczky, CSc
	Michael Schratz, Ph.D. habil.
Members:	Sándor Lénárd, Ph.D habil.
	Orsolya Kálmán, Ph.D.
	Markus Ammann, Ph.D.

Budapest, 2019

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. 676452.

EÖTVÖS LORÁND TUDOMÁNYEGYETEM

Declaration form for disclosure of a doctoral thesis

I. The data of the doctoral thesis:

Name of the author: Csilla Pesti

MTMT-identifier: 10046296

Title and subtitle of the doctoral thesis: The evolution of teacher education programs in different countries with a special focus on the role of practicum in developing teacher competences

DOI-identifier[1]: 10.15476/ELTE.2018.237

Name of the doctoral school: Doctoral School of Education

Name of the doctoral programme: EDiTE

Name and scientific degree of the supervisor: Erika Kopp, Ph.D., János Győri, PhD

Workplace of the supervisor: ELTE PPK

II. Declarations

1. As the author of the doctoral thesis,[2]

a) I agree to public disclosure of my doctoral thesis after obtaining a doctoral degree in the storage of ELTE Digital Institutional Repository. I authorize Dániel Kulcsár, the administrator of the Students Registrar Office of the Doctoral School to upload the thesis and the abstract to ELTE Digital Institutional Repository, and I authorize the administrator to fill all the declarations that are required in this procedure.

[1] Filled by the administrator of the faculty offices.

[2] The relevant part shall be underlined.

b) I request to defer public disclosure to the University Library and the ELTE Digital Institutional Repository until the date of announcement of the patent or protection. For details, see the attached application form;[3]

c) I request in case the doctoral thesis contains qualified data pertaining to national security, to disclose the doctoral thesis publicly to the University Library and the ELTE Digital Institutional Repository ensuing the lapse of the period of the qualification process.;[4]

d) I request to defer public disclosure to the University Library and the ELTE Digital Institutional Repository, in case there is a publishing contract concluded during the doctoral procedure or up until the award of the degree. However, the bibliographical data of the work shall be accessible to the public. If the publication of the doctoral thesis will not be carried out within a year from the award of the degree subject to the publishing contract, I agree to the public disclosure of the doctoral thesis and abstract to the University Library and the ELTE Digital Institutional Repository.[5]

2. As the author of the doctoral thesis, I declare that

a) the doctoral thesis and abstract uploaded to the ELTE Digital Institutional Repository are entirely the result of my own intellectual work and as far as I know, I did not infringe anyone's intellectual property rights.;

b) the printed version of the doctoral thesis and the abstract are identical with the doctoral thesis files (texts and diagrams) submitted on electronic device.

3. As the author of the doctoral thesis, I agree to the inspection of the thesis and the abstract by uploading them to a plagiarism checker software.

Budapest, 21.12.2018.

Signature of thesis author

[3] Submitting the doctoral thesis to the Disciplinary Doctoral Council, the patent or protection application form and the request for deferment of public disclosure shall also be attached.

[4] Submitting the doctoral thesis, the notarial deed pertaining to the qualified data shall also be attached.

[5] Submitting the doctoral thesis, the publishing contract shall also be attached.

Acknowledgements

I would like to thank my supervisors, Erika Kopp, János Győri and Christian Kraler for accompanying me on this three-year-long journey of my PhD. Their careful guidance, professional and personal support contributed in a great deal to the successful implementation of the project, as well as writing the dissertation.

I am also grateful for all my colleagues, professors and peers at the Faculty of Education and Psychology at Eötvös Loránd University. I felt like home there from the first day, and all your encouragement in the last weeks of finishing the dissertation write-up helped me through the "dark times". Moreover, the support I got from the University of Innsbruck during the one semester that I spent there, and even beyond those months is of great value to me.

All my thanks are due to those student teachers who agreed to take part in my research and share their valuable experiences with me. Although not strictly related to my research, I would like to express my gratitude to the students of The Learning Teacher courses I taught, working with them was one of the best and most cherished memories from the last three years.

It is hard to find the words to express how thankful I am to the whole EDiTE community. Tímea Szőllősi, Luca Alexa Erdei, Kinga Káplár-Kodácsy for shorter periods, and Judit Saád for almost throughout the whole project eased my work with their administrative and technical support. My peers, researchers, supervisors and experts, members of various project committees, thank you!

I an also thankful to all the great teachers, educators, mentors I have met and learnt from, especially to Dénes Tóth and Dr. Péter Tóth, who introduced me the world of research. Finally, but most importantly, I am endlessly thankful to my friends and, most importantly, to my family, who were always there for me and with me. Although I spent much time thinking about Bob Dylan's lyrics, more specifically one line asking "How does it feel to be on your own, with no direction home?", thanks to my family even in the maze of my research journey I never felt I am on my own, and I always had the direction home.

The doctoral (PhD) thesis is part of the European Doctorate in Teacher Education (EDiTE) project that has received funding from the European Union's Horizon 2020 research and innovation programme under Marie Sklodowska-Curie grant agreement number 676452.

Foreword

The four-year-long project titled European Doctorate in Teacher Education (EDiTE)[6], supported by the European Union's Horizon 2020 research and innovation programme[7] tackles the profound interdependence of educational research and practice by the researchers addressing the theme "*Transformative Teacher Learning for Better Student Learning within an Emerging European Context*". A consortium of five universities[8] implements the project between 2015 and 2019. The Early Stage Researchers involved in this project and employed at the universities conducted their research projects relying on the following three pillars:

1. transformative teacher learning,
2. better student learning, and
3. emerging European context.

The Learning Teacher research program[9] of the Institution of Education at ELTE is the Hungarian consortium partner's main contribution to the common EDiTE research program. Its main thematic focus is on teacher learning, more specifically on teacher learning in the context of practice and work. The institutional research program, including three individual PhD research studies, intends to answer the following questions:

1. How do teachers learn during practice?
2. How can teacher learning for effective pupil learning be improved?

Within The Learning Teacher framework (and therefore within the EDiTE project) my individual research titled "*The evolution of teacher education programs in different countries with a special focus on the role of practicum in developing teacher competences in teacher education programs*" aims to reveal the role of practicum of initial teacher education programmes in developing student teachers' competences and preparing them for conducting

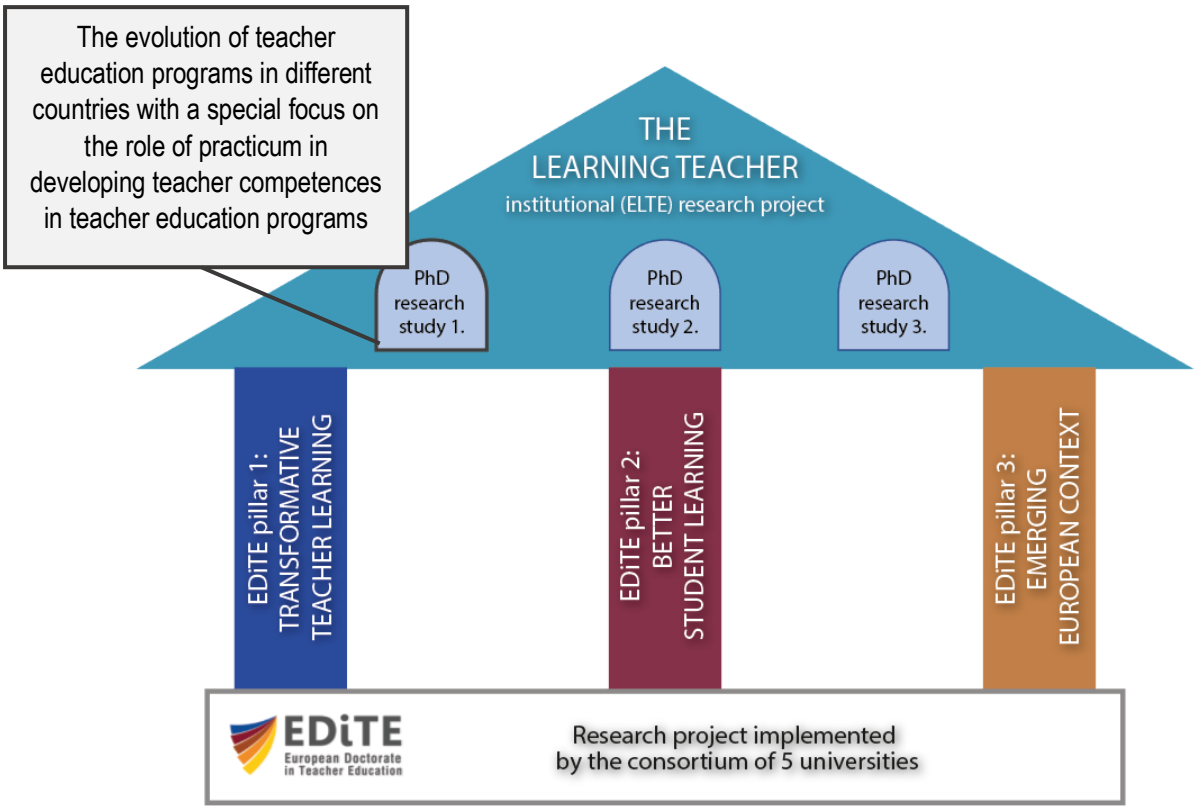
[6] The official webpage of the project: www.edite.eu

[7] Marie-Sklodowska-Curie grant agreement number 676452

[8] 1. University of Innsbruck – Innsbruck, Austria; 2. Eötvös Loránd University (ELTE) – Budapest, Hungary; 3. University of Lower Silesia – Wroclaw, Poland; 4. Masaryk University – Brno, Czech Republic; 5. University of Lisbon – Lisbon, Portugal

[9] http://www.eng.ppk.elte.hu/wp-content/uploads/2015/11/EDiTE-EJD-H2020-ELTE-Research-Program-20151105.pdf

practice-oriented research in the cases of two universities from Hungary and Austria. With Figure 1. I intended to visualise the disposition of the research within the research frameworks on the consortium level (EDiTE) and the institutional level (The Learning Teacher).



1. Figure. Positioning my PhD research within the research frameworks on the consortium level (EDiTE) and the institutional level (The Learning Teacher)

Preliminary review of the literature and a pilot study[10] have proved that the study of the whole spectrum of teacher competences exceeds the scope of an individual PhD research project, therefore I arrived at a conclusion to study the proposed issue which was defined on an institutional level through the lenses of research-based teacher education and the concept of teachers as researchers from a student teachers' perspective. With my research, I have embarked on a multimodal approach to expand the knowledge on student teachers' learning through practice.

[10] Present PhD dissertation does not include the pilot study.

Abstract

Educational stakeholders shall work in collaboration for achieving quality and effectiveness in education. However, there is a gap between practitioners, researchers, and policy-makers. The literature says that practitioners shall be in the centre of knowledge creation. Therefore initial teacher education (ITE) has an acknowledgeable role in preparing future teachers for such endeavours in the form of empowering them to conduct research. Numerous studies deal with the importance of teacher educators' engagement in research, and although there are also endeavours to engage student teachers, it is less systematic on the level of initial teacher education programmes, and it is a less researched issue. The present study aims to reveal the role of practicum in ITE programmes in developing student teachers' competences and preparing them for conducting practice-oriented research in the cases of two universities from Hungary and Austria. Data were collected through document analysis (course descriptions, n=63), and interviews (student teachers, n=6) and group interviews (with the total involvement of 61 student teachers, n=8). The present study revealed that the research-related methodological repertoire of student teachers is mostly restricted to lesson observations, interviews, and questionnaires, and there is a lack of research into their practice. This raises the question whether ITE provides a reliable foundation for student teachers to integrate research into their everyday practice in order to improve their practice and/or the profession in general, to become curriculum developers, or to contribute to school development, all these with the aim to foster better student (pupil) learning. Reflection is a principal activity in both cases of this study, and there are numerous mentions of activities related to reflection throughout the collected data. Although there is evidence for integration research into teaching, student teachers seem to be closer to the paradigm of the teaching profession that Menter et al. (2010) identified as the paradigm of the reflective teachers.

Table of contents

List of tables

List of figures

Introduction

Problem statement[11]

Studies argue that the quality and effectiveness of an education system cannot exceed the quality of the teacher labour force (McKinsey Report, 2007); therefore, the relevant educational stakeholders, including practitioners or in-service teachers, researchers, and policymakers should focus on improving the quality of the profession (Eötvös Loránd University EDiTE Team, 2014). Although stakeholders shall implement such an improvement in collaboration and mutual recognition, in reality, there is a gap between educational research, educational practice, and educational policy making (Commission of the European Communities, 2007; Snoek, 2011). Dewey (LW, 5) tackled the issue of using scientific research results in schooling – or with other words, closing the gap between educational research and practice – almost a century ago. He argued that

> [c]reating systematic methods of inquiry into issues of educational practice promises to enable educators to understand education better; to control it less haphazardly; to promote steady and cumulative growth of intelligent, communicable insight and power of direction in schooling; and to liberate schooling practice from uniformity of approach by describing far-reaching purposes of schooling growing out of conditions wider and deeper than daily need. (Seals, 2004, pp. 1-2)

The traditional model of educational research, which is expert-led, peer-reviewed, and where dissemination is a top-down process, does not decrease the gap between the actors (Pesti et al., 2018). Moreover, from the practitioners' point of view educational research fails to provide useful results for their everyday practice. Finally, the stakeholders are not ready to collaborate in an interdisciplinary and interprofessional manner. Although numerous initiatives focus on the encouragement of cooperation between academics and practitioners, the issue is still an urgent problem

A new model, where practitioners are at the heart of knowledge creation processes is highly needed and, in such a model, other relevant stakeholders should find a way to approach

[11] This chapter forms an integral part of a previous publication (Pesti, Gordon Győri & Kopp, 2018)

practitioners (Hargreaves, 1999; Pesti et al., 2018). Policies in the European Union have turned towards encouraging cooperation between academics and practitioners in the form of building bridges between the worlds of academia and practice (Eötvös Loránd University EDiTE Team, 2014; Pesti et al., 2018).

Numerous studies deal with the importance of teacher educators' engagement in research (e.g., Cochran-Smith, 2005), and although there are also endeavours to engage student teachers (Smith & Sela, 2005; Ulvik, 2014), it is a less researched issue (Smith, 2015; Pesti et al., 2018). One long-term solution might be to bring educational research closer to student teachers by research-based initial teacher education programmes, by preparing them to incorporate the results of educational research in their everyday practice and through shaping their attitude for being active agents of change by participating in research initiatives, and by enabling them to conduct practice-oriented research themselves (Pesti et al., 2018). Although initial teacher education is just a short phase compared to the whole career of a teacher, it plays a crucial role in laying the fundamentals for future teachers' continuous professional development endeavours.

Some think that initial teacher education should not aim to raise awareness of the importance of educational research. However, the majority of in-service teachers do not admit doing any research, since they believe lesson observations, keeping journals cannot be considered as "real" research since during the initial teacher education phase this "message" was communicated to them by presenting only big-scale, nation-wide research projects. The education community has recognised the influential role of teachers as researchers since the possibility of understanding the complexity in a school community is highly increased if practitioners have the skills and opportunities to initiate research activities within their environment (Gray, 2002; Pesti et al., 2018).

One of the major issues regarding educational research results is its generalizability that is substantially limited by the context. It is the context (among some other factors) that makes educational science the hardest to-do-science (LW, 5; Berliner, 2002), and it is the context that contributes to the (mis)belief of educational research results not being useful, or usable in the everyday practice of teachers. Student teachers should be prepared to deal with this issue by being aware of it and being able to adapt research results to specific problems, to specific contexts.

Becoming an educational researcher in its traditional interpretation might not be the goal of every student teacher, but being aware of the importance of educational research and ways of adapting results to local contexts, being able to collaborate with relevant stakeholders (such as researchers) in an interprofessional manner and shaping an attitude for being an active agent of change by participating in research initiatives at one point of their career are issues that initial teacher education should focus on.

Structure of the dissertation

The dissertation follows a traditional structure including the following chapters: Literature Review, Context of the research, Methodology, Findings, Discussion, and Conclusions. Each of these chapters and sub-chapters start with a chapter preview providing not only a structural insight into what follows but in some cases a justification as well; and end with a chapter summary that besides its primary function of summarizing the chapter's content also contains a forward-pointing paragraph threading the chapters and sub-chapters into a coherent piece of writing.

The first chapter is a comprehensive review of relevant literature, organised into three main themes: teachers' professional knowledge, initial teacher education programmes, and student teachers as researchers. Throughout the literature review, I intended to provide a problem-focused summary, analysis, and synthesis of the existing knowledge in order to provide a common base for exploring the research topic. Although it is not a systematic literature review, some of the methodological considerations of it have been followed while conducting the literature review (e.g., principles for identifying publications, documentation).

The second chapter outlines the research context from the perspectives of teacher professionalism and the systems of initial teacher education on the levels of international discourse and national contexts regarding the two countries that are relevant from present project's point of view, Hungary and Austria.

The third chapter, titled Methodology, intends to provide an elaborated description of methodology-related issues, considerations, and decisions I took in the course of my PhD research. Firstly, the philosophical assumptions that guided the PhD research and formulated the base for further methodological decisions are presented, including the research approach and design, as well as the various methods of data collection.

The fourth chapter contains the presentation of the findings. Due to the case study nature of the research, the findings are presented in two cases: the case of the Hungarian university and the case of the Austrian university. Each case covers two major parts: the first part deals with the findings related to document analysis of ITE programmes, both from before the reform of the ITE system and the current one, while in the second part I present the findings related to data collected by interviewing student teachers.

The fifth chapter includes the discussion of the findings. The analytical framework developed based on the literature review is used as guidance in this chapter. The discussion of findings follows the case study structure, but the chapter is closed with a joint elaboration on the research questions.

Besides disclosing the conclusions, the sixth chapter covers the study's limitations, as well as implications for practice, policy making, and future research.

1. Literature review

Chapter preview

This chapter intends to provide a comprehensive overview of relevant literature, organised into three main themes: teachers' professional knowledge, initial teacher education programmes, and student teachers as researchers. Although each sub-chapter ends with an attempt of summarising the most important messages, the chapter of Literature review is completed by a framework combining the three central theme. This framework is used throughout the doctoral thesis.

1.1 Teachers' professional knowledge in the context of initial teacher education

Chapter preview

Similarly to numerous issues in teacher education, such as the tension between theory and practice, research and teaching, parallel and consecutive models of teacher education systems (Zgaga, 2017), teachers' professional knowledge can be spread out between two extremes: one is a professional knowledge that is closer to theory, while the other extreme is a professional knowledge that is closer to practice. This tension and the way the relevant stakeholders of teacher education position themselves on this axis have significant implications for teacher education on micro, macro, and meso levels. Therefore, from the perspective of understanding how teacher education programmes evolve, as well as understanding the role of practicum in developing teacher competences, teachers' professional knowledge forms an integral part of the present research.

This chapter firstly provides a comprehensive overview on knowledge from an epistemological point of view, where the different forms of knowledge are discussed in pairs through the lens of teacher education for more emphasised contrast: a priori and a posteriori knowledge, explicit and tacit knowledge, propositional and procedural knowledge. Secondly, building on the previously introduced forms of knowledge, I narrow the discussion down to teachers' professional knowledge, covering various issues such as where professional

knowledge is constructed (strictly within school contexts, or outside of them as well), how professional knowledge is formed (transferred from one person to another, or constructed by experience), and what constitutes professional knowledge (introducing Shulman's list of categories of teachers' professional knowledge base). The final part of this chapter deals with teacher competences with the purpose to establish the grounds for justifying the relevance of the concepts discussed in previous chapters (teachers as researchers and research-based teacher education).

1.1.1 Knowledge from an epistemological point of view

In order to discuss professional knowledge in the context of teacher education, it is inevitable to reach back to different forms and taxonomies of knowledge from an epistemological point of view. While some authors prefer to use the construct knowledge and beliefs (e.g., Shulman, 1987; Putnam & Borko, 2000), some others (e.g., Bullock, 2011; Fenstermacher & Richardson, 2005) argue that distinguishing these two concepts is arbitrary. Moreover, defining what knowledge is, and compiling a list of different types of knowledge exceed the scope of any science, because „knowledge is purely philosophical; debates span centuries, arguments supersede fact, and everyone has a different opinion about what is, or is not, knowledge" (Gemma, 2014). Table 1. summarises the different forms of knowledge from an epistemological point of view and presents them in pairs in order to emphasise the different philosophical views on knowledge (Gemma, 2014), and to facilitate the discussion on teachers' professional knowledge throughout the thesis.

1. Table. Different forms of knowledge from an epistemological point of view (based on Gemma, 2014)

A priori knowledge	A posteriori knowledge
- "from before" or "from earlier" - what a person derives from the world without experiencing it	- "from what comes later" or "from what comes after" - first having an experience and then using logic and reflection to derive understanding from it

Explicit knowledge	Tacit knowledge
- recorded and communicated through mediums - what is contained is less important than how it is contained - it can be easily and quickly transmitted from one individual to another	- it is challenging, if not impossible, to communicate tacit knowledge through any medium - tacit knowledge can only be communicated through consistent and extensive relationships or contact - no actual transfer of knowledge, but rather two knowledge are born

Propositional knowledge	Non-propositional knowledge
- it can be expressed in propositions, in declarative sentences or indicative propositions - knowing that something is true	- also referred to as procedural knowledge - the knowledge that can be used, applied to something - it is acquired by doing

knows how to teach (knowledge for practice)	teaches (knowledge in practice)

The first pair of different forms of knowledge consists of *A priori* and *A posteriori knowledge*. A priori knowledge or knowledge "from before, "from earlier" refers to a form of knowledge that is dependent on what a person derives from the world without experiencing it. In contrary, A posteriori knowledge or knowledge "from what comes later", "from what comes after" is a form of knowledge that is dependent on experiences, where a person uses inductive reasoning to gain knowledge. In philosophy, this type of knowledge is often referred to as empirical knowledge, or with other words, a knowledge that is based on observation.

The second pair of different forms of knowledge consists of *explicit and tacit knowledge*. Explicit knowledge, similarly to A priori knowledge, is more formal, more reliable. Some of the most significant characteristics of it are that it can be transmitted in a relaxed and quick manner and that it is organised systematically. Tacit knowledge is precisely the opposite of explicit knowledge from the aspect of transmission: it is highly demanding, some may argue that almost impossible to transmit tacit knowledge through any medium since it can be achieved through experience, and in this sense, it is similar to A posteriori knowledge. The transitions between these two forms of knowledge are of high relevance when discussion teachers' professional knowledge, because teachers' professional knowledge is mostly tacit

(Polányi, 1966), however, there are endeavours to make this knowledge "visible" and usable to others.

Nonaka and Takeuchi (1995) differentiate four types of transitions between explicit and tacit knowledge (ELTE Pedagógiai és Pszichológiai Kar, 2015):

1. externalisation happens when tacit knowledge is transitioned into explicit knowledge (e.g., when a teacher publishes his/her good practices on an online platform),
2. combination occurs when different explicit pieces of knowledge are combined (e.g., when a teacher and a special education teacher discuss the different ways of working with children with learning disabilities),
3. internalisation is when explicit knowledge is transformed into tacit knowledge (e.g., when a teacher tries out a new method in the classroom that he/she learnt about on a professional development event), and
4. socialisation takes place when tacit knowledge is being transmitted (e.g., a student teacher and his/her mentor teacher work together).

The third pair of different forms of professional knowledge consists of *propositional and procedural knowledge*. Following the logic of presenting knowledge-pairs in Table 1., propositional knowledge is similar to A priori knowledge and explicit knowledge, since it refers to knowledge that is based on knowing that something is true. If one accepts that propositional knowledge is knowledge of something, procedural knowledge can be described as knowledge of how to do something, which aligns with A posteriori and tacit knowledge's characteristics, that it is a knowledge based on experience, it is acquired by doing.

For decades traditional education, in general, was in favour of propositional knowledge – in the context of teacher education, this implies that teacher education enabled student teachers to know how to teach, to transmit knowledge for practice (Cochran-Smith & Lytle, 1999). However, there has been a change towards procedural knowledge in education, and for teacher education, this implies that teacher education should enable student teachers to teach, to acquire knowledge in practice (Cochran-Smith & Lytle, 1999). This shift towards procedural knowledge affects the continuum of a teachers' career, including the phases of initial teacher education, induction, and professional development, and it will be discussed in more details in the following subchapter.

1.1.2 Teachers' professional knowledge

The summary of epistemological considerations of knowledge in the previous chapter provides a foundation for further elaborating on professional knowledge of teachers. Having the words that constitute this construct examined independently from each other suggests that teachers' professional knowledge is yet another debatable, and continuously changing construct. The professional part of the expression implies that it is related to a profession, that it requires specialised knowledge which can be acquired with often long and intensive academic preparation. Moreover, it has the connotation of creating a professional knowledge base which might be easy in some fields but is problematic in teacher education. As Munby, Russel and Martin (2001, p. 900) explains,

> What is at first disarmingly simple turns out to be endlessly complex with many conceptions, many researchers, many viewpoints, and many epistemological and moral issues each vying for our attention …. There is a tension in the different views of what counts as professional knowledge and even of how to conceptualise knowledge.

Teachers' professional knowledge (together with professional judgement) can be considered as the "invisible foundations of the teacher's work" (Capel, Leask & Turner, 2001, p. 71). Although this metaphor of the invisible foundation of teaching profession might seem acceptable, it does not reveal much about *where* this foundation is positioned, *how* one can construct and build on this foundation and *what* constitutes this foundation. Regarding the *where*, the place where the acquisition and construction of professional knowledge takes place, two major traditions can be distinguished. Some argue that professional knowledge is constructed within schools (Bullock, 2011), while in opposition to this, some others argue that professional knowledge is constructed within and outside of school context (van Manen, 1991). The *how* issue refers to the debate whether professional knowledge is transferred in the form of propositions (propositional knowledge) or constructed by experiencing (procedural knowledge or experiential knowledge). Finally, the question of *what* constitutes this foundation raises awareness of the importance of considering the different categories of professional knowledge.

Despite the difficulties to define teachers' professional knowledge (or due to this very reason), it has the interest of educational researchers, policymakers and practitioners for

decades. Although the propositional and procedural types of knowledge have been previously discussed, this pair of knowledge has a great significance in teachers' professional knowledge and has been influencing the research field for decades. Bullock (2011) has drawn the path from propositional knowledge to experiential knowledge in reflection on teacher education. Propositional knowledge or paradigmatic knowledge (Bruner, 1986) is the theoretical knowledge that is taught by academics, therefore usually acquired within the university walls. Cochran-Smith and Lytle (1999) explain this as the knowledge for practice, "the transmission of research-based knowledge about teaching by university professors to student teachers" (Bullock, 2011, p. 23). In this sense, student teachers are merely consumers of existing knowledge, and their preparation for the profession is based on a process where they apply knowledge learned within the walls of universities to the school context (translating this into teacher education programmes would mean that coursework always precedes practicum). With his work Schön (1983) reconceptualized the epistemology of professional knowledge by critiquing the technical rationality („the instrumental problem solving by the application of scientific theory (putting theory into practice" (p. 21)) and introducing a new epistemology of a practice that is founded on tacit knowledge: on knowing-in-action and on reflection-in-action. Bullock (2011) argues that teachers' professional knowledge and the way they construct it can be viewed through the lenses of knowing-in-action and reflection-in-action, the last couple of decades' major research strands on teachers' professional knowledge were following these assumptions (e.g., Clandinin & Connelly, 1996; Munby & Russel, 1992). Moreover, this also suggests the emphasis of knowledge that is based on experiencing (non-propositional, procedural or experiential) over propositional knowledge.

Knowing-in-action or the characteristic mode of practical knowledge means that practitioners make decisions and act on them without being able to articulate their thinking. As Schön (1983) explains it:

> Once we put aside the model of Technical Rationality, which leads us to think of intelligent practice as an application of knowledge to instrumental decisions, there is nothing strange about the idea that a kind of knowing is inherent in intelligent action. Common sense admits the category of know-how, and it does not stretch common sense very much to say that the know-how is in the action-that a tightrope walker's know-how, e.g., lies in, and is revealed. (p. 50)

Besides making decisions and carry out actions at the moment, practitioners may reflect on these at the same time (Schön, 1983):

> If common sense recognises knowing-in-action, it also recognises that we sometimes think about what we are doing. Phrases like “thinking on your feet", "keeping your wits about you", and "learning by doing" suggest not only that we can think about doing but that we can think about doing something while doing it. Some of the most interesting examples of this process occur in the midst of a performance. (p. 54)

Based on this epistemology of teachers’ professional knowledge, teachers are not only consumers of an existing knowledge base, but throughout their practice, they create their professional knowledge. Teacher education has a vital role in creating opportunities for those learning to teach in order to „enhance, make explicit, and articulate the tacit knowledge embedded in experience and the wise action of very competent professionals” (Cochran-Smith & Lytle, 1999, p. 22).

As said earlier, it is immensely challenging to define what teachers’ professional knowledge exactly is, however, Shulman’s (1987) list of the different categories of teachers’ professional knowledge base is a widely accepted compilation, and it has influenced research strands in the last decades (e.g., the narrative approach (Clandinin & Connelly, 1996), or teachers’ metaphors (Munby & Russel, 1992)). Table 2. summarises the original list of categories and the items with what the list has been supplemented.

2. Table. Categories of teachers' professional knowledge (adaptation based on Shulman, 1987; Backes, Menegaz, Miranda, Cunha & Patrício, 2017)

Shulman's original list of categories of teachers' professional knowledge base	**Content knowledge**	What do teachers teach? This type of knowledge refers to the (disciplinary) content that teachers teach including theoretical and practical implications and the relation with other disciplines.
	General pedagogic knowledge	How do teachers teach? This type of knowledge refers to general principles and strategies of classroom management and organisation.
	Pedagogic content knowledge	This type of knowledge refers to knowing how to integrate the subject and the didactics to ensure effective student learning
	Curriculum knowledge	This type of knowledge refers to knowing the materials and the programmes.
	Knowledge of learners and their characteristics	Who do teachers teach? This type of knowledge refers to the knowledge about pupils, students in an individual and collective manner, including their conceptions, preconceptions, forms of learning and other factors influencing their learning.
	Knowledge of educational contexts	This type of knowledge refers to teachers' understanding of the whole context of education, including micro-aspects (e.g., classroom), macro-aspects (e.g., school management).
	Knowledge of educational ends, purposes and values	This type of knowledge refers to teachers' awareness of the ends, purposes and values of education.
	Technology Pedagogic Knowledge (subject-specific and general) (Capel, Leask, & Turner, 2013)	This type of knowledge refers to teachers' knowledge about the use of information-communication technologies to ensure effective student learning.

1.1.3 Teacher competences

As described earlier, a shift from propositional towards procedural knowledge can be observed in teacher education, and this shift implies the opening up the borders of knowledge base to a skill base that are related to the use and creation of information and knowledge (Lynch & Smith, 2006), to an attitude base, as well as to other aspects. The way the concept of competences is interpreted in the context of teacher education nowadays has been summarized in Caena's influential paper (2011):

- "Competences represent a dynamic combination of knowledge, understanding, skills, abilities and values. Fostering these competences is the object of educational programmes." (González & Wagenaar, 2005, p. 14)
- "A competence is defined as the ability to meet complex demands in a particular context successfully." (Rychen & Salganik, 2003, p. 2);
- "To be competent means to be able to act appropriately (effectively) and professionally in a certain context. Somebody who is competent uses knowledge, skills, attitudes, personal characteristics and values with alertness to the specific situation and in an integrated way." (Koster & Dengerink, 2008, p. 139)

Although it might seem interchangeable at first sight, the terminology used in professional discourse differentiates teaching competences from teacher competences (European Commission, 2013; OECD, 2009). Teaching competences emphasise the role of teachers in the classroom (Hagger & McIntyre, 2006), while the term teacher competences suggests a wider view of the profession on different levels (individual, institutional, community) (European Commission, 2013). Although these two approaches of interpreting competences of teachers interweave (European Commission, 2013), I prefer to use teacher competences within this study, because this set of competences embraces "attitudes to constant professional development, innovation and collaboration" (p. 10), which can be essential triggers or consequences of teacher research, and therefore related to the theme of my research.

Two "tribes" can be distinguished when it comes to professional discussions on teacher competences. One group of stakeholders thinks that competences (together with standards) are a tool for measuring performativity, and as such it "further reinforces the narrowly constructed and constrained understandings of professional knowledge and professionalism that are fostered through such a system" (McMahon, Forde, & Dickinson., 2015, p. 162), and it can be interpreted as "an intensified, external control of teachers that might have unintended, disempowering effects" (European Commission, 2013, p. 26). The other group of stakeholders considers competences as a set of knowledge, skills and attitudes that teachers shall possess (European Commission, 2012), that promotes „teacher agency, empowerment and responsibility" (European Commission, 2013, p. 26) in order to cope with the rapidly changing demands of the teaching profession.

Despite the numerous different interpretations of and approaches to teacher competences, there are some reoccurring aspects in the existing literature regarding what competences shall teachers have (European Commission, 2013):

- subject-specific knowledge (Krauss et al., 2008; Shulman, 1987) that supports effective teaching practice in different learning environments (McDiarmid & Clevenger-Bright, 2008),
- effective and good teaching (Fenstermacher & Richardson, 2005),
- adaptive expertise (Hatano & Oura, 2003; Vogt & Rogalla, 2009),
- social, cultural, institutional bounds (Putnam & Borko, 2000),
- mediation with stakeholders,
- communities of practice and inquiry (Cochran-Smith & Lytle, 2009; Hagger & McIntyre, 2006),
- reflective, interpersonal and research skills,
- critical, evidence-based attitudes (Lave & Wenger, 1991; McLaughlin & Talbert, 2001; Wenger, 1998).

Besides the core teacher competences, due to the continuously and in some contexts rapidly changing socio-cultural environment, information-communication technology-related innovations, teachers need a set of competences "to constantly innovate and adapt; this includes having critical, evidence-based attitudes, enabling them to respond to students' outcomes, new evidence from inside and outside the classroom, and professional dialogue, in order to adapt their practices" (European Commission, 2012, p. 22).

Chapter summary - Teachers' professional knowledge in the context of initial teacher education

The overview of different forms of knowledge in general boiled down to discussing teachers' professional knowledge not only in the way Shulman suggested it but following the line of thought of Cochran-Smith and Lytle (1999) by differentiating knowledge for practice and knowledge in practice. Knowledge for practice, or knowing how to teach, resembles with the characteristics of A priori, explicit and/or propositional knowledge, while knowledge in practice carries the features of A posteriori, tacit and/or procedural knowledge in it. In the

international trends of teacher education, a shift towards knowledge in practice could be observed – the role of practice is re-evaluated in many countries. Another difference between knowledge for practice and knowledge in practice is that the first one is mostly acquired within the university walls, while the latter one is more strongly related to the field of practice, to schools. Although Shulman's influential work regarding the knowledge base of the teaching profession and the importance of the pedagogical content knowledge still has significant relevance these days, to understand and discuss teacher professionalism besides knowledge one needs to take into consideration some other components, such as skills or attitudes, or with other words, teacher competences.

The way that relevant stakeholders think about teachers' professional knowledge and teacher competences has a major effect on the development, implementation and assessment of teacher education programmes. However, there are many other affecting features and processes, a brief overview of these follows in the next subchapter.

1.2 Teacher education programmes

Chapter preview

The past and present, the completed and ongoing changes in European society, culture, economy and technology have raised major challenges and in the process of meeting these challenges education and training play crucial roles. Recently an increasing amount of evidence has become available proving that the quality and effectiveness of education cannot exceed the quality of the teacher labour force; therefore policymakers (and other relevant stakeholders) should focus on improving the quality of the profession (Eötvös Loránd University EDiTE Team, 2014). Bakkenes, Vermut, and Wubbles (2010) also emphasise the importance of teachers as they are "the agents in shaping education for students and in bringing about change and innovation in educational practices" (p. 533) (Pesti et al., 2018). Furthermore, the Lisbon Strategy by the Council of the European Union has defined the improvement of the quality of education and training systems with an emphasis on the improvement of the quality of teacher education and teacher educators as one of the primary goals. Since the society bears diverse ideal for good teachers and good teaching (Kennedy, 2008), it is quite a difficult undertaking to define what good teacher education is, and as a consequence, what teacher education programmes should embrace.

However, in order to grasp the role of practice in developing teacher competences within initial teacher education programmes, I have found it necessary to explore some broader aspects of teacher education that reach out the domain of practicum, including traditional and non-traditional characteristics of teacher education systems, as well as the continuum interpretation of teacher education (initial teacher education, induction and continuous professional development). These general considerations are followed by their translations into initial teacher education programme design, detailing the structure of initial teacher education (parallel or consecutive), the paradigms or models of teaching (e.g., enquiring teachers, effective teachers, reflective teachers, or transformative teachers) (Menter, Hulme, Elliot, & Lewin, 2010), the content of training programmes (disciplines, pedagogy, methodology, psychology, and the distribution of these), and finally the relationship of theory and practice. Having the practicum component of initial teacher education programmes contextualised this way, as the last pillar of the chapter I discuss student teachers' learning during the practicum through the lenses of formal, organised informal (or nonformal), and everyday informal learning.

1.2.1 Teacher education – from traditional to non-traditional

Teachers are considered one of the most crucial factors in students' learning and, as the pillar of educational reforms, the fact that teachers matter is unquestionable. However, there is no universal agreement on the way they should be recruited, prepared and retained in teaching (Cochran-Smith & Zeichner, 2005). The criticism of traditional teacher education has begun in the 1990s, and the debates regarding various teacher education reforms are still a significant issue.

Some of the traditional characteristics of teacher education are the following (Buchberger, Campos, Kallos, & Stephenson, 2000; Zgaga, 2017):

- teachers at various levels of education were prepared for the profession in separate institutions, following different models (e.g., primary school teachers attended colleges, while grammar school teachers attended universities),
- the emphasis of initial, mostly strictly institutionalised and academically oriented teacher education (while neglecting the significance of continuous professional development of teachers);

- the strict separation of initial teacher education, in-service teacher education and further higher award work of teachers;
- the lack of systematic connection between teacher education, its stakeholders and education innovation and research.

The most efficient way for student teachers to learn how to teach is by studying, doing, reflecting, by collaborating with others, by looking at students and by sharing their experiences (Darling-Hammond, 1998), and due to the abovementioned characteristics, teacher education in its traditional sense does not support such learning. Various changes can be observed in the system of teacher education following its integration into universities and other higher education institutions. This inclusion, on the one hand, has strengthened teacher education and reduced some of the previously existing differences among teachers at various levels, but on the other hand, it has also led to the emergence of new issues (Zgaga, 2017):

1. due to the inclusion teacher education got in a dynamic relationship with other disciplines and academic professions, and
2. being part of the higher education system means that higher education reforms affect teacher education.

Since its inclusion into the higher education system, teacher education is expected to function according to the specific dynamics of HE systems, including the massification of HE, internationalisation, growing mobility, student attendance, academic managerialism, institutional rankings, etc. (Zgaga, 2017). In contrast with other regions of the world (e.g., USA), these dynamics are not the only factors influencing teacher education: in Europe in addition to the national debates, European (trans-national) influences should also be considered – the two most significant ones are the Bologna process and the Education and Training programme of the European Commission in 28 EU member countries. These processes put free movement of people in the highlight; therefore they intend to "Europeanise education". Despite some initiatives of Europeanising teacher education, it has remained on a national level, and it is still quite diverse.

1.2.2 Teacher education as a continuum

An essential goal of teacher education, in general, is to support teachers in their professional development throughout their professional career. According to Schulman and

Schulman's (2004) model of teaching, teacher education is supposed to prepare teachers for the following:

1. having a vision,
2. being motivated,
3. understanding of concepts and principles,
4. realising teaching into practice,
5. reflecting on his or her own experiences,
6. being a functioning member of a school community.

Teacher education is part of a continuous process (Buchberger et al., 2000), and it consists of the following phases (European Commission, 2010):

- initial teacher education,
- induction, and
- in-service teacher education or further education.

Since our knowledge-based society expects a continuous development of educational professionals (Meirink, Meijer, & Verloop, 2007), the dominant approach in Europe is that the different phases of a teacher's career should form a coherent continuum, and institutions that focus only on the first phase of this continuum (that is initial teacher education) do not fulfil their mission appropriately as teacher educators (Eötvös Loránd University EDiTE Team, 2014). There are numerous relevant stakeholders in different phases of the continuum, and their roles and responsibilities might change slightly or even significantly from phase to phase.

The ET2020 Working Group on Schools Policy (2015) in their document titled Shaping career-long perspectives on teaching - A guide on policies to improve Initial Teacher Education summarises a very crucial idea about initial teacher education as it follows (Pesti et al., 2018):

> Leading and supporting pupil learning requires every teacher to embark on a professional, social and personal journey that involves career-long professional development within collaborative learning environments. Initial Teacher Education lays the groundwork and sets the direction for this journey. National, regional and local governments and stakeholders have a shared responsibility to facilitate and sustain this in close collaboration. (p. V)

The European Commission (2010) describes initial teacher education as a stage where the preparation of teachers occurs, meaning that those who want to become a teacher acquire the necessary knowledge and skills.

The European Commission (2010) describes the induction as the second stage in a teacher's professional career, as the first years of confrontation with the reality.

According to the European Commission (2010), the third stage in a teacher's career (who has overcome the challenges of the previous phase) is the phase of continuing professional development. "Teaching is a learned and a learning profession, and every teacher should also be a learner" (Ministry of General Education, 2015, p. 1) – this thought emphasises the importance of continuous professional development and in-service teacher education. Teachers might never be considered "ready" or "done with learning" since the ongoing social, cultural and economic changes demand from this group of professionals to comply with the new situations and the new roles.

Contrary to old-fashioned ways of in-service teacher education, where professionals are extracted from their workplace environment, and their learning takes place in a different environment, the state-of-the-art concept of teachers' professional learning is considered dynamic, ongoing, continuous, as well as embedded in their workplace environment (Caena, 2011). The professional learning happens through experience and practice, and it includes the phases of goal setting, planning, practising and reflecting.

1.2.3 Considerations for initial teacher education programme design

The way we think about teaching and learning, the way one approaches the professional knowledge of teachers have significant implications into programme design in teacher education. According to Darling-Hammond (2006), a lot has been learnt about how to design effective teacher education programmes, and she argued that such programmes should include the following three critical components:

- „tight coherence and integration among courses and between coursework and clinical work in schools,
- extensive and intensely supervised clinical work integrated with coursework using pedagogies linking theory and practice, and

- closer, proactive relationships with schools that serve diverse learners effectively and develop and model good teaching“ (p. 1).

Besides these, those involved in the process of programme design should take into three significant problems that can be identified in the process of learning to teach. Firstly, pre-service teachers should “come to think about (and understand) teaching in ways quite different from what they have learned from their own experiences” (Hammerness, Darling-Hammond, & Bransford, 2005, p. 359). This issue is called the apprenticeship of observation (Lortie, 1975) – reflecting on the long period of pre-service teachers being only observant, students throughout their education. The second issue is referred to as the problem of enactment (Kennedy, 1999) – student teachers are not only expected to think like a teacher, but they also need to operationalise their knowledge. The third issue (Darling-Hammond & Bransford, 2007), the problem of complexity, reflects the everyday practice of teachers, where they have to “work with many students at once and have to juggle multiple academic and social goals requiring trade-offs from moment to moment and day to day” (p. 359). Initial teacher education should help student teachers in developing systematic thinking about this complexity.

Having reviewed the relevant literature, four major considerations related to initial teacher education programmes have emerged (Pesti, Rapos, Nagy, & Bohán., 2017):

1. the structure of ITE (parallel or consecutive),
2. paradigms or models of teaching (e.g., enquiring teachers, effective teachers, reflective teachers, or transformative teachers) (Menter et al., 2010),
3. the content of training programmes (disciplines, pedagogy, methodology, psychology, and the distribution of these), and
4. the relationship between theory and practice.

1.2.3.1 The structure of initial teacher education

„National educational policy’s commitment towards the parallel or the consecutive model is one of the oldest dilemmas of teacher education. According to OECD studies, in most of the countries the parallel model is characteristic for the lower levels of schooling. In the consecutive model, the student enters teacher training after obtaining a disciplinary qualification. Although this model is more flexible concerning entrance and decision making,

it makes the integration of knowledge and experiences less possible (McKenzie, Santiago, Sliwka, & Hiroyuki, 2005)“ (Pesti et al., 2017, p. 61).

The tension between parallel and consecutive structures of teacher education is the topic of the European discourse, and it also contributes to the fact that no decision has been made on their harmonisation (Zgaga, 2017). An interesting contradiction is that although the Maastrciht Treaty defined that the Community action should exclude “any harmonisation of the laws and regulations of the Member States”, an increase of comparability and compatibility of the European higher education systems could be observed. Despite teacher education being included in the higher education systems, it did not face the same harmonisation as other professions and disciplines. For example, for some countries the most painful issue of the Bologna process was to divide the study cycles to two phases (bachelor and master) – in many cases, the solution was the introduction of so-called “integrated master courses” which duration was five years. From a continental (traditional) philosophical point of view, the need for such long courses was justified by the judgement that the two-cycles systems lower the professional standards.

1.2.3.2 Paradigms of teaching

„A question arises: do the national policymakers and the training institutions take into consideration any training models, and in case yes, which ones (effective teacher, reflective teacher, enquiring teacher, transformative teacher) are used during the development of training programmes (Menter et al., 2010)? Is it advised or is it acceptable at all that institutions may represent different standpoints, and in case yes, how should it appear in their training programmes?“ (Pesti et al., 2017, p. 62).

Menter et al. (2010) differentiate four influential paradigms of teacher professionalism: the effective teacher, the reflective teacher, the enquiring teacher, and the transformative teacher. The major characteristics of these paradigms are summarised in Table 3.

3. Table. Paradigms of teacher professionalism

	Characteristics	Reference
Effective teacher	- Strongly emphasised standards and competence - Fully developed accountability mechanisms - Politically driven model (this is the dominant paradigm in the government discourse)	„It is the model for an age of accountability and performativity" (Mahony & Hextall, 2000) Criticism: the model restricts teacher professionalism, not enhances it (Stronach, Corbin, McNamara, Stark, & Warne, 2002; Hartley, 2002), teaching is defined regarding technical skills, restricted version of teacher professionalism (Hoyle, 1974)
Reflective teacher	- Foundations in the works of John Dewey (teachers as active decision-makers) and Donald Schön (values and theory informing decision-making) - Emphasis on and commitment to personal and professional development - The model has emerged "from within the teaching profession and from within sites of teacher education" (Menter et al., 2010, p. 22)	Pollard's (2008) cyclical approach to planning, making provision, acting, collecting data, analysing the data, evaluating and reflecting, planning the next step. „About 70 per cent of teacher education programmes led from universities and colleges were informed by some version of reflective teaching" (Furlong, Barton, Miles, Whiting, & Whitty, 2000) Criticism: „Does not itself imply a research orientation on the part of the teacher, although the model may be strongly influenced by a set of ideas that do promote just that conception" (Forde, McPhee, McMahon, & Patrick, 2006).
Enquiring teacher	- Teacher as researcher and curriculum developer - "In this model teachers are encouraged to undertake systematic enquiry in their classrooms, develop their practice and share their insights with other professionals" (Menter et al., 2010, p. 23) - The model has emerged "from within the teaching profession and from within sites of teacher education" (Menter et al., 2010, p. 22)	According to Stenhouse (1975), teachers should take a research approach (e.g., in the form of curriculum development) Research findings by Ponte, Beijard, and Ax (2004) showed that there is a need to incorporate inquiry-oriented approaches into initial teacher education programmes to ensure a foundation for similar professional learning in the future.
Transformative teacher	- Intending to challenge the status quo - Committed to progressive social change and greater social justice through education - The model has emerged "from within the teaching profession and from within sites of teacher education" (Menter et al., 2010, p. 22)	Sachs (2003) describes teaching as an activist profession.

1.2.3.3 Content of initial teacher education programmes

„In general, teacher education programmes' content contains elements related to the discipline, methodology, children's and adolescents' development and learning, and other education-related topics (e.g., psychology, history of education, teaching practice). In addition to this, the content and the internal distribution are primarily defined by the intention to provide a general pedagogical preparation (that also ensures the crossing between levels, subjects and school types) or to prioritise a specific field (McKenzie et al., 2005). However, the choice of disciplines and their proportion during the preparation for the teaching profession remains a constant question. Does the included psychological content provide enough support to handle the strengthening social issues that emerge as requirements of today's teachers (e.g., migration – interculturalism, drop-outs – poverty) (OECD, 2003; McKenzie et al., 2005; ATEE, 2006)?

Another content-related matter that regards the changed composition of student cohorts is if the preparation for academic studies should form the content of higher education studies or if it is an expectation at the entrance. Moreover, should the necessary skills, such as the native language, ICT competences, mathematical knowledge be considered as parts of the training content or should these be aspects for selection at the entrance to the studies?" (Pesti et al., 2017, p. 62).

1.2.3.4 Practicum in initial teacher education programmes

As it is described in a document of Eötvös Loránd University's research programme, titled The Learning Teacher[12], teacher education, and the relationship of teacher education and teaching practice are significantly affected by the recent social, cultural, economic and technical changes in Europe. Since practicum can be considered as an integral part of teacher education, due to the above-mentioned changes, practicum is expected to face several challenges, such as: restructuring educational programmes related to new theoretical models of learning, new stakeholders in teacher education with diverse professional background, new partnership models, initial teacher education and teachers' continuous professional development on the basis of standards. Furthermore, the increasing role of practicum has an impact on teacher education programmes, resulting changes in them on a theoretical, structural and content level. Despite the global educational discourse, these changes are contextualised,

[12] http://www.eng.ppk.elte.hu/wp-content/uploads/2015/11/EDiTE-EJD-H2020-ELTE-Research-Program-20151105.pdf

that is, strongly influenced by national and local contexts (Rapos, Kopp, Lénárd, and Szivák, 2014) by national school traditions and local school cultures.

1.2.4 Student teachers' learning during the practicum

The traditional way of learning that is situated in a school setting, steered by a teacher and that leads to a degree – often referred to as formal learning – is the subject of multiple studies, although it is not the only form of learning. Since learning interweaves many aspects of our lives, it could be considered a complex process; therefore, formulating a general definition causes difficulties and disagreements among disciplines. In the following paragraphs, learning should be interpreted in the context of teacher learning, more specifically in the context of student teachers' learning during their practicum.

1.2.4.1 Turning from formal towards informal learning

Due to the rapid changes in the socio-cultural environment, the globalised labour market expects workers to have a positive attitude towards lifelong learning that facilitates their continuous learning, building and rebuilding their knowledge, skills and attitudes (Van Noy, James, & Bedley, 2016), and the teaching profession is not an exception. Initial teacher education has an important role not only in providing and shaping the necessary competences of student teachers but in making them competent in facing new challenges as lifelong learners, who never cease to adapt to new situations in order to support their pupils' learning (The Teaching Council, 2011).

The venue of traditional learning (and teaching) has changed recently (e.g., the rapid development of ICT has led to a situation where the teacher in its traditional sense is not the only source of information) (Van Noy et al., 2016), and student teachers are as well exposed to the challenges that these changes raise. Although initial teacher education occurs dominantly among the walls of higher education institutions, school-based practicum forms an essential element of it. Although some components of the practice are regulated, it cannot be considered as formal learning to its full extent. Therefore the examination of it from an informal perspective is quintessential in understanding student teachers' learning during the practicum.

Various characteristics of learning and their framework contribute to the interpretation of learning that is, on the one hand, a continuum, and that, on the other hand, has different

levels of formality and informality (Colley, Hodkinson, & Malcolm, 2003a, Colley, Hodkinson, & Malcolm, 2003n). Hereby follows the interpretation of student teachers' learning during practicum according to the four attributes as proposed by Colley et al. (2003) and Colley et al. (2003b): location, process, content, and purpose.

Location: Teachers' learning is a highly specific issue regarding its formality. Several researchers accept that one of the most important features that differentiates formal learning from informal is that formal learning takes place in classrooms, while informal learning occurs at work, in a community or at home Van Noy et al. (2016). Regarding student teachers, the formal (and concerning time expenditure, in most cases the most consuming) part of their training takes place at higher education institutions. However, examining student teachers' learning during their school-based practice has numerous features of informal learning: even though it is located in a classroom, in a school context, it is primarily a learning environment for pupils, a work environment for teachers, and a mixture of learning and working environment for student teachers.

Process: Colley et al. (2003b) argue that the presence of a person who is responsible for directing the learning and providing support is another attribute that differentiates formal learning from informal. In case of formal learning, this person is a teacher or an instructor, while in case of less formal forms of learning, it can be a trained mentor or counsellor, or – if one considers knowledge sharing processes – even a co-worker. During their school-based practicum student teachers work in close collaboration with and learn from their mentors. Becoming a mentor obliges in-service teachers to meet specific requirements (e.g., mentoring training), and although the school-based practice has some pre-defined learning outcomes, the collaboration between student teachers and their mentors aims to focus on the tacit knowledge.

Content: Content, being the third attribute of differentiation, mostly refers to the fact whether learning happens according to a pre-established curriculum or it is situational, experience-based, or chosen by the learner (Merriam, Caffarella, & Baumgartner, 2006; Livingstone, 2001).

Purpose: Perrin and Marsick (Van Noy et al., 2016) explain informal learning on a continuum, intentional and incidental learning being the two endpoints. Among (1) intentional activities the authors mention learning review, coaching, and on-the-job-training, (2) less structured, but intentional activities include knowledge sharing, mentoring, self-study, etc., while (3) incidental activities refer to workers learning from each other, job shadowing, role

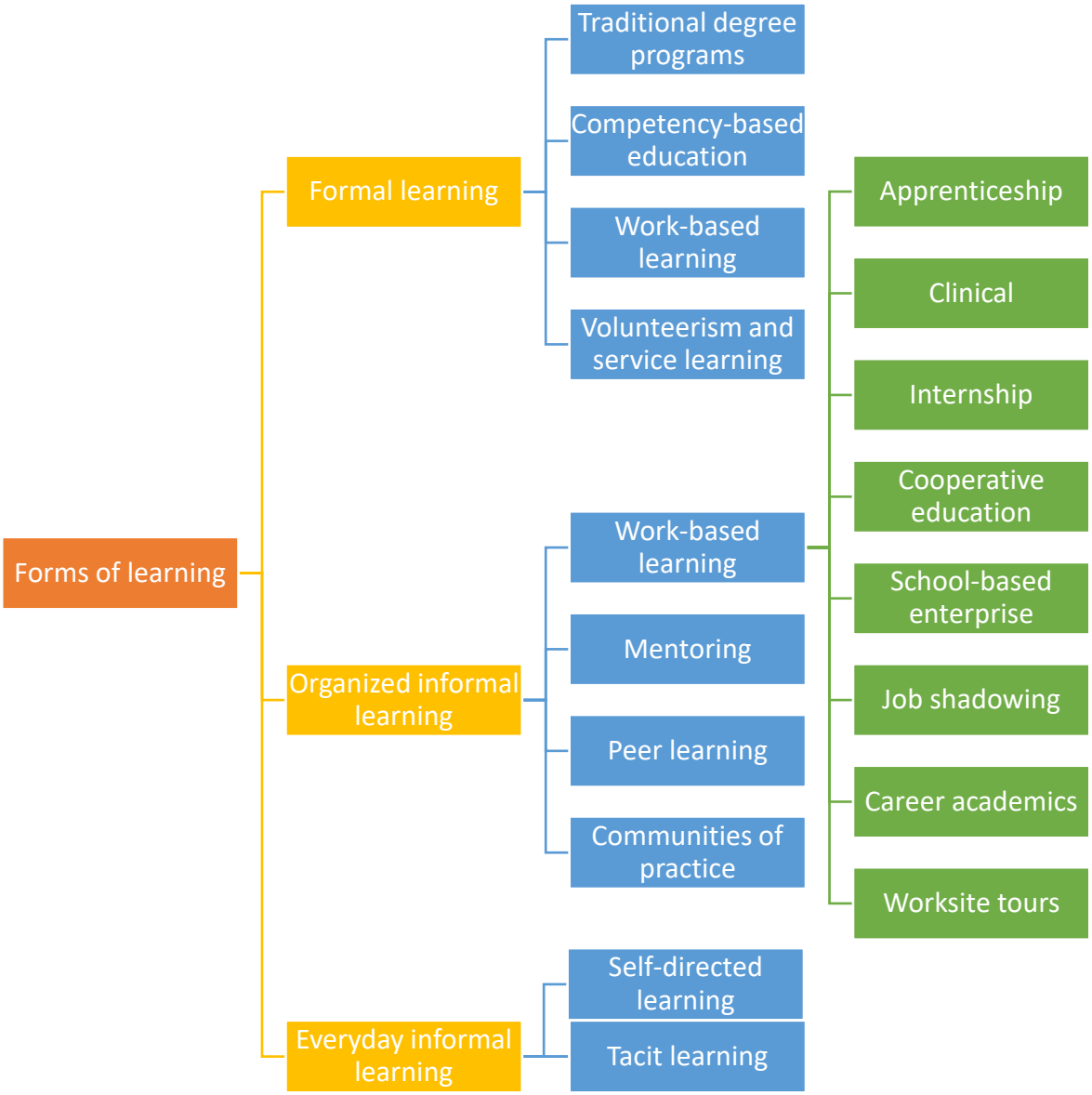
modelling, reflection, networking, etc. During the school-based practice student teachers may experience learning activities from all of the three categories, suggesting that practice cannot be considered as a merely formal learning process.

1.2.4.2 Forms of learning during the practicum

Based on the interpretation of student teachers' learning during their school-based practice in the framework of Colley et al. (2003a) and of Colley et al. (2003b) as described in the previous chapter, three forms of learning can be differentiated (Van Noy et al., 2016):

1. Formal learning
2. Organised informal learning
3. Everyday informal learning

School-based practice is a component of initial teacher education programmes; therefore, student teachers acquire educational credentials by completing it. Despite this, the examination of the four attributes that affect the level of formality (location, process, content and purpose) reveals that the student teachers' learning during the school-based practice has many aspects of informal learning as well. Figure 2. represents the different forms of learning, while the following subchapters examine student teachers' learning during focusing on the school-based practice in a formal, organised informal and everyday informal context.



2. Figure. Forms of learning (based on Van Noy et al., 2016)

Formal learning

According to Livingstone (2001), formal learning is delivered by an authority figure (a teacher) through a curriculum that contains a predefined body of knowledge. Van Noy et al. (2016) identifies the following specific types of formal learning: (1) traditional degree programmes, (2) competency-based education, (3) work-based learning, and (4) volunteerism and service learning. A significant portion of student teachers' learning is planned to be formal learning within initial teacher education programmes.

Organised informal learning

Organised informal learning, also referred to as nonformal learning, can be considered as a transition from formal to informal learning. Merriam et al. (2006) argue that nonformal learning is classroom-based, it has a curriculum and a facilitator, but it is short term and voluntary with little or entirely without prerequisites, and that it occurs outside the formal education system. According to Schugurensky (2000) all organised education programmes outside the formal school system that involve teachers and curriculum fall in the category of nonformal learning.

Having reviewed the abovementioned definitions of nonformal learning, one might argue its relevance to student teachers' learning during their school based-practice. While there might be some contradictions on the level of definitions, the examination of specific types and activities of organised informal learning has revealed its relevance. Van Noy et al. (2016) identifies the following specific types of organized informal learning: (1) non-credit learning, (2) work-based learning, (3) volunteerism and service learning, (4) communities of practice, and (5) mentoring and coaching (some of these specific types that are relevant for understanding student teachers' learning during practice are detailed below).

In the context of initial teacher education, elaborating on work-based learning is of uttermost importance, since the learning the happens during the practicum component of initial teacher education programmes can be best described with this form of learning. According to Bragg, Hamm, and Trinkle (1995), in case of work-based learning, the workplace is used as a site for learning, but the learning is organised and supervised by schools (Van Noy et al., 2016). Work-based learning:

- is informal and holistic (Brodie & Irving, 2007),
- is situated and self-directed (Raelin, 2008),
- is haphazard, inductive and action-oriented (Onstenk & Blokhuis, 2007),
- requires reflection (Ryan, Toohey, & Hughes, 1996),
- is influenced by the norms, structures, values and practices that are embedded in the work setting (Onstenk & Blokhuis, 2007),
- is project or problem focused (Alfeld, Charner, Johnson & Watts, 2013),
- occurs about communities of practice (Sheehan, Wilkinson & Bowie, 2012).

Generally, work-based organised informal learning and school-based formal learning are divorced from each other, and this can be considered as a reflection of the gap between theory and practice (Van Noy et al., 2016). The importance of work-based learning lies in the opportunity it offers for the interplay between explicit and tacit knowledge (Raelin, 1997).

Different forms of work-based learning can be distinguished (Table 4.). The learning of student teachers' during their school-based practice is closest to the learning during an internship. Van Noy et al. (2016) explains that an intern starts learning as soon as the experience begins and focuses on roles, informal rules, professionalism and workplace culture. According to Hergert (2009), students doing an internship are satisfied with this experience, even if the reported learning is not significant. However, other types of work-based learning might also be relevant in the context of initial teacher education: e.g., the difference between the internship and the cooperative education has an important connotation to the student teachers' role development (in an internship student teachers' student role is emphasised, while in cooperative education student teachers are considered as employees).

Mentoring, as another vital form of organised informal learning in the context of initial teacher education, refers to the mutual learning of an experienced person (the mentor) and a less experienced person (the mentee) (Pollard, 2005; Carnell, MacDonald, & Askew, 2006). The primary purpose of mentoring is that the mentor gives advice to and shares professional knowledge with the mentee, but this relationship is not one-directional due to their collaboration, their shared goals (Van Noy et al., 2016) that contribute to both the mentors' and mentees' professional learning (Hargreaves & Fullan, 2000; Heirdsfield, 2008).

At last, but not at least, the concept of communities of practice as a form of organised informal learning shall be mentioned as well. The concept, developed by Lave and Wenger (1991) refers to the "set of relationships that exist around a body of knowledge, also referred to in the literature as professional learning communities" (Van Noy et al., 2016, p. 39).

4. Table. Work-based learning experiences (based on Van Noy et al. (2016, p. 26))

Work-based learning experience	Description	Academic credit	Option to be paid	Career exploration	Skill development
Apprenticeship	„A formalised paid worker training in which a novice employee acquires knowledge through a hierarchical relationship with a mater." (Van Noy et al., 2016, p. 29)	✓	✓		✓
Clinical	„Clinical experience is common in medical fields and involves unpaid worksite experience." (Van Noy et al., 2016, p. 30)	✓			✓
Internship	„Often conflated with cooperative education, an internship is often defined as a term-length placement with an organisation, accompanied by both faculty and company supervisors, and a course in which they receive academic credit." (Van Noy et al., 2016, p. 31)	✓	✓	✓	✓
Cooperative education	„Broadly defined as anything with some form of experiential or work-based learning, co-ops are composed of school learning (i.e., receiving course credit) with work experience related to the student's career goals where the student is considered an employee." (Van Noy et al., 2016, p. 30)	✓	✓	✓	✓
School-based enterprise	"A school-based enterprise (SBE) is an entrepreneurial operation in a school setting that provides goods/services to meet the needs of the market." (DECA, n.d.)			✓	✓
Job shadowing	"Job shadowing is where an individual from one area of the organisation has the opportunity to work alongside and gain experience of the role of another individual and gain an insight into that particular work area. It can also be used to provide an individual within a department the opportunity to work alongside more experienced colleagues so that they can learn and develop within their current role." (Manchester Metropolitan University, n.d)			✓	
Career academies	"small, career-oriented 'schools within schools' that integrate academics, career exploration, occupational preparation, and sometimes work experience" (Van Noy et al., 2016, p. 31)			✓	

Everyday informal learning

Similar to formal and organised informal or nonformal learning, everyday informal learning also has numerous interpretations and definitions. Merriam et al. (2006) argue that informal learning is unstructured, spontaneous and that it occurs in everyday settings. Many others describe it as a spontaneous activity that emerges from the context of work, that happens through everyday activities and interactions with others (Van Noy et al., 2016). Although there are numerous approaches to everyday informal learning, present study differentiates the following specific types of everyday informal learning: (1) self-directed learning, (2) incidental learning and (3) tacit learning (Schugurensky, 2000).

Self-directed learning has its roots in the domain of adult learning (Knowles, 1975), and it refers to:

> 'learning projects' undertaken by individuals (alone or as part of a group) without the assistance of an 'educator' (teacher, instructor, facilitator), but it can include the presence of a 'resource person' who does not regard herself or himself as an educator. It is both intentional and conscious. It is intentional because the individual has the purpose of learning something even before the learning process begins, and it is conscious, in the sense that the individual is aware that she or he has learned something. (Schugurensky, 2000, p. 3)

According to Schugurensky (2000), incidental learning is a "learning experiences that occur when the learner did not have any previous intention of learning something out of that experience, but after the experience, she or he becomes aware that some learning has taken place. Thus, it is unintentional but conscious" (p. 4).

Finally, tacit learning or socialisation can be described as the "internalisation of values, attitudes, behaviours, skills, etc. that occur during everyday life. Not only we have no a priori intention of acquiring them, but we are not aware that we learned something" (Schugurensky, 2000, p. 4).

Chapter summary - Teacher education programmes

Schön's (1983) criticism of the technical rationalism that is dominant in education was a catalyst for researchers to approach professional knowledge from a new perspective. The

technical rationalist assumptions underlying many TE programmes imply that they do not prepare candidates to learn from experience. Munby et al. (2001) go to an extent to state that calling the practicum a practice teaching is even arrogant because it implies that all student teachers need to do in order to become teachers is to practice what teacher educators have preached. Although knowledge in action can arise from practicum experiences, it is common that student teachers do not master learning from experiences (the experience alone is not enough, and Schön's statement that knowledge-in-action cannot be transformed into propositions, the authority of experience (mentor teachers are above student teachers) cannot be transmitted). Therefore, student teachers should be enabled to learn from the authority of their own experience (versus the „recipe" approach).

Although in the continuum of a teacher's career, the phase of initial teacher education can be considered as a rather short period, however, an important one, since it „lays the groundwork and sets the direction" (ET2020, 2015, p. V) for the teacher's career. With the reforms in higher education and the changes in the socio-cultural environment, teacher education programmes are facing new challenges and policy makers, and programme developers shall take into consideration several aspects, such as:

- whether the structure of the programme shall follow a parallel or consecutive model,
- the different paradigms of teacher professionalism, the way they envision teachers,
- the content in preparation for the profession (e.g., pedagogy, psychology, methodology, etc.), as well as
- the role of practicum and the new partnership models, including the appearance of new stakeholders.

Although practicum, in one form or another, is part of initial teacher education programmes, and although to different levels of elaboration, but it described in these formal programme documents, most of student teachers' learning during their practicum does not occur on the formal level, but more on the levels of organized informal learning and everyday informal learning. Student teachers' learning during the practicum, not exclusively though, can be described as organised informal learning in the form of work-based learning: it occurs at a workplace (school), but it is an organised and supervised activity. Besides organized informal learning, everyday informal learning gains attention if one thinks about teachers' tacit knowledge and tacit learning (or socialization), which, in other words, is the „internalization

of values, attitudes, behaviours, skills, etc. that occur during everyday life" (Schugurensky, 2000, p. 4). This is highly unlikely to happen within the walls of a university offering teacher education, but more likely to take place during the practicum.

These underpin that practicum within initial teacher education programmes are of an uttermost importance, and even though its features (e.g., length) are defined in many cases on a national level, and even though the aim, content, activities, assessment of practicum might be (precisely) defined on programme levels, student teachers' learning, due to its informal and tacit nature, is hard to grasp in its entirety.

1.3 Student teachers as researchers

Chapter preview

Getting back to the initial statement in the chapter of Introduction, an enormous amount of studies argues that the quality and effectiveness of an education system cannot exceed the quality of the teacher labour force; therefore the relevant educational stakeholders, including practitioners, researchers and policymakers, should focus on improving the quality of the profession (Eötvös Loránd University EDiTE Team, 2014; Pesti et al., 2018). Although such an improvement is desirably implemented in collaboration and mutual recognition of actors, in reality, there is a gap between educational research and educational practice (Snoek, 2011).

In order to close the gap between educational research and teaching practice, based on the existing evidence summarised in this chapter I argue that the systematic introduction of the concept of teachers as researchers, and a research-based approach to initial teacher education programme design are of uttermost importance. Firstly, I provide a summary of research and inquiry from an epistemological point of view with the aim to emphasise the importance of different research paradigms and interpretations, and how these could shape student teachers attitude towards research. This is followed by a more elaborated review of the literature regarding the gap between educational research and teaching practice, and the different roles of initial teacher education in closing this gap. These subchapters create the basis for further discussing the concept of teachers as researchers and the relationship between teaching and research.

1.3.1 Research from an epistemological point of view

The noun research has its origins in the Old French word researcher, which means "to seek out, search closely", and that is derived from the Latin word circare, meaning "to go about, wander, traverse", "to wander hither and thither" (Online Etymology Dictionary, n.d.). The meaning of research in its original sense is much more permissive than what one thinks of when hearing it these days. The word research is often associated with rigorous scientific methods, therefore the terms inquiry and to inquire are also used in literature, in most cases interchangeably. The verb inquire is derived from the Latin verb inquirere, meaning "to seek after, search for, examine, scrutinise".

Throughout the history, the definitions of research and inquiry have been shaped by the dominant paradigms, or "[w]hat we think about the world" (Lincoln & Guba, 1985, p. 15), or worldviews (Guba, 1990). This underlying epistemology defines how the person conducting research or inquiry approaches the world. Table 5. summarises the different worldviews and paradigms with the aim to provide a comprehensive overview of essential connotations of what we mean by the word research and inquiry viewed with the lenses of worldviews and paradigms.

5. Table. Overview of research paradigms and worldviews (Guba & Lincoln, 1994; Creswell, 2013)

Paradigm/worldview	Characteristics
Positivism (Guba & Lincoln, 1994) Important names: A. Comte (1798-1857) D. Durkheim (1858-1917)	"the epistemological doctrine that physical and social reality is independent of those who observe it, and that observations of this reality, if unbiased, constitute scientific knowledge" (Gall, Borg, & Gall, 2007, p. 16)
Postpositivist (Creswell, 2013; Guba & Lincoln, 1994) Important names: K. Popper (1902-1994) W. Quine (1908-2000)	"an epistemology that assumes an objective reality, but that this objective reality can only be known imperfectly" (Gall et al., 2007, p. 16) Laws/theories that govern the world need to be tested/refined so that we can understand the world. The knowledge is based on observations and measurements of the objective reality Ideas are reduced into small, discrete set (variables, research questions) that research can test

Paradigm/worldview	Characteristics
Constructivist (Creswell, 2013; Guba & Lincoln, 1994) Important names: P. L. Berger (1929-2017) T. Luckmann (1927-2016) L. Vygotsky (1896-1934) A. Schutz (1899-1959) D. Bloor (1942-)	„there is no objective reality, but rather reality is a social construct based on individual interpretations" (Lincoln & Guba, 1985) Individuals seek understanding of the world where they live and work in, and they develop subjective meanings of their experiences Researchers recognise that their backgrounds shape their interpretation, and they position themselves in the research to acknowledge how their interpretation flows from their personal, cultural, and historical experiences
Transformative (Creswell, 2013) Important names: K. Marx (1818-1883) T. Adorno (1903-1969) P. Freire (1921-1997)	Research needs to be intertwined with politics and a political change agenda; research contains an action agenda for reform Focusing on social issues, empowerment, inequality, oppression, domination, suppression, alienation Collaboration with the participants to minimise marginalisation (design, data collection, analysis etc.) United voice of reform and change
Critical theory (Guba & Lincoln, 1994) Important names: H. Marcuse (1898-1979) J. Habermas (1929-)	"privileged cultural groups maintain domination of other groups through various cultural agencies that exert power" (Gall et al., 2007, p. 510).
Pragmatism (Creswell, 2013) Important names: W. James (1842-1910) J. Dewey (1859-1952) C. S. Peirce (1839-1914)	It arises out of actions, situations, consequences (not from antecedent conditions) The problem is in the focus point, and researchers use all approaches to understand the problem Pragmatists agree that research occurs in social, historical, political and other contexts, so this worldview has a lens that is reflective of social justice and political aims

1.3.2 Gap between educational research and teaching practice

Given the ongoing debate regarding the gap between educational stakeholders, usually three particular groups of concerned are mentioned: practitioners or teachers, researchers and policymakers (Commission of the European Communities, 2007). Although the worlds of these three groups of stakeholders have a big influence on each other, the gap between them is a troublesome issue and has been in the focus of international discourse and educational research for years. The traditional model of educational research, which is expert-led, peer-reviewed,

and where dissemination is a top-down process, does not decrease the gap between practitioners, policy-makers and researchers. A new model, where practitioners are at the heart of knowledge creation processes is highly needed, and in such model, other relevant stakeholders should find a way to approach practitioners (Hargreaves, 1999; Pesti et al., 2018).

Educational research not contributing to practice is a common belief among practitioners (Snoek, 2011). Moreover, it is an accepted view that educational research lacks to provide useful input for practitioners and policy-makers (OECD, 2003; Hargreaves, 1999).

Another reason why the abovementioned gap may exist is that educational stakeholders very often come from different disciplinary fields or have different background (thus their engagement and responsibilities in various processes may differ as well) – e.g., teacher educators teaching educational science or didactics in the phase of initial teacher education, supervisors of teaching practice, policymakers, researchers. Interprofessionality, as explained by D'Amour and Oandasan (2005) contributes to the development of a cohesive practice involving professionals from different disciplines; therefore it has relevance to education as well. Policies in the European Union have turned towards encouraging cooperation between academics and practitioners in the form of building bridges between the worlds of academia and practice (Eötvös Loránd University EDiTE Team, 2014; Pesti et al., 2018).

1.3.3 Roles of initial teacher education in closing the gap between educational research and teaching practice

Although a shift towards a more open and dynamic teacher education can be observed, the traditional traits are still dominant. Some of these characteristics are the following (Buchberger et al., 2000):

- the emphasis of initial, mostly strictly institutionalised and academically oriented teacher education (while neglecting the significance of continuous professional development of teachers);
- the strict separation of initial teacher education, in-service teacher education and further higher award work of teachers;
- the lack of systematic connection between teacher education, its stakeholders and education innovation and research.

Hargreaves (2000) argues that the knowledge-base for teachers is affected by their initial education. It is not an easy task to define the general role of initial teacher education, and this might be the reason why there is no universal agreement on the way (student) teachers should be recruited and prepared for teaching (Cochran-Smith & Zeichner, 2005). The ET2020 Working Group on Schools Policy (2015) summarises a very crucial idea about initial teacher education as it follows:

> Leading and supporting pupil learning requires every teacher to embark on a professional, social and personal journey that involves career-long professional development within collaborative learning environments. Initial Teacher Education lays the groundwork and sets the direction for this journey. National, regional and local governments and stakeholders have a shared responsibility to facilitate and sustain this in close collaboration. (p. V)

Laying the groundwork and setting the direction are extremely important key phrases, therefore initial teacher education, though it constitutes rather a short period in relation to the whole career of a teacher, still has a crucial role in the continuous professional development, including to raise awareness of the importance of educational research, prepare them to incorporate the results of such research, as well as to shape an attitude for being an active agent of change by participating in research initiatives.

1.3.3.1 Raising awareness of the importance of educational research

The strengthening of educational research is a relevant topic, and numerous publications and research programmes have been initiated in order to facilitate this process (Snoek, 2011). Although there is no general solution to the problem, basic sciences and educational researchers failing to generate relevant knowledge for practitioners might be considered as the root of the problem (Hargreaves, 2000); therefore the demand for cooperation (Kálmán & Rapos, 2007) in producing knowledge is higher than ever (Pesti et al., 2018).

According to Keyes (1999), numerous studies emphasise that teachers do not admit doing any research, since they believe lesson observations, keeping journals cannot be considered as “real” research. The general view of teachers not thinking of classroom inquiry as research can be rooted in the notions of research they got familiar during their initial teacher education (Pesti et al., 2018). Arguably, it is difficult for teachers to accept classroom and

school-based research (producing usable knowledge for their everyday practice) as scientific research if during their initial teacher education big-scale, nation-wide research projects and programmes were presented to them (Pesti et al., 2018).

One of the long-term solutions (or at least mitigation) for the abovementioned problem might be to bring educational research closer to student teachers by preparing them to incorporate the results of educational research in their everyday practice (to become consumers of research) and through shaping their attitude for being active agents of change by participating in research initiatives (to become producers of research) (Snoek, 2011; Pesti et al., 2018).

1.3.3.2 Preparing student teachers to incorporate the results of educational research

Due to many factors (e.g., increased number of publication opportunities and platforms, continuous pressure for publishing research results) a vast amount of research results is easily accessible. For example, an innovative initiative by the University of London (United Kingdom), the Evidence for Policy and Practice Information and Coordinating Centre – EPPI Centre (OECD, 2007), intends to develop and promote systematic reviews that are participatory and user friendly and that deal with essential questions in practice and research (as well as in policy). Despite the immense number of publications from the field of educational research, the power of contexts limits the generalizability of the findings, since such contexts in educational research cannot be controlled. Each context is different, and in educational research, these differences lead to problems in replication because all the characteristics of the context must be considered when interpreting the findings or implementing innovations, reforms based on scientific results (Berliner, 2002; Pesti et al., 2018). There is a need for strengthening the capacity of policymakers and practitioners to use education research and evidence. Since educational evidence is deeply embedded in the context, there is no straightforward solution, but the development of a culture of reflection and evaluation might contribute to the improvement of education and training systems (Commission of the European Communities, 2007; Pesti et al., 2018).

However, major knowledge and culture changes are desired in the practice of researchers (by accepting that self-defined research projects detached from the world of schools are not likely to influence practice and policy) and teachers (by reaching out for evidence outside their schools) (OECD, 2003). When examining research results and trying to use them

in everyday practice, student teachers should be aware of the power of contexts; therefore they need to learn how to adapt research results to specific problems, to specific contexts, or with other words, to become consumers of research (Pesti et al., 2018).

1.3.3.3 Shaping an attitude for being an active agent of change by participating in research initiatives

Bakkenes et al. (2010) emphasise the importance of teachers as they are "the agents in shaping education for students and in bringing about change and innovation in educational practices" (p. 1). In order to prepare students for facing the new challenges of the information age and the knowledge society, the importance of knowledge creation in schools becomes significant, including the need for teachers to redefine their (teaching) skills (Hargreaves, 1999). These are just a few expectations that teachers should meet, and although initial teacher education might not equip student teachers with all the knowledge and skills they may need in their everyday practice (in one hand due to the relatively short period of initial teacher education and especially of school-based practices, while on the other hand due to the continuously changing living and learning environment), initial teacher education disputable has an essential role in laying the groundwork and setting the direction for student teachers (ET2020 Working Group on Schools Policy, 2015; Pesti et al., 2018) – including developing specific competences to participate in or conduct educational research.

Educational science can be considered as the hardest-to-do science (Berliner, 2002), therefore student teachers should be aware of its characteristics, not only as consumers but as producers of new knowledge (e.g., the power of context is a characteristic that suggests the knowledge needed for interpreting a phenomenon is often owned by (local) practitioners (Pesti et al., 2018)).

The education community has recognised the influential role of teachers as researchers since the possibility of understanding the complexity in a school community is highly increased if practitioners have the skills and opportunities to initiate research activities within their environment (Gray & Campbell-Evans, 2002; Pesti et al., 2018). Loughran (2002) described teacher-researchers as "those practitioners who attempt to better understand their practice, and its impact on their students, by researching the relationship between teaching and learning in their world of work" (p. 1).

1.3.4 Teachers conducting research

Teacher research, or the concept of teachers as researchers (both expressions are used in literature) refer to a particular strand of research or inquiry when teachers intentionally and systematically take actions in order to improve their teaching practice, foster their learning, become more reflective, affect changes in the world of schools, and at last but not least, improve the lives of their pupils (Cochran-Smith & Lytle, 1999; Stenhouse, 1975). Although teachers conducting research is nothing new under the sun (e.g., teachers as reflective practitioners (Dewey, 1929), action research (Lewin, 1946), teacher research as a framework for professional development and school reform (Reason & Bradbury, 2001)), teacher research "does not seem to gain a foothold in most schools. This might be because teacher education programmes produce teachers who do not identify with the role of the teacher as a researcher and are not convinced of its effects" (Willegems, 2017).

This raises the issue of what is teacher education's core responsibility. The answer is not to prepare students to research the first place but to prepare them to deal with the complexity of teaching and learning, and the complexity of school contexts. This means that teachers are involved in decision making every day, some of these are short term, some of these are long-term decisions. This implies that teachers should form and reform their interpretative frameworks that guide their practice, to do intelligent problem solving, to make evidence-based decisions, and academic and/or experiential knowledge might be insufficient for such activities, therefore, introducing systemic inquiry into teacher education programmes has been advocated and backed-up by research (Munthe & Rogne, 2015). Zeichner and his colleagues call for new forms of democratic professionalism in teacher education, where colleges, universities, schools and communities come together to prepare professional teachers who provide the same high-quality education for all.

Some teacher research focuses on classroom/school contexts, but still explores ways of connecting this to learning and teaching theories, teacher research attempts to connect practice and theory (decrease the gap). However, it is easy to overlook the distinction between teacher research and teaching reflectively (commitment to a disciplined method for gathering and analysing data, share results publicly), as well as teacher research and action research (AR is a reflective process of progressive problem solving). Teacher research flourishes when it is lodged within a supportive network and becomes a collaborative activity (Henderson, 2012).

The distinction between teacher research and "outsider" research is less about methodology and more about the practice-orientation of the research being conducted. Teacher research is participatory, inclusive of differences and democratic (Henderson, Meier, Perry, & Stremmel, 2012).

Through teacher research, teachers have an opportunity to shape their professional development, to validate/affirm and improve their practice. It also empowers them (Ritchie, n.d.), since they do not only wait for „others" to tell them what to do, but they act on their own.

1.3.5 The relationship of teaching and research in the higher education context

Taking a step away from initial teacher education, and turning towards higher education in general, the relationship of research and teaching in this context is a fiercely debated issue. While some claim university research is conducted at the expenses of teaching quality, others argue for the opposite, saying that research enriches the quality of teaching (Healey, 2005; Pesti et al., 2018). Moreover, another strand of existing research evidence on the relationship of research and teaching further strengthens its divisional effect: while Hattie and Marsh (1996) did not find a significant relationship between teaching effectiveness and research productivity, Jenkins, Breen, Lindsay, and Brew (2003) argues that there is evidence showing that students prefer learning in a research-based environment (Pesti et al., 2018).

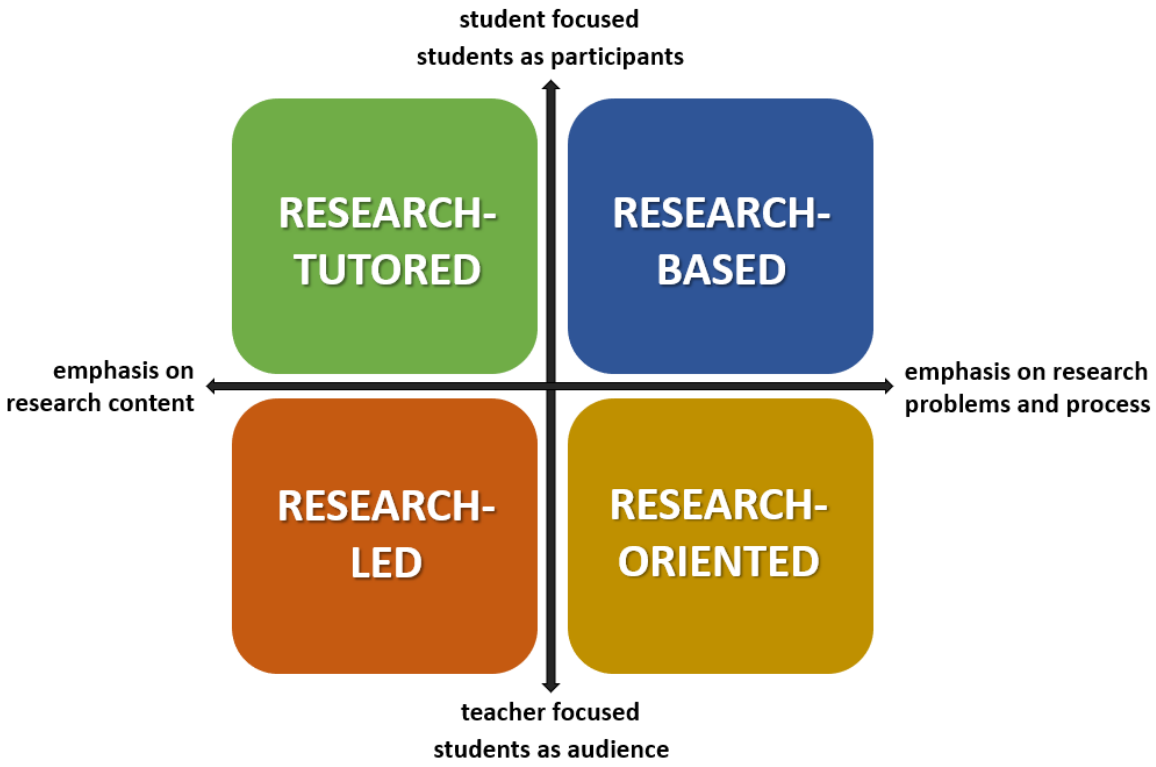
Numerous studies have proved that the field of discipline, or as Healey (2005) refers to it, the disciplinary space, significantly defines the nature of the relationship between research and teaching (e.g., Moses, 1990; Donald, 2002). In the context of teacher education, this raises the question of dominance: is the disciplinary space more influenced by the chosen subjects of student teachers, or by educational science represented by educational, pedagogical and/or psychological departments?

Healey (2005) argues that „departments and individuals vary in the way that they construct the linkage between research and teaching" (p. 3). He described the three dimensions of the research-teaching nexus for curricula design as the following:

1. Emphasising the research content or the research processes and problems
2. Treating students as the audience or participants
3. Teaching is teacher-focused or student-focused

Drawing on Griffiths (2004) work, and based on the abovementioned three dimensions, Healey's model of curriculum design and the research-teaching nexus identifies four quadrants (Figure 3.):

- „Research-led: where students learn about research findings, the curriculum content is dominated by staff research interests, and information transmission is the main teaching mode;" (p. 3)
- Research-tutored: where students' writing and discussing papers or essays is emphasised.
- "Research-oriented: where students learn about research processes, the curriculum emphasises as much the processes by which knowledge is produced as learning knowledge that has been achieved, and staff try to engender a research ethos through their teaching;
- Research-based: where students learn as researchers, the curriculum is largely designed around inquiry-based activities, and the division of roles between teacher and student is minimised." (p. 3)



3. Figure. The research-teaching nexus (based on Healey & Jenkins, 2009)

Healey (2005) claims that most of the university teaching occurs in the bottom left quadrant. However, it is also true that most programmes reach over more than one quadrant. Moreover, there might be differences between disciplines. Teacher education programmes are meeting venues of numerous disciplines, and although research-based teacher education has gained importance recently, there is not much known about student teachers' perception about their curricula.

Chapter summary - Student teachers as researchers

This chapter intends to explore the important role of initial teacher education in contributing to the decrease in the gap between educational research and educational practice. In order to do so, initial teacher education is supposed to take on a role in raising awareness of the importance of educational research among student teachers as well as in preparing them for incorporating the results of such research in their practice. Furthermore, initial teacher education should also lay the foundations of an attitude of student teachers that enables them to participate in educational research initiatives and be active agents of change.

Many factors of the gap between educational research and practice, between practitioners, researchers and policymakers can be identified, but some of the most relevant are the following:

1. the expert-led, peer-reviewed traditional model of educational research hinders practitioners to be at the epicentre of knowledge-producing processes;
2. from the practitioners' point of view educational research fails to provide useful results for their everyday practice;
3. the stakeholders are not ready to collaborate in an interdisciplinary and interprofessional manner. Although numerous initiatives are focusing on the encouragement of cooperation between academics and practitioners, the issue is still an urgent problem.

Initial teacher education, with its many roles and characteristics, is still an emphasised and well-researched phase of continuous professional development, even though it is rather a short period compared to the whole career of a teacher. However, initial teacher education has a crucial role in the continuous professional development, including in raising awareness of the

importance of educational research among student teachers, in preparing them to incorporate the results of such research, as well as in shaping an attitude by laying the groundwork and setting the direction for their journey (ET2020 Working Group on Schools Policy, 2015).

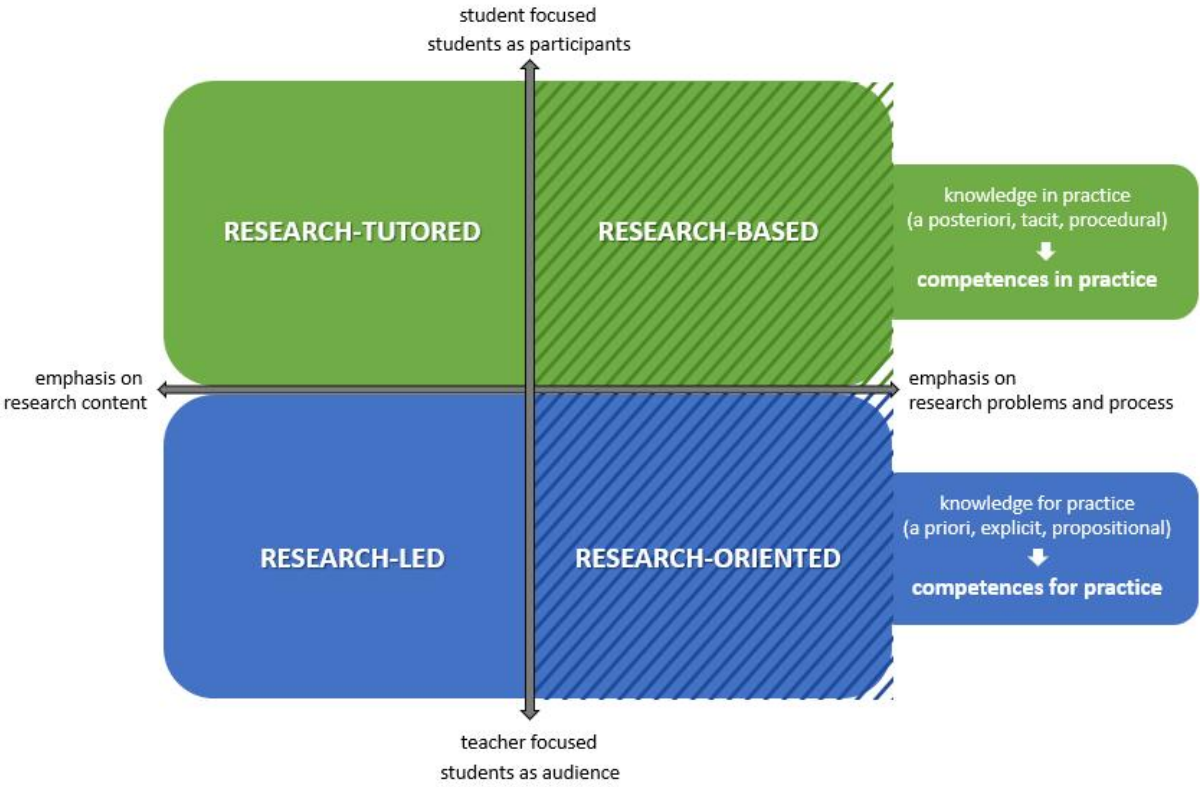
Chapter summary - Literature review

The fundamental themes used in this research, (1) teacher competences including (professional) knowledge, skills and attitudes, (2) teacher education programmes and student teachers' learning during the practicum and (3) the concept of teachers as researchers were detailed in the previous subchapters. The adaptation of the research-teaching nexus model to the context of initial teacher education by synthesising the literature review serves as a framework for the research, with the following premises:

- initial teacher education has a role to prepare student teachers, to empower them to conduct practice-oriented research, therefore research shall be integrated into ITE programmes;
- if research is integrated into ITE programmes, we may use the concept of research-based teacher education;
- although it is common in international discourse to refer to teacher education as being research-based, resulting in many teacher education programmes being tagged as research-based, a need for differentiation between "tags" has emerged that is more informative regarding the manner research is integrated into teaching.

Figure 4. represents the adaptation of the research-teaching nexus model to the context of initial teacher education, and this framework is used throughout this Thesis. This model differentiates four types of research integration into teaching (Healey & Jenkins, 2009), and these are the following:

- research-led,
- research-oriented,
- research-tutored, and
- research-based.



4. Figure. Adaptation of the research-teaching nexus to the context of initial teacher education (based on Healey & Jenkins 2009)

If we take into consideration the role of students (whether they are passive audience or active participants in the learning opportunities (courses, practicum), research-led and research-oriented quadrants contribute to student teachers' competences for practice (a priori/explicit/propositional type of knowledge acquisition), while research-tutored and research-based quadrants contribute to student teachers' competences in practice (a posteriori/tacit/procedural type of knowledge acquisition).

2. The context of the research

Chapter preview

Having reviewed the literature, for better understanding the relevance of the research, it is necessary to overview the context, on international and national levels. Therefore, this chapter first introduces the international discourse of teacher professionalism as the basis for improvement of quality in teacher education, followed by the Hungarian and Austrian responses to the global trends. The second part of the chapter provides a comprehensive overview of recent reforms in initial teacher education systems.

2.1 The context of teacher professionalism

Chapter preview

This chapter gives a brief overview of teacher professionalism. First, by presenting the key points of the international discourse on teacher professionalism, and then, by dealing with teacher professionalism in the reflection of recent reforms in Hungary and Austria.

2.1.1 International discourse on teacher professionalism

Although social change has been present ever since the occurrence of first civilizations, its pace has also gone through a change: first, it was rather slow, one might say almost settled for centuries, but the first Industrial Revolution triggered many social processes, this increased its velocity, and this continuous acceleration of social change has not stopped since then. In the era of the fourth industrial revolution, when countless aspects of life are entirely different in comparison to a couple of centuries, or even a few decades ago, an important question arises: is education capable of addressing the new challenges that are brought to life by social change, such as diverse student bodies or new expectations from the labour market? Moreover, addressing social change is not enough, as it suggests that emerging issues are constant. One would argue that education systems should be able to continually recognise the newly emerging causes of social change on micro, macro and meso levels, and be able to react to these promptly. Taking one step further, besides responding to social change, education has an essential role in

giving ground to agents of social change: Durkheim argued more than a century ago that „education is only the image and reflection of society. It imitates and reproduces the latter… it does not create it" (Durkheim, 1897/1952: 372-373 in Pezone & Singer, 2003). „Education systems have to be lifelong learning systems" (UNESCO, 2017), and this implies that the relevant actors, including the agents of social change, shall also be lifelong learners.

There are numerous contemporary approaches on how to turn educational systems towards being more social-change sensitive, however, there is an overarching idea: the importance of teacher quality, as a determining factor of the educational system's quality and student learning (OECD, 2016; Darling-Hammond & Lieberman, 2013; Rhoton & Stiles, 2002). By professionalisation of teaching, the vision of the professional teacher has started to take shape. Some emphasised the importance of the professional knowledge base of teachers, while neglecting the professional ideologies accompanying the knowledge base (e.g., DuFour, 2004), but some others (e.g., Hargreaves & Goodson, 1996; Evans, 2008; Freidson, 2001) argued that the teaching profession is more than just a knowledge base, it shall be accompanied by the „willingness and skills needed in collaboration in networks and partnerships and, moreover, skills and willingness needed in life-long-learning" (Lavonen, Korhonen, & Juuti, 2015).

These are just a few examples that illustrate the importance of life-long (or as some authors prefer to refer to it career-long) learning of teachers with regards to increasing quality in education, but there are numerous other notions of teacher professionalism (OECD, 2016), such as mentoring (Borman & Dowling, 2008), induction (Feiman-Nemser, 2003), autonomy (Watkins, 2005), collaboration (Borman & Dowling, 2008; Darling-Hammond, 2006), leadership roles (Berry, Smylie, & Fuller, 2008). As the expectations towards teachers change, initial teacher education has a crucial role not only in providing student teachers with the professional knowledge base of teaching but in enabling them to face the newly emerging challenges.

The abovementioned have paved the path for teacher education to get in the spotlight of policymaking in the past decades, and the main focus of developments are related to the quality of education (Kopp & Kálmán, 2015). The related ongoing professional discourse urges the issue of the relationship between theory and practice within initial teacher education programmes, suggesting that practicum (school-based teaching practice) is a field of significant potential for improving quality in teacher education. Although practicum is an integral part of

initial teacher education programmes and has a general aim of contributing to student teachers' development, its role can be interpreted in different ways:

- „the role of practice is interpreted as academic knowledge-supporting activity that follows theoretical foundation;
- practice is interpreted as the fundamental venue of training, as in clinical work (Darling-Hammond, 2006);
- practice is interpreted as part of the school development/learning (Hestnes & Grankvist, 2006; Hudson, 2008)." (Pesti et al., 2017, p. 63)

The way practicum is interpreted by policymakers, and programme developers define numerous aspects, such as the length and intensity of practicum, the involved actors and their ways of collaboration, mentoring and other support systems for student teachers, activities and assessment of practice, but more importantly, the relationship between theory and practice. Although there is existing knowledge on the essential aspects of practice (e.g., coherence between university courses and practicum, comprehensive practicum with support systems to connect theory to practice, proactive collaboration with schools that serve as models of quality education (Darling-Hammond, 2006)), in different national and sometimes even in institutional contexts these aspects are supported by different tools (Kopp & Kálmán, 2015).

As a response on changes in teacher education, the traditional functions of practicum (providing an opportunity for gaining experience, developing skills, assessment) have been expanded, and they cover a broader spectrum than just focusing on classroom teaching. One of these new functions is preparation for research (Kopp & Kálmán, 2015). Numerous scholars argue that by creating more opportunities for teachers to conduct practitioner research, individually or in groups, strengthens the tie between the theoretical knowledge base and practice (OECD, 2016; Sexton, 2007; Lynch, Hennessy, & Gleason, 2013; Gonzalez, Moll, & Amanti, 2013). An international study also shows that "teachers may need more opportunities to apply their learning to classroom practice – specifically, opportunities to conduct research and experiment with how to make the theoretical knowledge gained in professional development applicable to their own teaching" (OECD, 2016, p. 120).

Along with these, the general trend of teacher education becoming research-based can also be observed in many countries, but the translation of this concept to the national concept has many forms. Dewey argued that local research, when a practitioner makes inquiry into his or her practice contributes to the change of their practices, the way people understand it, as

well as its conditions (Kemmis, 2009; Cunningham, 2017). The teacher can be considered as a connoisseur of research and a researcher in one person (Cunningham, 2017), and their role is critical,

> as teachers are "the ones in direct contact with pupils and hence the ones through whom the results of scientific findings finally reach students. They are the channels through which the consequences of educational theory come into the lives of those at school" (LW 5, p. 24). Without their assessments of what these consequences are, there can be no improvement in educational science. (Cunningham, 2017, p. 497)

The importance of merging research into initial teacher education programmes lies in the rapidly changing and continuously expanding list of expectations towards teachers – initial teacher education is responsible for „laying a foundation for continuous learning and change in the workplace" (p. 1). In order to support perspective pupils' effective learning in the 21st century, student teachers should familiarise themselves with research in education (Munthe & Rogne, 2015). Although there is an increasing number of studies dealing with teacher research in the context of initial teacher education, one must not forget that the overarching aim of teacher education is not to prepare researchers, „but to acquire an inquiring attitude to teaching" (Toom et al., 2010). Even though there is existing literature on the concept of „teachers as researchers" and its importance regarding student teachers' learning, there is little known about whether the use of inquiry across teacher education programmes is systematic (Munthe & Rogne, 2015). Moreover, the issue if student teachers shall become only consumers, or even producers of research is a debated issue. Some argue that research-based teacher education is more than just preparing student teachers to be consumers of research (Smith, 2015)

2.1.2 Teacher professionalism in Hungary in the reflection of recent reforms

Regarding their salaries, career progression opportunities and life circumstances, in-service teachers in Hungary are below the European Union and OECD country average indicators. The reasons behind teacher burn-out, attrition rates and the preference of other professions lie in the lack of career opportunities and reliable, well-financed career models. The questionable prestige of the teaching profession, the increased workload and parental expectations, the external inspections, and the endeavour to ensure the adequate quality for

teacher education were all motives for introducing a new career model. (Szondi & Cziráné, 2012).

Based on teachers' qualification and years of experience, the career model differentiates the following five stages: Intern, Teacher 1, Teacher 2, Master Teacher and Teacher Researcher. The first stage of the career model serves as the induction of career-starting teachers. It is mandatory, and it lasts for two years with the possibility of an extension for two more years. The qualification criteria are defined in the document of Training and Outcome Requirements in the form of teacher competences. At the end of this stage, interns are expected to take a qualification exam. In case of a successful exam, the interns move on to the second stage. Otherwise, they may retake the exam one more time (Szabó et al., 2013).

The second stage of the model, Teacher 1, is also a mandatory phase. The teachers stay in this stage for at least six years, utmost nine years, and they shall take part in a qualification process in order to move on to the third stage (Szabó et al., 2013).

The third stage of the model, Teacher 2, is a mandatory phase as well, meaning that teachers must fulfil specific requirements: passing the qualification exam and process of the previous stages, having eight years of teaching experience, and demonstrating a defined development of competences. Fulfilling these requirements is mandatory for teachers to remain in the profession; however, they are not required to move on to the fourth or fifth stages (Szabó et al., 2013).

However, if one decides to move on to the fourth stage and wants to become a Master Teacher, there are some more specific requirements to do so. First of all, teachers are required to have at least 14 years of professional experience, to pass the professional pedagogical examination, and to acquire a second qualification (Szabó et al., 2013).

In order to become a Teacher Researcher, similarly to the previous phase, teachers shall have 14 years of professional experience and a second qualification. By introducing this phase, the concept of teachers as researchers has become more emphasised in the Hungarian context. Although this suggests that teachers shall conduct research and publish on a regular basis, there is little known whether the system of initial teacher education has responded to this by offering programmes that prepare student teachers for such a researcher role (Szabó et al., 2013).

Another important implication of the new career model is that the qualification exam of novice teachers in the Intern stage, as well as the qualification process of Teacher 1, Teacher, Master Teacher and Teacher-researcher stages, are bound to teacher competences. According

to the Guideline of the Teacher Career System[13], teacher competences are a group of knowledge, attitude and skill components that capacitate a teacher to realise his/her work, pedagogical tasks in a result-oriented manner. Eight competence fields are defined and in use, with numerous knowledge, skill and attitude components. The competence fields are the following (Szabó et al., 2013):

1. Professional tasks, professional disciplinary, professional subject-related, and curriculum-related knowledge
2. Organising pedagogical processes and activities, and self-reflection related to their implementation
3. Supporting learning
4. Developing student's personality, enforcing the principles of individual treatment, adequate methodological preparation to educate all children together, including children with special needs, with integration, learning and behavioural difficulties
5. Supporting and developing the formation of student groups and communities, creating opportunities, openness for socio-cultural diversity, activities fostering integration, activities related to the role of a headmaster
6. Continuous assessment and analysis of pedagogical processes and students' personality development
7. Communication and professional collaboration, problem-solving
8. Commitment and professional responsibility for the development of the profession

For different qualification purposes (e.g., qualification exam for interns, or qualification process for those going for another stage of the career model) different competence levels or standards shall be used, and these are tackled as indicators in the form of activity descriptions (e.g., the intern can choose and implement the proper methods, organizational forms in order to ensure student motivation, differentiation, student activity, as well as the development of student thinking, problem-solving and collaboration-related skills) (Szabó et al., 2013).

Simultaneously with the introduction of the new career model, in 2013 the Hungarian government raised teacher wages, however, the new career model itself seemed to be divisive:

13 https://www.oktatas.hu/pub_bin/dload/unios_projektek/kiadvanyok/kiegeszitett_utmutato_pedagogusok_minositesi_rendszerehez.pdf

although its components are based on international research results and global educational trends (e.g., becoming competence-based), the achievement of initial aims related to the increase of the teaching profession's prestige seems to be awaited. Moreover, despite the changes of several structural elements of teacher education, the prestige, the status of the profession is still relatively low (Symeonidis, 2018).

2.1.3 Teacher professionalism in Austria in the reflection of recent reforms

Similarly to other countries, education is a strongly politics-related issue in Austria as well: the educational views, philosophies and ideologies of political parties are of great influence (Schratz, 2018). Austria is, on the one hand, the most centralised federal state (e.g., the curriculum development belongs to the government), but on the other hand is the most federalised centralised state (e.g., the states are responsible for implementing the governmental laws) (Schratz, 2018).

Teacher education in Austria can be characterised with many aspects that are common in countries influenced by the German higher educational traditions, such as the division of theory and practice, or the preference of theory over practice (Kraler & Schratz, 2014). However, there are numerous initiatives to bridge the gap between theory and practice. One of the major reforms in the history of teacher education of our times is the one introducing the new teacher education system (PedagogInnenbildung Neu). Chapter 2.2. provides more details about this new system. However, it is important to mention here that this reform has some implications for the relationship if theory and practice: in this new system teacher education programmes are offered in close collaboration by universities and teacher education colleges. This collaboration ensures the following (Simić, Bachmann, & Stančić, 2013):

- sustainability of teacher education,
- increasement in the prestige of the teaching profession,
- support for mobility and internationalisation of teacher education.

Moreover, the new reform (Dienstrechts-Novelle 2013 – Pädagogischer Dienst) intends to raise the prestige of the teaching profession by raising salaries and introducing new roles (OECD, 2017). Having a look at the age structure, Austrian education faces the challenge of an ageing population of in-service teachers, and this also urges the endeavours to raise the prestige of the profession to be more attractive (OECD, 2017).

Chapter summary

The way one thinks about teacher professionalism is always in close relation to the current social-economical environment. As Durkheim explained that „education is only the image and reflection of society" (Durkheim, 1897/1952: 372-373 in Pezone & Singer, 2003), to some extent this is a valid statement for teacher professionalism as well. Teacher professionalism of yesterday may not be adequate to face the social challenges of tomorrow. However, one shall build on them. Literature suggests that teacher quality is of crucial importance when it comes to an educational system's quality and student learning. Teacher quality may also have different interpretations in different times and contexts. Therefore the role of initial teacher education in preparing quality teachers is also subject to change. The international discourse urges the strengthening of the relationship between theory and practice within initial teacher education programmes, however, when it comes to programme development and implementation, this boils down not only to different national but even institutional interpretations.

2.2 The systems of initial teacher education in Hungary and Austria

Chapter preview

Present chapter explores the systems of initial teacher education in Hungary and Austria, firstly by having a historical outlook, which is followed by the introduction of one-one initial teacher education programme before and after the recent reforms in both countries.

2.2.1 Historical outlook

Despite the possibility of grasping some international dimensions of changes in teacher education, the translations of these into the national contexts show diverse approaches even in the cases of countries which educational systems are rooted in the same educational traditions. After the Hungarian Revolution of 1848, the higher education of the Habsburg Empire, therefore the teacher education systems of Hungary and Austria were uniformly regulated. The reform of teacher education that is related to at that time Minister of Education and Religion,

Leo Thun Hohenstein, followed the German pattern: the university faculties of humanities became the venue of teacher education. After the Austro-Hungarian Compromise of 1867, the two countries regulated their educational issues independently. While in Austria teacher education remained closer to the German model by establishing pedagogical seminars, in Hungary teacher training institutions and attached practice schools gained ground (Patyi, 2016).

In Hungary, teacher education (and public education in general) faced major reforms in the decades following the I World War. Secondary school teacher education became integrated at all universities in the country; educational studies got under the supervision of teacher training institutes. Although there were endeavours to raise elementary school teacher education to the level of higher education by establishing elementary school teacher training academies, these endeavours remained unsuccessful at that time. The communist era after the II World War brought new changes to secondary school teacher education: the teacher training institutions ceased to exist. However, the changes of the political climate in the late 60's allowed some nation-specific corrections on the system. The withdrawal of the Soviet troops from East-Central Europe was followed by a shift towards market economies that are based on parliamentary political systems, and this shift also implied significant changes in education on all levels. The Hungarian education demonstrated a progressive attitude with the emergence of schools with an alternative curriculum (Garai & Vincze, 2013).

Although in Austria the social-democrat party encouraged the reform of teacher education since 1920, the first results came only after the turn of the century: in 1951 the length of teacher education was increased by one year at the teacher training academies, while in 1966 these academies faced a reform. One of the significant changes was that practice schools complemented the academies. In this era, one of the biggest critiques of teacher education in Austria was the missing link between theory and practice. As an answer to this issue, in 1977 the practice became an integral part of subject methodological and general pedagogical contents, and it aimed to provide an opportunity for student teachers to get accustomed with the school life. Despite this attempt to strengthen the relationship between theory and practice, we can talk about a unicycled teacher education that integrates theory and practice only from mid-'80s (Garai & Vincze, 2013). The recent reforms of teacher education show that the strengthening of the relationship between theory and practice is an issue that is dealt with on a national level.

2.2.2 Initial teacher education in Hungary

Chapter preview

In the past decade the Hungarian ITE system has faced significant changes: firstly, with the Bologna process the divided system was introduced, but a couple of years later it was restored to the undivided model (Ministry of Human Capacities of Hungary, 2011; Pesti et al., 2017). Hereby follows a comprehensive overview of the most important characteristics of teacher education programmes in Hungary, firstly in the Bologna system, and then in the current, long-cycled, undivided system.

2.2.2.1 Initial teacher education programmes before the reform[14]

"With the introduction of the Bologna process, teacher education was raised to the master level. In this structure, students did not continue their studies in the traditional, two-majored manner, but they had to choose one major and one minor discipline, the pedagogical preparation dominantly occurred during their master studies, and the duration of the school-based practice was raised to one semester, occurring at the end of the programme)." (Pesti et al., 2017, p. 59; Pesti et al., 2018)

The MA programme of ITE has the following building blocks:

- subject-specific parts consisting (100 ECTS each),
- pedagogical-psychological module covering pedagogical and psychological themes, subject didactics, and subject-specific practices (40 ECTS),
- individual internship (30 ECTS).

The overall aim of school-based practicums and internships in the MA programme is to provide profession-related knowledge, familiarisation with the world of work, as well as to ensure that student teachers acquire the required skills. There are two types of practicums: the subject teaching practice and the individual internship.

The subject teaching practice (3 ECTS in each of the two chosen subjects) takes place at one of the university's placement schools and is supervised by school-based teacher educators

[14] https://net.jogtar.hu/jogszabaly?docid=a1200283.kor

called leading teachers. It aims to provide opportunities for student teachers to familiarise themselves with the profession and to gain experience in teaching through complex and individual tasks, supervised by the leading teachers. It is suggested that student teachers shall conduct the subject teaching practice regarding one of their chosen subjects in lower secondary classes (ISCED level 2) while regarding the other chosen subjects in upper secondary classes (ISCED level 3).

The individual internship (30 ECTS) also takes place at one of the university's placement schools. Its overall aim is to ensure that student teachers acquire the necessary practical knowledge and skills, become familiar with the world of work. The individual internship is planned for the last semester of the studies, and student teachers shall fulfil every other study requirement before starting their internship.

2.2.2.2 Initial teacher education programmes in the current system

The undivided, long-cycle programmes of ITE lasts for 10-12 semesters with 300-360 ECTS credits – depending on the ISCED level they prepare student teachers for. It is mandatory for student teachers to choose two disciplinary fields, but since the ISCED level can differ, the following combinations are possible (Ministry of Human Capacities of Hungary, 2013):

- In case of ITE that prepares student teachers for ISCED level 2 (second stage of primary education or lower secondary education) regarding both disciplinary fields, ITE lasts for ten semesters (300 ECTS), supplemented by two semesters of practicum.
- In case of ITE that prepares student teachers for ISCED level 2 (second stage of primary education or lower secondary education) regarding one of the disciplinary fields and ISCED level 3 (secondary education) regarding the other disciplinary field, ITE lasts for 11 semesters (330 ECTS), supplemented by two semesters of practicum.
- In case of ITE that prepares student teachers for ISCED level 3 (secondary education) regarding both disciplinary fields, ITE lasts for 12 semesters (360 ECTS), supplemented by two semesters of practicum.

Although some elements of ITE programmes are variable and the providing universities might tailor them based on the local needs and opportunities, some other elements are regulated

by law. These regulations include the number of credits for teacher's education-related studies (often referred to as the pedagogical-psychological module) being 100 ECTS, Table 6. summarises the distribution of these.

6. Table. Distribution of credits in the pedagogical-psychological module (Ministry of Human Capacities of Hungary, 2013)

	Credits	Requirements
Pedagogical-psychological theoretical and practical knowledge	At least 28	At least 2 credits must be related to the individual school practice
Methodological knowledge	At least 16 (at least 8 for each disciplinary field)	At least 2 credits must be related to the individual school practice
Pedagogical, psychological and teaching practices parallel with the training	At least 4 (at least 2 for each disciplinary field)	Teaching practice must be at least 15 hours
Community practice parallel with the training	At most 2	-
Individual teaching practice	48	40 credits for the school-based practice At most 8 credits for assignments that are directly related to the individual teaching practice
Portfolio	2	-

School practices include (1) the acquisition of general pedagogical and discipline-related, teachers' role-related practical knowledge, (2) the acquisition and practice of skills and attitudes, (3) the introduction to the world of work (school life, school management, communication with parents, individual tutoring of students, collaboration), (4) the acquisition of basic skills in assessment of teaching, learning and other educational processes and of professional development (Ministry of Human Capacities of Hungary, 2013).

As Table 6. indicates, there are three types of practice that student teachers are required to complete during their initial teacher education: (1) group and individual teaching practice parallel with the training, (2) community practice parallel with the training, (3) individual teaching practice.

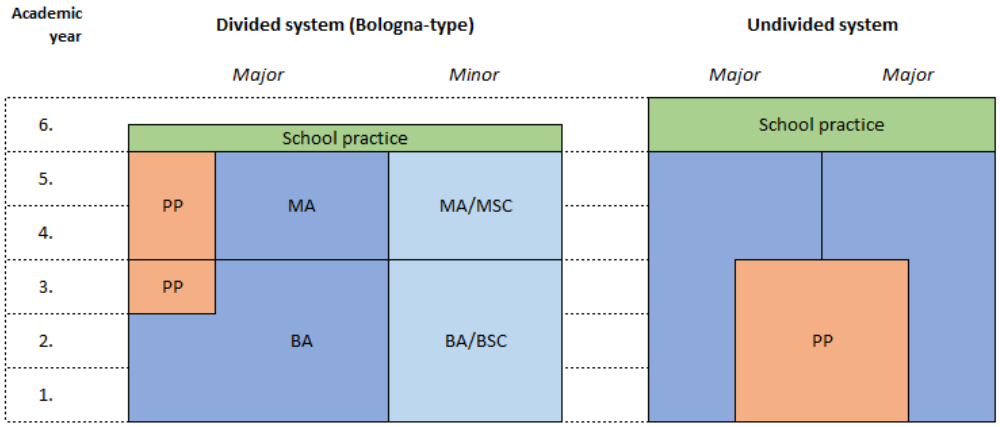
The *group and individual teaching practice* (in Hungarian: csoportos pedagógiai és önálló tanítási gyakorlat) occur parallel with the training, it takes place in a school, and it is supervised by a senior teacher (on Hungarian: vezető tanár). The role of this type of practice is two-folded: in one hand it offers opportunities for student teachers to observe and analyse lessons (including discipline subject-related, non-discipline subject-related, lesson with the form master), while on the other hand student teachers have to conduct individual teaching activities (at least 15 hours) (8 Ministry of Human Capacities of Hungary, 2013).

The *community practice* (on Hungarian: közösségi pedagógiai gyakorlat) also occurs parallel with the training, and its role is to facilitate student teachers in gaining experience on the fields of organization, management, programme development and community building, extracurricular activities concerning a particular age group of students (e.g., camps, study groups, etc.) (Ministry of Human Capacities of Hungary, 2013).

The *individual teaching practice* (on Hungarian: összefüggő egyéni iskolai gyakorlat) is based on the theoretical knowledge and practical experiences acquired during the training and it takes place in a school with the continuous supervision of a practice leader mentor (from the school where the practice is realized) and a teacher educator (from the university where the student teacher is enrolled). The role of this type of practice is to ensure that student teachers are familiar with the complex educational system of schools and teachers, with the social and relevant legal environment, as well as with the education system. It includes activities related to the subject-teaching, primary educational activities not related to subject-teaching, familiarisation with the school, as an organisation and its supporting systems (Ministry of Human Capacities of Hungary, 2013).

Chapter summary - Initial teacher education in Hungary

Figure 5. represents the structure of initial teacher education in the divided (Bologna-type) and the undivided systems. Some of the most visible structural changes are the increase of practicum from 1 semester to 2 semesters, the reallocation from the pedagogical-psychological preparation towards the beginning of the studies, and the discontinuation of the major-minor subject combination in favour of two major subjects.



5. Figure The structure of initial teacher education in the divided (Bologna-type) and the undivided systems (Legend: PP – Pedagogical-Psychological preparation) (based on Hunyadi, 2010; Pesti et al., 2016)

2.2.3 Initial teacher education in Austria

Chapter preview

Hereby follows a comprehensive overview of the most essential characteristics of teacher education programmes in Austria, firstly in the long-cycled system, and then in the current, Bologna-conform system.

2.2.3.1 Initial teacher education programme before the reform[15]

The Secondary School Teacher Accreditation Programme (an undivided, long-cycle programme) lasts for nine semesters with 270 ECTS and are divided into two parts (4 + 5 semesters), each part followed by a diploma examination. In case the student teacher passes both of the diploma exams and prepares a diploma thesis, he/she is awarded the Magistra/Magister academic degree, with an additional title referring to the scientific field of the diploma thesis (e.g., Magistra/Magister of Philosophy). The graduates of this programme are provided "the necessary competences in order to work in their future vocational fields flexibly and professionally" (University of Innsbruck, 2014, p. 6), and they are "qualified to

[15] Based on the Curriculum for the Secondary School Teacher Accreditation Programme at the Faculty of Humanities at the University of Innsbruck (University of Innsbruck Bulletin, 2011)

work as teachers at secondary schools, in particular, but also in other fields of education and training" (University of Innsbruck, 2014, p. 6).

It is mandatory for student teachers to choose two disciplinary fields; therefore ITE programmes have the following building blocks:

- subject-specific parts consisting of subject-didactic and subject-related education in the selected two teaching subjects (100 ECTS each),
- a general part consisting of the pedagogical training (20 ECTS) and school teaching practice (20 ECTS) (this block is the subject of analysis in present research), and
- the diploma thesis (30 ECTS).

The following school teaching practices are included in the programme:

1. Introductory Practical Training (2 ECTS): the focus is on student teachers' role development (from the role of a pupil to the role of a teacher) by observations, teaching, and project work. A school teacher supervises this practicum.
2. Basic Practical Training (5 ECTS): the emphasis is on students' independence and self-organisation in pedagogical terms, and these are developed through observations, independent teaching, and project work. The practical training is accompanied by a university-related part that has a preparatory purpose. This practicum is supervised by a university teacher and a school teacher.
3. Special Practical Training practice 1 (5 ECTS): the emphasis is on students' independence and self-organisation in subject-didactic and subject-specific areas (focusing on one of the chosen subjects), and these are developed through observations, independent teaching, participation in various school events, and writing a project paper. The practical training is accompanied by a university-related part that has a preparatory purpose.
4. Special Practical Training practice 2 (5 ECTS): this practice is the equivalent of Special Practical training, but it focuses on the other chosen subject. It is also accompanied by a university-related part that has a preparatory purpose.
5. Final Practical Training (3 ECTS): this practicum is a „consolidation and evaluation of action competence and management of different performance requirements within school-related practical situations in pedagogical, subject-didactic and subject-related terms; theory-based reflection and documentation of

own interventions and their impacts within the system" (University of Innsbruck, 2014, p. 11). This practicum is supervised by a university teacher and a school teacher.

In addition to these, student teachers are required to complete a 30 hours long practice outside of a school setting.

2.2.3.2 Initial teacher education programmes in the current system[16] [17] [18]

Following the reforms of teacher education, since 2015 ITE is divided into bachelor and master studies. The bachelor studies last for four years (not for three as most bachelor programmes in most countries), which is followed by the master studies with a length of one to four years, depending on the level of preparation (Pesti et al., 2018). From the perspective of present study, it is important to highlight that in the case of secondary school teachers (ISCED level 3), the master studies last for two years (120 ECTS).

Moreover, another interesting feature in the preparation of upper secondary school teachers (ISCED level 3) both on bachelor and master levels, at least in comparison with Hungary, that student teachers can choose between two different paths. The first option is that they decide to do their teacher education in two disciplinary subjects, while the second option is that they choose one disciplinary subject and a so-called special focus, a specialisation (e.g., inclusive education, media pedagogy).

The Bachelor's Programme Secondary School Teacher Training covers 240 ECTS and lasts for eight semesters. The programme can be divided into the following building blocks:

- subject-specific parts consisting of subject-didactic and subject-related education in the selected two teaching subjects, or the selected one teaching subject and one specialisation (100 ECTS each),

[16] This chapter forms an integral part of a previous publication (Pesti et al., 2018)

[17] Based on the Curriculum for the Bachelor's Programme Secondary School Teacher Training (General Education) joint study programme of the Kirchliche Pädagogischen Hochschule – Edith Stein, the Pädagogischen Hochschule Tirol, the Pädagogische Hochschule Vorarlberg, the University of Innsbruck and the Mozarteum Salzburg (location Innsbruck) (University of Innsbruck Bulletin, 2017)

[18] Based on the Curriculum für das MasterstudiumLehramt Sekundarstufe (Allgemeinbildung) gemeinsames Studium der Kirchlichen Pädagogischen Hochschule – Edith Stein, der Pädagogischen Hochschule Tirol, der Pädagogischen Hochschule Vorarlberg, der Universität Innsbruck und der Universität Mozarteum Salzburg (Standort Innsbruck) (University of Innsbruck Bulletin, 2016)

- education studies (40 ECTS in total, 23,5 for the pedagogical-practical studies).

Having completed the required coursework and practical studies, student teachers have to submit a bachelor's Thesis for each teaching subject and each specialisation. Following this, the Bachelor of Education (BEd) academic degree can be awarded to student teachers.

The Master's Programme Secondary School Teacher Training covers 120 ECTS and lasts for four semesters. The programme can be divided into the following building blocks:

- subject-specific parts consisting of subject-didactic and subject-related education in the selected two teaching subjects, or the selected one teaching subject and one specialisation (25 ECTS each),
- education studies (20 ECTS in total, 5 for the pedagogical-practical studies),
- interdisciplinary competences and individual focus (20 ECTS),
- the preparation and defence of the Master thesis (30 ECTS).

Having successfully fulfilled all the requirements, the student teachers are awarded the Master of Education (MEd) academic degree.

Both the Bachelor and Master programmes have a so-called Educational Studies component with the same emphasis concerning the other programme components (based on the assigned ECTS, in both cases it is about 16,7%), but with a different focus. The Education Studies in the Bachelor follows a spiral curriculum design, and is described as the following:

> … individual subject areas are revisited on an increased complexity level and in a differentiated form in the course of the study programme. With this cohesive-continuous extension and reflection of basics, experience and professional knowledge in the process of the training, an integrative foundation for future educational thinking and acting is laid out against the background of a professionalisation process stretching over the entire professional life. (University of Innsbruck, 2017, p. 17)

The Education Studies in the Master programme aims to provide research-oriented access to the professional knowledge base (based on the latest findings), but it also highlights the importance of interdisciplinarity in everyday working life (University of Innsbruck, 2017).

The Educational Studies is built on the so-called Pedagogical-practical studies (PPS), that aims to "serve the practical-orientated linking" (University of Innsbruck, 2017, p. 12)

between the various modules of the Bachelor and Master study programmes. In the case of the Bachelor programme the PPS includes the following:

- Introduction to teaching: becoming a professional (7,5 ECTS – 5,5 for the PPS)
- Learning, teaching and research in the context of diversity (7,5 ECTS – 2 for the PPS)
- Diagnosing, counselling, educating, teaching and assessing (7,5 ECTS – 3,5 for the PPS)
- Professional teacher development (10 ECTS – 10 for the PPS)
- Integration and development of professional skills and elective courses (2,5 ECTS – 2 for the PPS)
- Current topics in education and school research (5 ECTS – 0,5 for the PPS)

In the case of the Master programme the PPS includes the following:

- Profession-related research and professionalisation (12,5 ECTS – 5 for PPS)
- Educational laboratory (7,5 ECTS – 0 for PPS)

The study programme includes three types of practice within the Bachelor programme:

- Dealing with the Challenges as a Teacher at School – Teaching Practice I (3,5 ECTS): the emphasis is on the daily life of schools, changing perspectives (from pupil to teaching), and it is accomplished through lesson and teaching observations, reflection, empirical approaches to the research field school.
- Educating, Assessing and Teaching Practice II (3,5 ECTS): student teachers devote time on planning and implementation of teaching units, get familiar with different learning and teaching forms, school interventions, innovative forms of cooperative and team-oriented teaching.
- Acting as a Teacher, Teaching Practice IIIa+IIIb (7 ECTS): this type of practice consists of two parts, meaning that student teachers conduct their practice in two different types of schools (NMS/PTS and AHS/BMHS). Student teachers actively participate in various school activities, conduct observations, teach independently, get familiar with school developments, create transfer knowledge in the field.

The study programme includes one type of practice within the Master programme:

- Research in public education and practice (7,5 ECTS):

Chapter summary - Initial teacher education systems in Austria

Although the reform of public education, as well as the introduction of the new teacher education in Austria, brought numerous changes and new challenges, some of the traditional features are still present, such as the system being too bureaucratic or hierarchically organised (Schratz, 2018):

One of the most debated features of the Austrian public education is a unique characteristic: pupils and their parents need to decide after primary school at the age of 10, whether to follow an academic path or a vocational/technical path. This debate has been going on since the first decades of the XX. century, when there were some attempts to introduce a comprehensive educational system. Besides the critical equity issues due to the early selection, this feature of the Austrian public education has left its marks on the system of teacher education as well. By introducing the new teacher education, the gap between student teachers learning to be and teachers teaching in mew middle schools (in German Neue Mittelschule) or academic secondary schools (in German Allgemeinbildende Höhere Schule) was mitigated, the increase of teachers' prestige is still of urgent importance, mostly because the average age of teachers in service (Schratz, 2018).

Chapter summary - The systems of initial teacher education in Hungary and Austria

Although being neighbours and sharing some common historical roots, the trends of changes in the system of teacher education in Hungary and Austria show major differences. The system of teacher education faced significant changes due to the recent reforms in both countries. Although the two countries share common historical background, and education was a common issue during the Austro-Hungarian Monarch, these days the two countries stepped on different paths when it comes to teacher education. In Hungary, two major reforms took place in the course of a few years. First, by the introduction of the Bologna system, teacher education was raised to the Master level, but in 2013 it was restored to the undivided system, as it was before the Bologna-type system. In Austria the opposite process can be observed: until recently teacher education was implemented in an undivided, long-cycled system, but since 2015 it follows a Bologna-conform system.

Chapter summary - Context of the research

The way one thinks about teacher professionalism is always in close relation to the current social-economic environment. As Durkheim explained that „education is only the image and reflection of society" (Durkheim, 1897/1952: 372-373 in Pezone & Singer, 2003), to some extent this is a valid statement for teacher professionalism as well. Teacher professionalism of yesterday may not be adequate to face the social challenges of tomorrow. Literature suggests that teacher quality is of crucial importance when it comes to an educational system's quality and student learning. Teacher quality may also have different interpretations in different times and contexts; therefore the role of initial teacher education in preparing quality teachers is also subject to change. The international discourse urges the strengthening of the relationship between theory and practice within initial teacher education programmes, however, when it comes to programme development and implementation, this boils down not only to different national but even institutional interpretations.

Although being neighbours and sharing some common historical roots, the trends of changes in the system of teacher education in Hungary and Austria show major differences. The system of teacher education faced significant changes due to the recent reforms in both countries. Although the two countries share common historical background, and education was a common issue during the Austro-Hungarian Monarch, these days the two countries stepped on different paths when it comes to teacher education. In Hungary, two major reforms took place in the course of a few years. First, by the introduction of the Bologna system, teacher education was raised to the Master level, but in 2013 it was restored to the undivided system, as it was before the Bologna-type system. In Austria the opposite process can be observed: until recently teacher education was implemented in an undivided, long-cycled system, but since 2015 it follows a Bologna-conform system.

Further analysis of these programmes, especially those components that describe the educational preparation of future teachers may reveal how teacher professionalism, more specifically the role of practice in developing it and preparing student teachers to conduct practice-oriented research is interpreted by programme developers.

3. Methodology

Chapter preview

This chapter intends to provide an elaborated description of methodology-related issues, considerations and decisions I took in the course of my PhD research in the reflection of the research aim and research questions. I also write about the philosophical assumptions that guided my PhD research and formulated the base for further methodological decisions, including the research approach and design, as well as the various methods of data collection.

3.1 Aim of the research and research questions

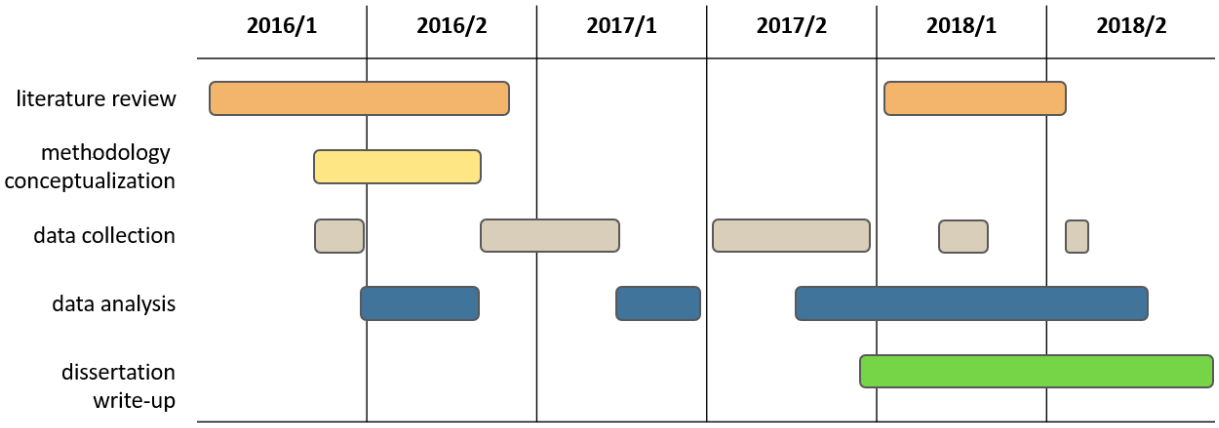
Having the literature reviewed and the context explored and in align with the aims of the EDiTE international research project and The Learning Teacher institutional project[19], the overall aim of the research is to reveal the role of practicum of initial teacher education programmes in developing student teachers' competences and preparing them for conducting practice-oriented research in the cases of two universities from Hungary and Austria by answering the following research questions:

1. What are the characteristics of the pedagogical-psychological courses and the practicum in ITE programmes?
2. How does the practicum in ITE programmes contribute to the development of competences required for conducting practice-oriented research in the participating countries?
3. What are the experiences of student teachers regarding practice-oriented research?

Although there is a growing body of research focusing on the concepts of research-based teacher education and teachers as researchers, the perspective of student teachers regarding these issues is not that emphasised. Therefore, the use of only quantitative or qualitative approach did not seem enough (e.g., not enough evidence in the literature to develop a measurement tool), and this has led me to a decision to choose the mixed-method approach in order to explore and provide a better understanding of the problem (Creswell, 2014).

[19] Both the EDiTE project and The Learning Teacher project are briefly introduced in the Forewords

Figure 6. positions the research phases on a timeline. For a more detailed description of the phases, please see the following subchapters.



6. Figure. Research timeline

3.1 Philosophical assumptions

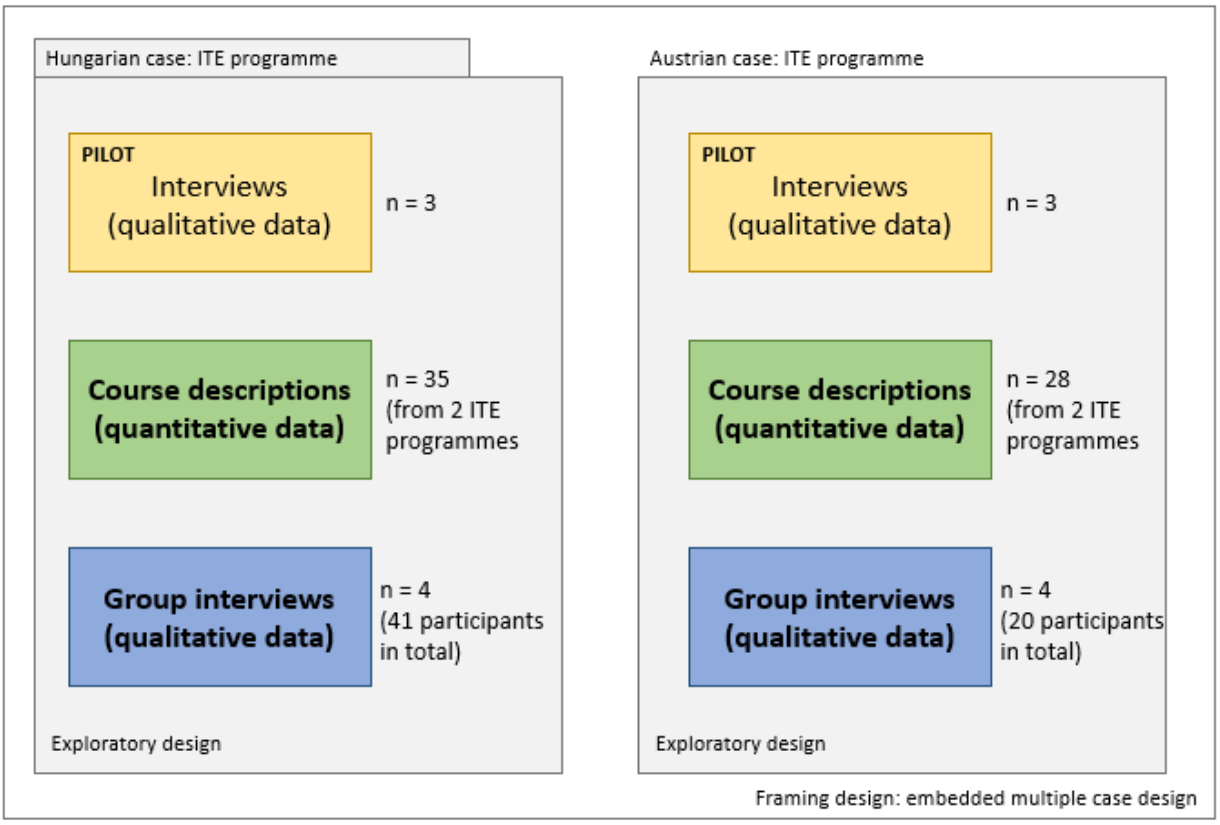
According to Creswell (2014), philosophical worldviews (or paradigms) influence the decision on the research approach, and these basic sets of beliefs that guide (but not defines) research actions (Guba, 1990, p. 17) (I have previously elaborated on different worldviews and paradigms in 1.3.1.). As many researchers (e.g., Rossman & Wilson, 1985; Patton, 1990; Morgan, 2007; Tashakkori & Teddlie, 2010) have argued, the pragmatic worldview brings the research problem in focus instead of the research methods, and it accepts the use of pluralistic approaches to ensure the understanding of the problem. It allows the use of both quantitative and qualitative data (as well as results and knowledge derived from them), so the pragmatic worldview is common among researchers choosing the mixed-method approach. However, „there is no deterministic link that forces the use of a particular paradigm with a particular set of methods" (Morgan, 2014, p. 1).

Since the review of the literature has revealed that there is little known about the concepts of research-based teacher education and teachers as researchers from the student teachers' perspective, I embarked on a pragmatic research journey to reveal what works. Although one may easily fall in a trap of interpreting pragmatism as an approach focusing merely on problem-solving, „[s]tating that pragmatism as a philosophy [that] goes beyond problem-solving is a key point" (Morgan, 2014, p. 2). As a researcher conducting this study in a pragmatist mindset, the questions of *how to do research* and *why to do research in a given*

way (Morgan, 2014) seemed to be crucial to elaborate on in order to make further steps. The latter question, why to do research in a given way is in align with the research aim, which is to reveal the role of school-based teaching practicum of initial teacher education programmes in developing student teachers' competences in the cases of two universities from Hungary and Austria. The first question, how to do research is in align with the chosen methods and the commitment I make with these to pursue the overall goal of the research.

3.2 Research approach and research design

As the research is positioned within a European context, the framing design of the research is of a case study nature, where one-one initial teacher education programmes offered by universities of two countries (Hungary and Austria) constitutes the two cases, as illustrated in Figure 7.



7. Figure. Research design

I have conducted an instrumental case study since I formulated the research questions first, and then chose the two cases (Stake, 1995). The two cases (two initial teacher education programmes) are both from countries included in the EDiTE consortium. According to Yin's differentiation of case study types (1984) including exploratory, descriptive and explanatory case studies, due to the previously described state of art that there is little known about the researched issue from student teachers' point of view (especially in the national context of the two cases), present research can be considered mostly as an exploratory case study. However, the research extends beyond the pure exploration of the phenomena, and it leans towards the category of a descriptive case study. Moreover, it has an embedded multiple case design (Yin, 1984) because the research involves two cases, and in each case, there are multiple sources of data (course descriptions, interviews and group interviews with student teachers).

3.3 Research methods

Due to the mixed method nature of the study, various methods were used for data collection, analysis and interpretation, including:

- document analysis (quantitative data),
- interviews (qualitative data) as part of a pilot study, and
- group interviews (qualitative data).

The following subchapters provide more elaborated information on the specific methods

3.3.1 Method of document analysis

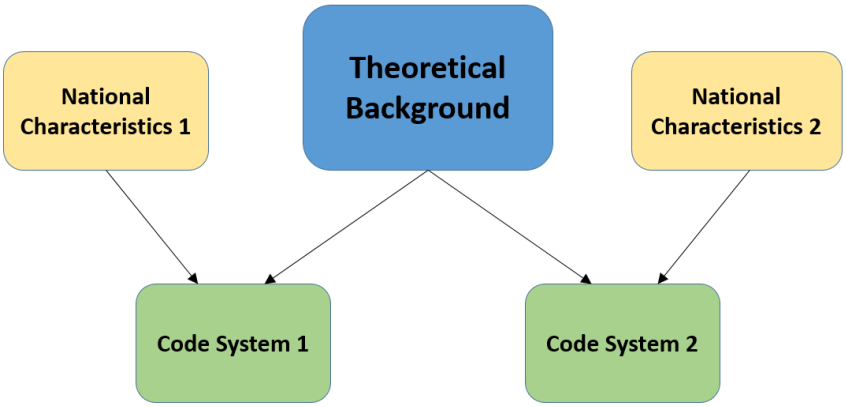
3.3.1.1 Methodological and ethical considerations of conducting document analysis

One of the crucial methodological considerations regarding data collection with the method of document analysis concerned the data collection tool itself. In this inquiry, the data collection tool is a code system that was developed within the framework of a past research project examining teacher education programmes in Hungary (Pesti et al., 2017; Pesti et al., 2018). I was a core member of this research team, and I participated in all aspects of the research, from the code system development to coding, analysing, as well as interpreting and

reporting on the results. During the phase of code system development, the general principles of content classification were seriously taken into consideration (such as the use of operational variables and definitions, mutually exclusive categories, the possibility of coding non-instances).

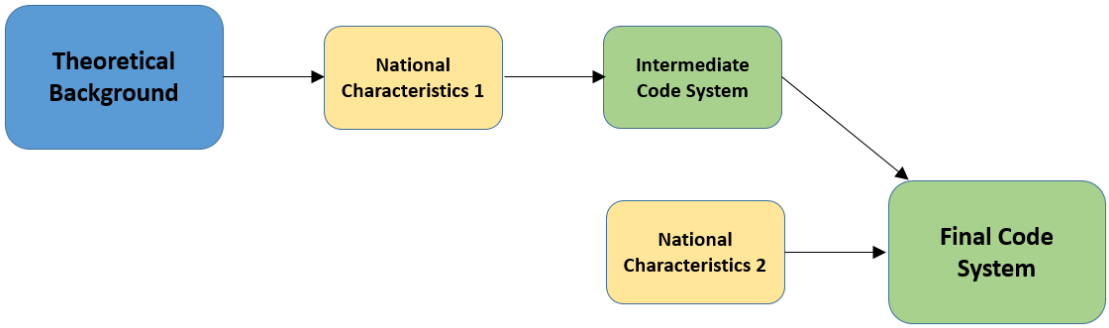
As this past research focused exclusively on Hungarian teacher education programmes (e.g., it was based on the competences as defined by the Ministry of Human Capacities of Hungary (2013)), I was urged to think of adaptation possibilities in order to ensure the code system's suitability to other national contexts. Three possible strategies for adapting the existing code system to different national contexts were identified:

1. having a common theoretical background, which is amended by the national characteristics of the countries, therefore this strategy results in two slightly different code systems (Figure 8.);



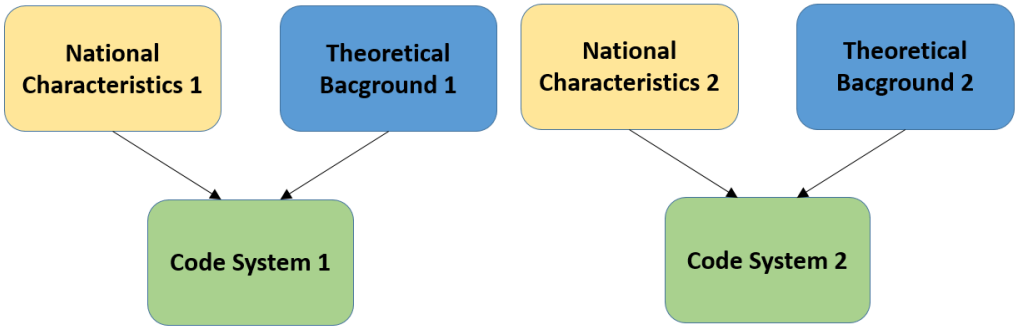
8. Figure. Strategy 1. for adapting the code system to different national contexts

2. developing a code system based on the theoretical background and one national context, which is then further developed according to another national context's characteristics, and so on, therefore this strategy results in one code system that takes into consideration more national contexts' characteristics (Figure 9.);



9. Figure. Strategy 2. for adapting the code system to different national contexts

3. having independent code systems based on different theoretical backgrounds in each national context, therefore this strategy results in two significantly different code systems (Figure 10.).



10. Figure. Strategy 3. for adapting the code system to different national contexts

In the abovementioned past research (Pesti et al., 2017) 138 course descriptions provided by 8 Hungarian institutions were coded, and the code system proved to be suitable for data collection in Hungary, and it also became apparent, that the code system is comprehensive, it allows the coding of all the relevant information (the coders did not experience loss of information during coding). For the sake of comparability, I wanted to have an adaptation strategy that will allow me to put different countries' data next to each other; therefore the second strategy (Figure 9.) seemed to be the most suitable.

I made efforts to establish reliability through the following actions:

- During the code system development, the structure of each module (Table 7.) was drafted by one person, based on initial analysis of course descriptions. Before finalising the code system, the structure was thoroughly discussed by the team members of the past research, and in case of disagreements regarding some elements of the structure, the members managed to resolve differences, and changes in the structure were implemented where needed.
- Although coding was an individual activity, in case of uncertainty, the team followed the principle mentioned above: by discussions we managed to resolve differences.
- One person verified all the coded data.

3.3.1.2 Data collection tool

The original code system was based on eight modules: general information, goals, competences, content, assessment, validation, learning management, and proposed literature, and each of these modules included numerous code categories. New modules amended the original code system used in the previous study (Pesti et al., 2017) in the Hungarian context for two reasons:

- to customise the original code system for this study, and
- to customise the original code system to use it in different national contexts.

Table 7. gives an overview of the code system used in this study, while the comprehensive list of the code system modules and categories (including the changes and amends) is included in Appendix 1.

7. Table. Summary of code system modules and code categories

Code System Modules	Description
General information Number of categories: 7	Aim: • To record general course information (e.g., type, field, ECTS, number of lessons, etc.)
Competences Number of categories: 34	Aim: • To record the competences that the courses aim to develop (broken down into knowledge, skills and attitude components) The codes for competences are based on those described in the European Commissions (2013) publication titled *Supporting teacher competence development for better learning outcomes*.
Content Number of categories: 4	Aim: • To record the content of the courses The content is divided into two sub-modules, where the first one includes 23 components adapted from other researches (OECD, 2016), OFI (Sági, 2015)), and the second one includes 13 components adapted from the list of topics for the final examination of pedagogical-psychological modules.
Course deliverables Number of categories: 16	Aim: • To record the deliverables and products students are expected to deliver (e.g., essay, reflective diary, case analysis, observation, etc.)
Proposed literature Number of categories: 10	Aim: • To record obligatory, recommended, and optional literature (indicating foreign language literature, and those published after the year 2000)
Teaching-research nexus Number of categories: 14	Aim: • To record different aspects of the integration of research into teaching based on the model of teaching-research nexus (Healey & Jenkins, 2009)
Research-related course activities Number of categories: 15	Aim: • To record research-related course activities (e.g., observations, interviews, dealing with literature, etc.)

3.3.1.3 Sample

The sample consists of the pedagogical-psychological course descriptions included in the initial teacher education programmes. The institutions' initial teacher education programmes prepare teachers for teaching general subjects on ISCED levels 2 and 3 (therefore the programmes of art teacher education, vocational teacher education and teacher education for special needs education do not belong to the population).

The unit of analysis is the course description, and in total 63 course descriptions were coded in the spreadsheet. Despite the fact that the degree of elaboration of course descriptions varied in a great deal (some of them include only the fundamental information, while others are deeply elaborated), I decided not to exclude any of them, because the absence of some aspects in the descriptions also have a message (e.g., the relevant aspect is not considered important enough by the course developers to include it in the description) (Pesti et al., 2018). Table 8. summarises the documents being analysed.

In order to reveal the evolution aspect of teacher education programmes, due to the recent changes in initial teacher education systems both in Hungary and Austria, initial teacher education programmes are provided in two fashion: the „old" system in Hungary followed the Bologna structure (bachelor and master studies), while in Austria it used to be an undivided course of studies (Diplomstudium). After the reforms, the „new" system in Hungary is an undivided course of studies, while in Austria the Bologna structure was adapted (these changes in the structure of initial teacher education systems are more detailed in Chapter 2.2.). Therefore, Table 8. presents the type of initial teacher education programmes that contains the course descriptions which form the sample for this research:

8. Table. Type of initial teacher education programmes

	Hungary	**Austria**
Before the reform of teacher education („old" system)	ITE programme on the master level	Undivided ITE program
	18 courses	11 courses
After the reform of teacher education („new" system)	Undivided ITE program	ITE programme on the bachelor and master level
	17 courses	13 + 4 courses

3.3.1.4 Data analysis

The analysis of the coded course descriptions was performed with the use of a statistical software package (IBM SPSS Statistics 21). The strategy for analysis was two-folded, since (1) it was possible to look at the results regarding the whole sample, providing international results, but (2) the national results could also be easily extracted; therefore two separate country case studies were further developed. Due to the case study nature of present research, in the analysis I followed the second strategy, I examined the two countries individually.

3.3.2 Method of interviews

2.3.2.1 Methodological and ethical considerations of conducting interviews

In order to have a deeper understanding of the role of practice in initial teacher education programmes, besides looking at the context by conducting document analysis, giving voice to their targeted "consumers" – to student teachers – is of a vital essence. Since there is little empirical evidence about the special focus of my research, I decided to start exploring the topic by conducting interviews with the participants – therefore the purpose of interviews is mostly of an exploratory nature (Pesti et al., 2018). According to Fontana and Frey (1994),

> the spoken or written word always has a residue of ambiguity, no matter how carefully we word the questions and how carefully we report or code the answers. Yet, interviewing is one of the most common and powerful ways in which we try to understand our fellow humans. (p. 361)

In comparison with "the interview society" in the United States (Atkinson and Silverman, 1997), where being interviewed has become somewhat normal to people, in order to take advantage of all the opportunities that this powerful way of data collection has to offer, I as the interviewer had to take into consideration two important aspects:

- my role as the interviewer (who is at the same time a full-time research assistant employee at a university that some of the interviewees are enrolled to, and a former student teacher herself); as well as
- the student teachers' role as the interviewees.

Scheurich described the interviewer as "a person, historically and contextually located, carrying unavoidable conscious and unconscious motives, desires, feelings, and biases – hardly a neutral tool" (Fontana & Frey, 2005, p. 696). If we accept this view, the interviewer has to be aware of all these factors influencing the mutually created story, the interview itself, and by continuously reflecting on them, make all the effort to minimise their influence. Besides these factors, I also had to deal with my past: not a very long time ago, I used to be a student teacher myself, and sharing this information with the interviewees resulted in a more open attitude from their side, as they knew I had been going through the same things as they were at the time of the interviews. Myers and Newman (2014) indicate sharing background information about the interviewer is a way of encouraging interviewees to open up during field interviews. However, the aim of the research was not to collect data regarding the criticism on teacher education systems, and I tried to emphasise this by asking previously formulated questions indirectly.

The student teachers who are doing their practice are caught between the world of academia (the university offering teacher education programmes) and the world of work (the school where they do their teaching practice). The tensions between the two worlds influence student teachers' experiences, and these are amplified by the challenges of their transitioning from the role of a student to the role of a teacher. Therefore, student teachers tend to have a critical opinion about their experiences, and gaining their trust, especially when being informed that I am an employee of a university, is of great importance. Therefore, I participated in some pre-data-collection activities, such as lesson observation, informal discussions about their studies, delivering presentations about my research experience as a student, etc. Moreover, while ensuring their anonymity, student teachers were interested in the impact of their critical opinion regarding the teacher education programme they are enrolled to. To ensure that their opinion is not lost in the process of data analysis I will prepare reports based on the interviews (including the group interviews as well) for institutional purposes and make it available to the university's responsible person.

As a researcher, I made all possible efforts to ensure the following at all stages of the research (Creswell, 2014):

- to protect the participants (ensure their anonymity),
- to develop trust (e.g., engaging myself in pre-data-collection activities with the participants),

- to promote the research (e.g., I presented my research as well as the broader, EDiTE research context in a detailed manner),
- to guard against misconduct and impropriety (e.g., I studied the relevant code of ethics (Eötvös Loránd University's Code of Ethics[20], APA Ethical Principles[21], European Commission's H2020 Programme Guidance How to complete your ethics self-assessment[22]), the research was approved by the Ethical Commission of the Eötvös Loránd University, the participants were provided with an information sheet and asked to sign a consent form (Appendix 2.)),
- to cope with new, challenging problems.

I interviewed student teachers, and without exception, they were adults (not minors) voluntarily participating in the research, and after being informed about the research, they were asked to sign an informed consent form. None of the participants belonged to a vulnerable group.

Reliability and validity are widely discussed in quantitative research, but not that often in qualitative and mixed-method researches. The diversity in qualitative data collection techniques or the fact that the processes we study tend to change over time hinders the discussion of reliability (Neuman, 2014). However, in my research, I tried to ensure reliability by being consistent in my work, especially in data collection and analysis. As the participants are student teachers doing their school-based teaching practice, their experiences change in a great deal over time.

3.3.2.2 Data collection tool

Having reviewed the relevant literature, and having conducted the document analysis on course descriptions, an interview guideline was developed for the semi-structured interviews with student teachers. According to the interview guide, four main themes (background information, general practice experience, research experience, research competence) and within these 11 specific interview questions and several prompts and probes were defined. For the interview guideline, please see Appendix 3.

[20] https://www.elte.hu/file/ELTE_Etikai_Kodex.pdf

[21] http://www.apa.org/ethics/code/

[22] http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/ethics_en.htm

As the results of the semi-structured interviews were expected to provide a context-specific (case-specific) insight to the researched topic, I used the same guideline in both of the two cases (Hungary and Austria).

3.3.2.3 Sample

As stated above, student teachers formed the sample of the present inquiry. Due to the qualitative nature of this method, I chose a non-probability sampling method. According to Patton, purposeful sampling „is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources“ (Palinkas et al., 2016). The biggest sample-related limitation of my research was its bound to the project implementation time; therefore I relied on the professional network of the EDiTE project regarding the selection of the sample. I looked for student teachers from different disciplinary fields, being enrolled into initial teacher education programmes to become teachers on ISCED levels 2 and/or 3 of general subjects and had already completed or been completing their practicum at the time of the interview. With such a purposeful sampling method I managed to identify student teachers who were knowledgeable and experienced with the researched phenomenon (Cresswell & Plano, 2011), and I conducted interviews with 3 student teachers from Hungary, and 3 student teachers from Austria. Since individual interviews were not the only method of data collection, I was not aiming for a big sample. Initially, I planned to conduct two interviews per case, however, having the first two interviews conducted with Austrian student teachers, in order to ensure the „saturation of knowledge” (Bertaux 1981, p. 37), I increased the number of interviews to 3 per cases. It should be emphasised that the indicated disciplines of the interviewees (the selected subjects to be teachers of) are mere of an informative nature, the present study does not focus on the differences based on the disciplinary background of the student teachers. Table 9. summarises the characteristics of the participants.

9. Table. The sample for the interviews

	Hungary		
	Student 1.	**Student 2.**	**Student 3.**
Length	40 min.	35 min.	38 min.
Platform	Skype	Skype	Face-to-face
Disciplines	History Geography	Physics	Mathematics English
Language	Hungarian	Hungarian	Hungarian
	Austria		
	Student 1.	**Student 2.**	**Student 3.**
Length	45 min.	43 min.	40 min.
Platform	Face-to-face	Face-to-face	Face-to-face
Disciplines	English Geography	Biology English	Chemistry Computer Science
Language	English	English	English

3.3.2.4 Data analysis

Having the interviews transcribed, I conducted a qualitative content analysis on the transcripts using MaxQDA 18 software. When one does qualitative analysis, he/she arranges the raw data into conceptual categories and creates themes or concepts. As Neuman (2011) suggests, the research question guides the process of coding (which is an integral part of data analysis), but the researcher should keep an open mind and let new questions emerge (Pesti et al., 2018).

I followed Strauss' (1987) differentiation of three types of coding, therefore, I reviewed the data 3 times, each time with a different type of coding:

1. Open coding („the first coding of qualitative data that examines the data to condense them into preliminary analytic categories or codes" (Neuman, 2011, p. 481). The researcher locates themes and comes up with initial codes. The researcher tries to identify critical terms, central people, key events, or themes. A

code has 5 part: label or name, a definition, a flag describing how to recognise the code in the data, an exclusion or qualification, an example.

2. Axial coding („A second stage of coding of qualitative data during which the researcher organises the codes, links them, and discovers key analytic categories" (Neuman, 2011, p. 482)). The researcher begins axial coding with an organised set of initial codes or preliminary, so the focus is on the initial code themes (the aim is to organise them and identify the axis of key concepts), but additional codes or new ideas may emerge. While doing axial coding, the following questions should be asked:
    - Can I divide existing concepts into subdimensions or subcategories?
    - Can I combine several closely related concepts into one more general construct?
    - Can I organise categories into a sequence or by physical location?
3. Selective coding („The last stage in coding qualitative data that examines previous codes to identify and select data that will support the conceptual coding categories that were developed." (Neuman, 2011, p. 484)). This phase involves scanning all the data and previous codes selectively (looking for cases to illustrate themes).

Having the interview transcriptions coded, I formed categories by grouping together related codes, and finally, I formulated themes as an attempt to express underlying meanings in two or more categories (Erlingston & Brysiewicz, 2017). For an illustration of the data analysis process, please see Appendix 4.

3.3.3 Method of groups interviews

3.3.3.1 Methodological and ethical considerations of conducting group interviews

In order to have a better understanding of the researched topic, I conducted group interviews as well. Since conducting interviews and group interviews share a lot of similar characteristics by nature, most of the methodological and ethical considerations of conducting interviews apply to conduct group interviews. To avoid repetition, for some of these considerations of conducting group interviews, please see Chapter 2.3.2.1.

Frey and Fontana (1991) pointed out in their writing that the technique of group interviews can enhance the social investigations, because by using this technique, the researcher will have „data on group interactions, on realities as defined in a group context, and on interpretations of events that reflect group input" (p. 175). This technique is somehow neglected in the literature compared to other techniques for data collection, such as interviews or observations. However, I considered it useful in my research for the following reasons:

- I could further develop an understanding of the topic gained by the individual interviews,
- it provided an opportunity to explore more ideas related to the topic,
- due to the group interactions, the participants were able to have an open discussion, and in this manner, I could hear the answers of those participants, who otherwise would not have agreed to take part in an individual interview.

3.3.3.2 Data collection tool

Having the relevant literature reviewed and taking into consideration the results of the individual interviews, I developed a guide for the semi-structured group interview (Appendix 5.). It contains three main themes: the themes of general practice experiences and research experience serve to explore further the themes, which were also included in the individual interview guidelines. However, this time the questions are more focused. The third theme explores the research-learning nexus, as described in Healey and Jenkin's model (2009). The same guideline was used in both of the cases.

3.3.3.3 Sample

Student teachers formed the sample for the group interviews. Similarly, to those considerations of the individual interviews presented in Chapter 3.3.2.3. I used purposeful sampling. I conducted 4 group interviews per case, with at least five student teachers in each group. It should be emphasised that the indicated disciplines of the interviewees (the selected subjects to be teachers of) are mere of an informative nature, the present study does not focus on the differences based on the disciplinary background of the student teachers. Table 10. summarises the characteristics of the participants.

10. Table. The sample for the group interviews

	Hungary			
	Group 1.	**Group 2.**	**Group 3.**	**Group 4.**
Length	50 min.	45 min.	46 min.	44 min.
Nr. of participants	10	10	10	11
Platform	Face-to-face	Face-to-face	Face-to-face	Face-to-face
Language	Hungarian	Hungarian	Hungarian	Hungarian
Disciplines	Mathematics History Hungarian language English	History English French Music	Physics Geography History Hungarian language	Mathematics English language Russian language Hungarian language

	Austria			
	Group 1.	**Group 2.**	**Group 3.**	**Group 4.**
Length	48 min.	55 min.	42 min.	47 min.
Nr. of participants	5	5	5	5
Platform	Face-to-face	Face-to-face	Face-to-face	Face-to-face
Language	English	English	English	English
Disciplines	Mathematics Chemistry Biology History Sports Spanish English	Physics Chemistry Maths Geography English Italian	Mathematics Chemistry Biology Geography English	Mathematics Chemistry Biology Geography English Latin Music Theology

3.3.3.4 Data analysis

The analysis of the data collected by group interviews was conducted in the same manner as the analysis of the data collected by individual interviews, presented in Chapter 3.3.2.4. For an illustration of the data analysis process, please see Appendix 4.

Chapter summary - Methodology

Based on the Methodology chapter, Table 11. summarises the aim of the research, research questions, methods of data collection, and sources of data.

11. Table. Overview of the research aim, questions, methods and data sources

The aim of the research	to reveal the role of practicum of initial teacher education programmes in developing student teachers' competences and preparing them for conducting practice-oriented research in the cases of two universities from Hungary and Austria		
Research Questions	What are the characteristics of the pedagogical-psychological courses and the practicum in ITE programmes?	How does the practicum in ITE programmes contribute to the development of competences required for conducting practice-oriented research in the participating countries?	What are the experiences of student teachers regarding practice-oriented research?
Methods of data collection	Document analysis	Document analysis Interviews Group interviews	Interviews Group interviews
Sources/Participants	ITE programmes	Student teachers	ITE programmes Student teachers

4. Findings

Chapter preview

This chapter contains the presentation of the findings. Due to the case study nature of the research, the findings are presented in two cases: the case of the Hungarian university and the case of the Austrian university. Each case covers two major parts: the first part deals with the findings related to document analysis of ITE programmes, while in the second part I present the findings related to data collected by interviewing student teachers, individually and in groups.

4.1 The case of the Hungarian university

Chapter preview

The subchapter dealing with the case of the Hungarian university firstly explores the findings of the document analysis of initial teacher education programmes, both from the pre-reform system (MA programme) and the current system (undivided programme). This is followed by the introduction of themes that emerged from the interviews from the pilot phase and group interviews with student teachers.

4.1.1 Document analysis of initial teacher education programmes

4.1.1.1 An initial teacher education programme before the reform

Hereby follows the presentation of the findings related to the document analysis conducted on course descriptions of the pedagogical-psychological module of an MA programme offered by a Hungarian university.

Background information

The pedagogical-psychological module of the MA programme includes 18 courses, where nine is of a pedagogical, seven is of a psychological, and two is of a pedagogical-psychological nature. Most of the courses (13) are of 2 ECTS, while the remaining ones are of 1 ECTS. Regarding the type of the course, the practical training courses (12) are dominating over the lecture type (6). Looking at the distribution of courses over the five semesters, it becomes visible that the first semester is mostly course-based (8 of the courses are planned for the first semester), and a decreasing tendency of course numbers implies that the emphasis is being put on practicum. Three forms of assessment are being used throughout the course descriptions: practical assessment in 10, colloquium in 6, and 3-graded assessment in 2 of the cases.

Competences (focusing on research-related ones)

All the course descriptions included a list of competences in the form of knowledge, skills and attitudes. Although these competence descriptions were very detailed, research-related components were underrepresented in them. Three of the courses referred to a research-related knowledge component. Regarding the skills, on the one hand, some of the course descriptions referred explicitly to skills regarding research, suggesting that student teachers shall become consumers of research (e.g., is able to “read”, “orientate”, “interpret” existing literature), and, even though a slightly less emphasised, producers of research (e.g., “using, developing and creating research knowledge”.

On the other hand, some courses identified skills that are related to conducting research in a broader sense. Finally, there is one course description mentioning an attitude component that might be relevant and can be considered as a characteristic of future teacher researchers, and that is the critical attitudes to one's teaching (examining, discussing, questioning practices). Table 12. summarises the different knowledge, skill and attitude components identified in the course descriptions.

12. Table. Knowledge, skill and attitude components identified in the course descriptions

	Competence items	Courses[23]
Knowledge	Has knowledge about methods of inquiry for revealing the reality of schools	1
	Has knowledge about recent scientific results regarding cognitive processes and their development	1
	Has knowledge about the methods of getting to know pupils/students	1
Skills	Is able to read and analyse theoretical and empirical research papers related to educational sociology	1
	Is able to orientate in the professional literature	1
	Is able to interpret national and local measurement results	1
	Using, developing and creating research knowledge to inform practices	2
	Is able to recognize and analyse problems	1
	Collaborating with colleagues, parents and social services	2
	Reflective, metacognitive, interpersonal skills for learning individually and in professional communities	3
Attitudes	Critical attitudes toward one's own teaching (examining, discussing, questioning practices)	1

Content

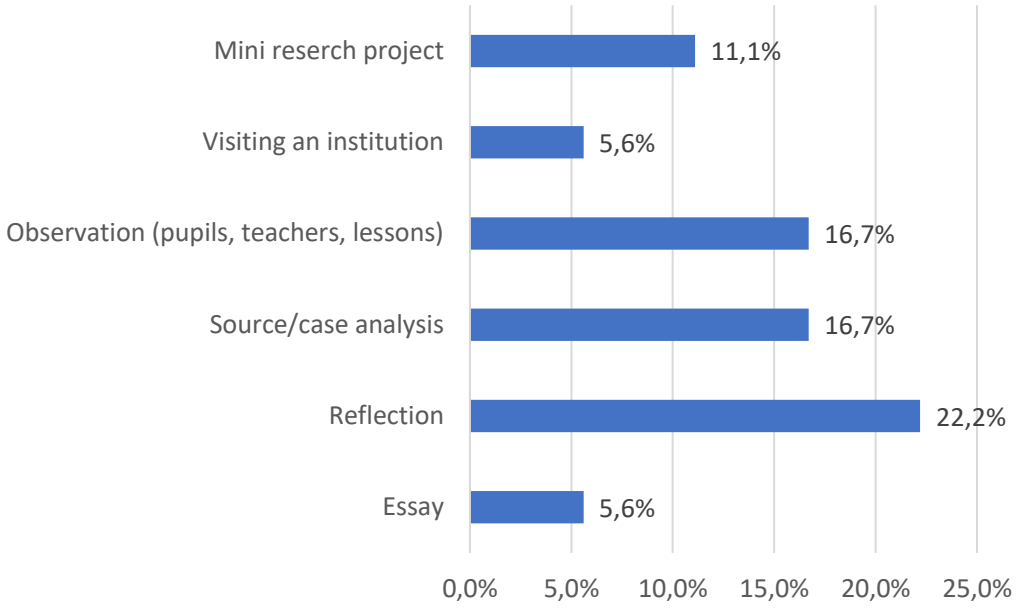
All of the course descriptions identified the content, although to different extents. Similarly, as it was described in the previous paragraph, some of the contents in the case of 2 of the course descriptions explicitly refer to research (e.g., "research methodology", "innovative, researcher teacher", "sociometry"), while some other contents (in 1 of the course) are related to contents that have a less explicit relation to research (e.g., "reflection").

Course deliverables

In the case of 10 courses there was some form of a course deliverable indicated in the description, Figure 11. visualises the distribution of these. Some course deliverables are based

[23] Number of course descriptions referring to the competence item

on a research-related activity (e.g., source analysis, case analysis, observation), but more importantly, there are two courses that explicitly indicated a "mini-research project" as a course deliverable. The deliverables are related to a school-based activity in 4 of the courses.



11. Figure. Frequencies of course deliverables

Literature

Most of the course descriptions (14) included a list of mandatory literature, and in addition to this, 5 of the descriptions included a list of recommended literature. Although most of the mandatory and recommended literature were published after 2000, dominantly they were publications (of any type) of Hungarian authors, and none of the items on the literature lists was on a foreign language.

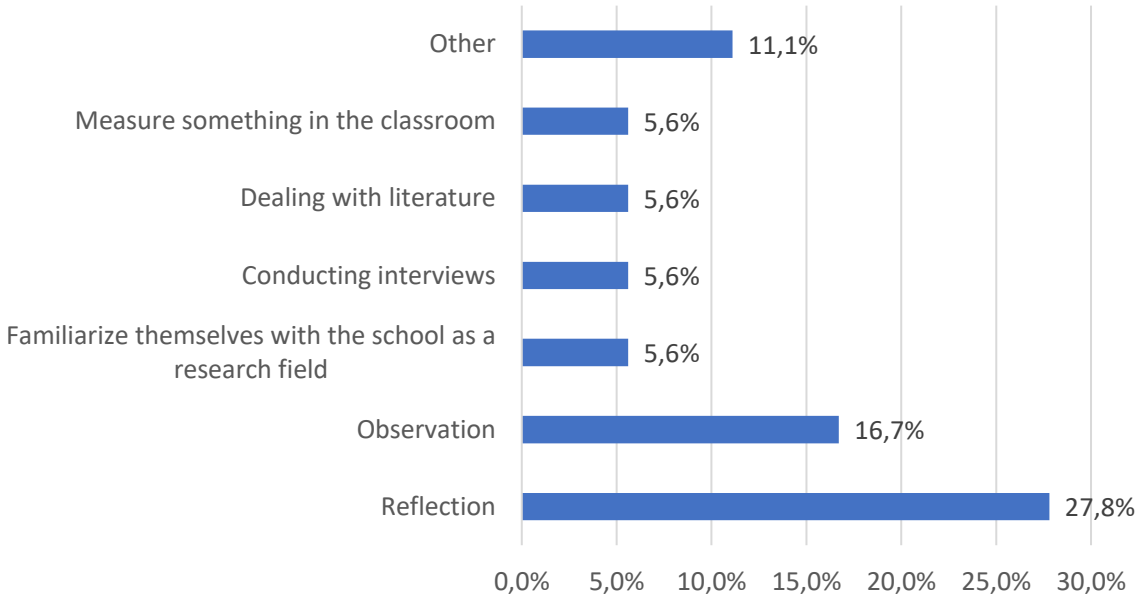
Teaching-research nexus

None of the course descriptions mentions explicitly that research results are integrated into the course. However, a more in-depth analysis of the descriptions revealed that in one case student teachers write about research, in two cases learn about research methods (one of these cases is related to quantitative research). Moreover, in four cases they conduct research: in two

the research process and problems are emphasised, while in the other two the research content, processes, and problems are emphasised.

Research-related activities

Half of the course descriptions mention various activities, and some of these are explicitly research-related. In 4 of the cases it is explicitly defined that the activities are practice-oriented (they are connected to pupils, students or schools). Figure 12. represents the frequencies of student teachers' research-related activities as described in the course descriptions.



12. Figure. Frequencies of student teachers' research-related activities

4.1.1.2 A current initial teacher education programme

Hereby follows the presentation of the findings related to the document analysis conducted on course descriptions of the pedagogical-psychological module of an undivided programme offered by a Hungarian university.

Background information

The pedagogical-psychological module of the undivided programme includes 17 courses, where eight is of a psychological, six is of a pedagogical, one is of a pedagogical-psychological, 1 of a practical nature, and in addition to this one course is explicitly related to the field of ICT. Most of the courses (10) are of 2 ECTS, 5 of them are of 1 ECTS, while the remaining ones are of 3 ECTS. Regarding the type of the course, the seminars (10) are dominating over the lecture type (6), and one course is indicated as a practical training course. Looking at the distribution of courses over the 12 semesters, it becomes visible that the major part of the pedagogical-psychological module's courses (10) are planned for the first and second year. During those semesters when student teachers conduct their practicum, the number of courses from the pedagogical-psychological module is decreased: from the 7th to the 10th semesters there is no pedagogical-psychological course planned, and in the 11th and 12th semesters (the last year), there are three courses planned. Three forms of assessment are being used throughout the course descriptions: practical assessment in 8, colloquium in 6, and three graded assessment in three of the cases.

Competences (focusing on research-related components)

All the course descriptions included a list of competences in the form of knowledge, skills and attitudes. Similarly to the MA programme, these competence descriptions were very detailed, and 9 of the courses referred to a research-related knowledge component. Regarding the skills, on the one hand, some of the course descriptions referred explicitly to skills regarding research, suggesting that student teachers shall become consumers of research (e.g., is able to "identify", "use", existing literature), and producers of research (e.g., "collecting, analysing, interpreting evidence and data". On the other hand, some courses identified skills that are related to conducting research in a broader sense (e.g., reflection, collaboration). Table 13. summarises the different knowledge, skill and attitude components identified in the course descriptions.

13. Table. Knowledge, skill and attitude components identified in the course descriptions

	Competence items	Courses[24]
Knowledge	Has knowledge about methods of inquiry for the revealing group and peer relations	5
	Has knowledge about the methods of getting to know pupils/students	4
	Has knowledge about the role of reflective thinking	2
Skills	Monitoring, adapting and assessing teaching/learning objectives and processes	3
	Is well-informed in the pedagogical and subject-specific literature	1
	Is able to analyse and interpret the research and development results of these areas	1
	Is able to identify and use professional literature when solving practice-related problems	1
	Using, developing and creating research knowledge to inform practices	1
	Collecting, analysing, interpreting evidence and data (school learning outcomes, external assessments results) for professional decisions and teaching/learning improvement	4
	Collaborating with colleagues, parents and social services	8
	Negotiation skills (social and political interactions with multiple educational stakeholders, actors and contexts)	1
	Reflective, metacognitive, interpersonal skills for learning individually and in professional communities	6
Attitudes	Inequalities and fairness in the light of national and international measurements	1
	Pedagogical evaluation and evidence-based learning support methods	1
	Dispositions to change, flexibility, ongoing learning and professional improvement, including study and research	5
	Critical attitudes toward one's own teaching (examining, discussing, questioning practices)	5
	Dispositions to team-working, collaboration and networking	6
	Is open to cognition and gaining experience	1

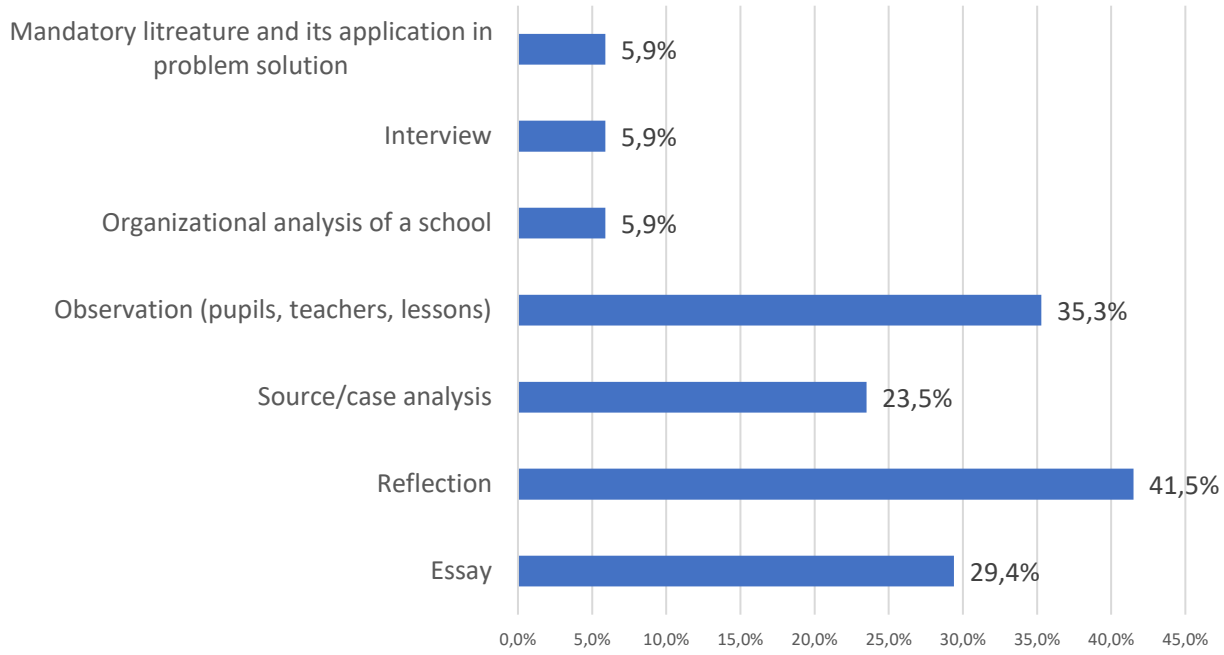
[24] Number of course descriptions referring to the competence item

Content

All of the course descriptions identified the content of the course, although to different extents. Although in the overall programme description, and some specific course description the evidence-based approach is indicated, explicitly only one course mentions a topic related to research ("Methods, limitations and ethical considerations of getting to know a child, with a special focus on the method of observation.").

Course deliverables

In the case of 12 courses there was some form of a course deliverable indicated in the description, Figure 13. visualises the distribution of these. Some course deliverables are based on a research-related activity (e.g., source analysis, case analysis, observation), but more importantly, there are a few courses that explicitly indicate a research-related deliverable (e.g., "interviews", "organisational analysis of a school", etc.). The deliverables are related to a school-based activity in 5 of the courses.



13. Figure Frequencies of course deliverables

Literature

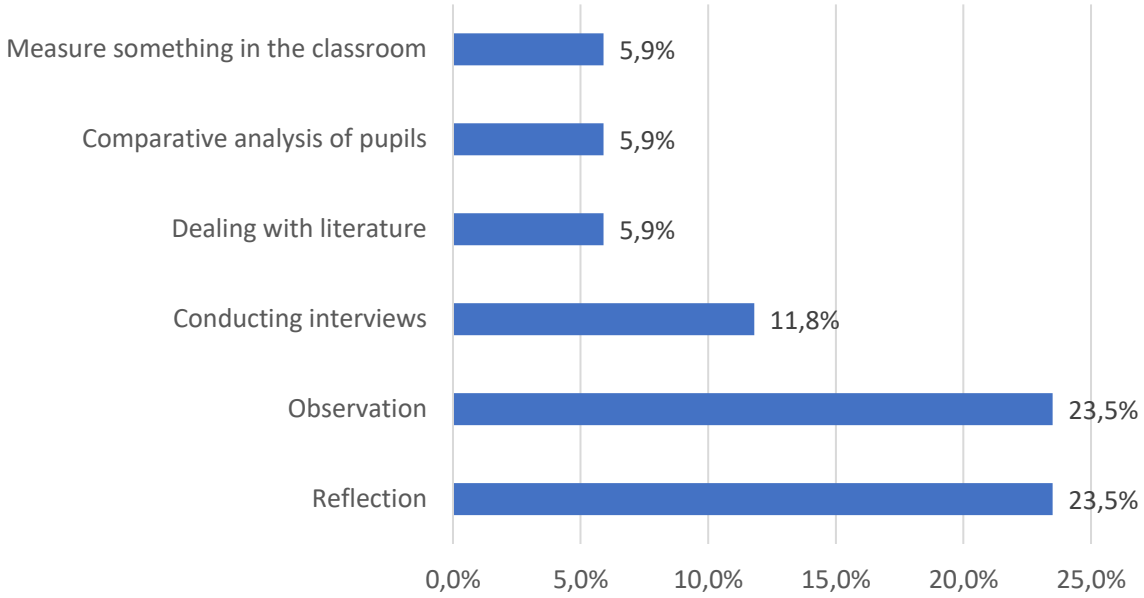
Most of the course descriptions (15) included a list of mandatory literature, and in addition to this, all of the descriptions included a list of recommended literature. Although most of the mandatory and recommended literature were published after 2000, dominantly they were publications (of any type) of Hungarian authors, and only a very few items on the literature lists were on a foreign language.

Teaching-research nexus

Although some of the course descriptions mention explicitly that research results are integrated into the course, its manner and forms of doing it are not always elaborated. In case of 3 of the courses, student teachers discuss existing research results, but there is no information if these results were produced within the university, by their lecturers, or outside (e.g., research publication). In the case of two courses student teachers conduct research, and they write about it. In those courses where research gains importance, research content is emphasised over research problems and processes (research content is indicated in four of the courses, while research process and problem in 1).

Research-related activities

Seven of the course descriptions mention various activities, and some of these are explicitly research-related. In 3 of the cases it is explicitly defined that the activities are practice-oriented (they are connected to pupils, students or schools). Figure 14. represents the frequencies of student teachers' research-related activities as described in the course descriptions.



14. Figure. Frequencies of student teachers' research-related activities

4.1.2 Student teachers' experiences during the practicum, with a special focus on practice-oriented research

4.1.2.1 Interviews

Having the individual interviews coded, two themes emerged: school-based teaching practice and research experience during the school-based teaching practice. In each of the two main themes, several sub-themes could be formulated based on the codes grouped into categories. The results are presented according to the main themes, and within that according to the sub-themes.

Theme 1: School-based teaching practice

<u>The practice school</u>

The placement of student teachers regarding their school-based teaching practice is of a significant influence not only to their experiences during the period of the ITE they spend at the school, but to the initial phase of their career as teachers, too. One of the interviewees

emphasised the vast differences between university practice schools (those that have a close, sometimes even formal collaboration with the universities and are considered to be more prestigious) and "regular" schools (those who have loser connection to universities). The interviewee draws the attention to the advantages of completing the different school-based practicums in different schools, because in some of them student teachers could focus on the subject-specific activities ("It is a very strong secondary school, everyone knows it. The students are high-achievers…. I had to face a very motivated group of students there" (student teacher 3, Hungary)), but in some other schools they could focus on more general pedagogic issues (e.g., special educational needs of students).

Student teachers' activities during the practice

Although teaching itself is the focal point of the school-based teaching practicum, there are many other activities during this period with the aim to prepare student teachers for the profession. However, the interviewees mostly mentioned the teaching-related ones, such as lesson observations and preparation for teaching. An interviewee explained that the practice could be more efficient if it were organised in the following way:

> Every student should be assigned to one school where (s)he gets to practice more, gets to be involved in the school life. Not like it is, that we just pop in a school, teach 7-15 lessons in a hurry, but in a way where we get to do lesson observations from the beginning of the process, sometimes contribute to the teaching, and then take over the teaching. (student teacher 1, Hungary)

The preparation for teaching in general, but also true for one specific lesson, is usually more time consuming and stressful for student teachers than for in-service teachers, and that is understandable because of, e.g., the lack of experience, or the duality of roles (student teacher – teacher). However, some factors make this preparation more difficult for student teachers, including the various expectations from the side of the university which, from the student teachers' point of view are farfetched to implement, or the mentor teachers' limited time to support them in their preparations.

Student teachers' learning during the practice

Although for most student teachers the practicum is the first time they have the chance to try out their role as a teacher in a real school class, in some instances they already have some teaching experience. One of the interviewees simultaneously to her university studies works part-time as a teacher in a higher secondary school, and identified an important learning opportunity that she has access to as a practising teacher, and that is being considered as a colleague by other teachers, being one of them, sitting with them in the teachers' room:

> At the moment I am in a very lucky situation because in the school where I work, I get to sit between the leader of the work community and the headmaster of the problematic class. There is such a strong relationship between the teachers, that if I enter the teachers' room without a smile on my face, they immediately ask me what the problem is. And then we discuss it; they give me advice. (student teacher 1, Hungary)

Although the interviewees mostly see their development during the practice as the improvement of their general pedagogy-related competences, two of them also identified the disciplinary, subject-specific expectations from the side of the students and mentor teachers and used these expectations for self-development.

> A big fear of mine was to work with the "smart" kids that are common in university practice schools – and it was confirmed that it was difficult to teach those, who knew everything, who had new ideas, therefore I felt that I needed to improve my disciplinary knowledge of Physics, but I was also happy for this, because I thought of this as a learning opportunity. (student teacher 2, Hungary)

Stakeholders

The most important actor, at least according to the interviews, is undoubtedly the mentor teacher, the in-service, practising teacher employed at the practice school who is responsible for guiding the student teacher throughout his or her teaching practice. Besides the positive, learning-enhancing and supportive roles of mentor teachers ("providing feedback to support development", "putting the bar high" etc.), two of the interviewees identified some bad experiences, e.g., that the mentor teacher was not keen to let the student teacher take control

(due to the shortness of the practicum), or that the mentor teacher shall assess the student teachers needs and adjust the provided support to these.

Theory vs practice

Student teachers mostly see the importance of the school-based practicum in bridging the gap between theory (embodied by the university) and practice (the world of work in the school environment). One interviewee described this bridge in the following way:

> The practices are definitely significant since we have learnt about teaching and curriculum only in theory, we discussed made-up pedagogical situations, and we could not foresee what kind of difficulties we might have during teaching. We did not know which areas that our strengths. (student teacher 1, Hungary)

The interviewees reported on the differences between theory and practice, mostly from a pedagogical point of view, but they did not describe these differences as problems. However, one interviewee, in relation to the subject-specific preparation, said the following:

> I have discussed this with many peers of mine, and we concluded that the things they made us learn at the university are confusing for secondary school students. (student teacher 3, Hungary)

Theme 2: Research experience during the school-based teaching practice

Preparation to do research

The interviewees identified many competences that one might need to conduct research, including creativity, knowing and willing to learn, patience, critical approach, expertise, professional dedication, energy, etc. Although student teachers seem to have an idea about what is needed for conducting research, they explained that there was a lack of formal, systematic preparation (e.g., no research methodology courses at the university). However, one interviewee explained that:

> … before lesson observations, they told us what we shall pay attention to, and if they wanted us to do a questionnaire, they explained what a questionnaire is, but they did not really explain how we shall compile it. (student teacher 3, Hungary)

Student teachers' research-related activities

The way student teachers interpret research influences their attitude towards research-related activities during the practicum. One interviewee's first thought when hearing the word research was related to Physics, to his/her disciplinary field, and (s)he was not sharing much about her research-related experiences from a pedagogical point of view during the interview. The two other interviewees had a broader understanding of research (inquiry of a topic/problem, curiosity, practical benefit), and they mentioned their small-scale research projects conducted as a requirement that is practice-oriented (methods of drama pedagogy, Mathematical creativity).

Besides these, two other important aspects have emerged that are supportive for student teachers during conducting research: a good supervisor who can give the framework and general guidance, and practical insight so that the research is not very theory-oriented, but more practice-oriented.

Methodological considerations

Both of the two interviewees who mentioned their research-related activities during the practicum conducted small-scale research in a secondary school class. One of them developed a questionnaire and described the process as the following:

> My sibling is a psychologist, and I asked for advice from him/her, and what happened is that I conducted [the research], compiled the report as a course deliverable, got a grade, and that is all, I did not get any feedback. (student teacher 3, Hungary)

The other interviewee conducted practicum-long research, where at the beginning of the practicum (s)he asked the students to fill in a questionnaire, during the practicum (s)he used various methods, and at the end of the practicum (s)he asked the students to fill in another questionnaire. Although both of the student teachers used questionnaires to collect data, there

is a big difference between the two instances as the second student teacher extended it and used the whole practicum as a research field.

Research in the school context

Although during the practicum student teachers have a dual role (somewhere in between a student and a teacher), they develop crucial attitudes that may influence their career at a later point, e.g. with regards to professional development ("e.g., reading research articles, because there is always something new under the sun", (student teacher 3, Hungary). The way they think about research is not an exception. On the one hand, practicum can be an excellent opportunity to support them in conducting relevant, practice-oriented research topics that they can connect to their practice (one interviewee thinks the research topic itself (s)he worked with will be useful in the future, while the other interviewee described a specific problem situation that could be solved by research), but on the other hand they may experience the difficulties of conducting research as a teacher, such as the severe lack of time.

4.1.2.2 Group interviews

Having the group interviews coded, six themes emerged: research from student teachers' point of view, preparation for conducting research, methodological considerations, university's influence on research, student teachers' learning through research, and educational relevance of research conducted by student teachers. The results are presented according to the main themes.

Theme 1. Research from student teachers' point of view

Two major viewpoints have emerged from the data collected by group interviews. One group of student teachers explained that they are overloaded with tasks, they do not have time and are not prepared for research-related activities, and in general, they think it is not very common in Hungary that teachers do research; therefore they are less open to educational research. The following quote snippets illustrate the opinion of this group of student teachers.

> My experience is that research has not much to do with our lives, because we just want to survive the practicum. (group 4 of student teachers, Hungary)

> We are so overloaded with everyday tasks during the practicum, and we are so insecure about the methodology, that a lot of us decide not to do an empirical MA dissertation. (group 4 of student teachers, Hungary)
>
> Teachers are also not familiar with research, just like us, we do not even know how we could use research. (group 3 of student teachers, Hungary)

The other group of students think about research in a broader sense, their definition of research is more problem-focused, they seem to be more open to educational research. The following quote snippets illustrate the opinion of this group of student teachers.

> If I think about research in a broader sense, for example, when I go into a classroom, I do something there to get to know my students, this can also be considered as research. (group 4 of student teachers, Hungary)
>
> In my subject, the subject methodology is not really developed. There are a lot of sources, but they are outdated, and we cannot use them in 2018. In my research, I would focus on different methodological issues, and I would try to combine the two subjects of mine (both of them are languages). (group 4 of student teachers, Hungary)

Theme 2. Preparation for conducting research

When discussing the different ways of preparation for conducting research during the practicum, the interviewees mentioned three categories: relying on previous research experience, university-based preparation (distinguishing disciplinary- and educational-related), and individual preparation. The following quote snippets illustrate the manner student teachers described their preparation for conducting research:

- when they rely on previous research experience:

  > I conducted research previously with two friends of mine, and that is how I got familiarised with it. (group 4 of student teachers, Hungary)
  >
  > At my department, there are a lot of research projects going on, and sometimes I take part in these by collecting data, sometimes I take part as a research subject. (group 4 of student teachers, Hungary)

- when they rely on university-based preparation:

> We had a course at the educational department where we had to conduct interviews or questionnaires, an individual interview or a questionnaire in a classroom. Before the actual data collection, we practised how we shall do these. (group 4 of student teachers, Hungary)

- when they rely on individual preparation:

> I read about it, how to conduct research. (group 3 of student teachers, Hungary)

Theme 3. Methodological considerations

Among the methods for data collection, the interviewees enlisted interviews, questionnaires and observations as the most common methods, and the participants were usually secondary school students. Although student teachers are not restricted to work exclusively with these methods and participants, they tend to „play it safe“ and stick to these. Besides this, there is a possibility that, since it is not included in their curricula, they are not aware of other trends and methods in educational research (e.g., action research, classroom research, practitioner research, self-study) (Pesti et al., 2018).

Theme 4. University's influence on research

It has emerged from the group interview data that the interviewees do not have specific courses dealing with research methodology, but there are some occasions when in a course the deliverable requires them to collect data, the lecturer explains them the way they shall do it.

> I do not think that we had such a [research methodology] course, but whenever we had a course deliverable that required mini research, then we discussed the different data collection methods. Therefore, what we discussed at the university lessons, we got to try it out in practice immediately. (group 43of student teachers, Hungary)

> We had many [research-related] activities at the university before, but it is just getting clear for me now, what kinds of research we have, I am starting to see the big picture. Until now I got only bits and pieces of it. (group 4 of student teachers, Hungary)

The university's influence on student teachers' competence development and attitudes towards research can be observed in two primary forms. In the first form student teachers are

mostly considered as the audience, the consumers of research, they remain in a passive role, and it is manifested in university staff presenting, integrating their research projects and results into their teaching.

> In one of our courses, the lecturer talks about research on Mathematical anxiety, and this is important for me as a future teacher. (group 4 of student teachers, Hungary)
>
> I heard about research [from my lecturer] about work with students with hearing disabilities, … and I think this will be useful in the future. We got very practical advice. (group 4 of student teachers, Hungary)

The second form how university staff can influence student teachers' competence development and attitudes towards research is to actively engage them in research activities, where they are not only consumers but producers of knowledge. One way to engage students is to integrate research-related activities, tasks, deliverables in the courses (this is further elaborated in Theme 6. and Theme 7.), while the other way might be to involve them in university staffs' research.

> It happened that we got involved in our lecturer's research project within the framework of a course. For example I got one topic, I had to observe five lessons from this perspective and analyse them. (group 3 of student teachers, Hungary)

Theme 5. Student teachers' learning through research

Although the interviewed student teachers acknowledge the learning potential in conducting research, they explained that there are some factors (mostly related to time management) that hinder their learning through research:

> These things (research-related activities) would be awesome, but they are not structured in a good way. Now, when we are doing the practicum, we barely have time. Moreover, we shall have more preparation (a university course) on research methodology; this would be a great help for the preparation of the thesis as well. (group 3 of student teachers, Hungary)
>
> Research takes up a lot of time, and when we write the thesis, we simply don't have time for research. I would be interested in doing a lot of things, but I barely don't have time. (group 4 of student teachers, Hungary)

Theme 6. Educational relevance of research conducted by student teachers

The interviewed student teachers explained that one way or another (mostly as a course deliverable), they had conducted research on different scales during their studies. Based on the interviews, student teachers' interest that is based on personal experiences seems to be the dominant driving force not only in deciding on the research topic but throughout the research project as well. The following quote snippets illustrate this.

> I messed up a lesson during my teaching practice, and I had to improvise. Then I made up a new game, and I had the idea that this can be the topic of my research. (group 3 of student teachers, Hungary)

> I chose the topic because I knew what my university lecturer was researching, I heard about it during a lesson, and I got the idea from that. When I told this to the lecturer, (s)he was also excited, and we also talked about publishing this together. (group 3 of student teachers, Hungary)

The educational relevance of student teachers' research activities is mostly related directly to their students: the aim of the research is mostly to support them during their practice (to get to know their students, classes better, to get feedback). The following quote snippets illustrate this:

> Developing new methods, in a sense that I develop a new method, then I test it if it works or not. This can be researched. (group 3 of student teachers, Hungary)

> Some of us do this thing that is related to the thesis. We have a few lessons at the school, and then we ask the students about their opinion, whether it was useful for them. I use questionnaires… (group 4 of student teachers, Hungary)

> … at the end of the practicum, we got feedback from the students regarding what was good, what should be improved.

> Moreover, I asked the students in the beginning what they like to do. This was good for me because I knew what kind of materials to prepare. I asked them in person. We are recommended to do this, but it is not a requirement. (group 4 of student teachers, Hungary)

Chapter summary - The case of the Hungarian university

This subchapter has dealt with the case of the Hungarian university, firstly by exploring the findings of the document analysis of initial teacher education programmes, both from the pre-reform system (MA programme) and the current system (undivided programme), and then by the introduction of themes that emerged from the interviews from the pilot phase and group interviews with student teachers. These findings are further discussed in Chapter 5.

4.2 The case of the Austrian university

Chapter preview

The subchapter dealing with the case of the Austrian university firstly explores the findings of the document analysis of initial teacher education programmes, both from the pre-reform system (undivided programme) and the current system (BA and MA programme). This is followed by the introduction of themes that emerged from the interviews from the pilot phase and group interviews with student teachers.

4.2.1 Document analysis of initial teacher education programmes

4.2.1.1 An initial teacher education programme before the reform

Hereby follows the presentation of the findings related to the document analysis conducted on course descriptions of the educational studies module of the undivided diploma programme offered by an Austrian university.

Background information

The pedagogical training module of the undivided programme includes 11 courses. 4 of the courses are of 2 ECTS, followed by 3 and 5 ECTS courses (3-3 courses), and there is one course of 4 ECTS. Regarding the type of the course, the lecture type of courses (5) are exceeding the number of practical training courses (4), and there are two courses of a seminar

type. The forms of assessment are not indicated in the course descriptions (however, these are described on the programme level that applies to all courses).

Competences (focusing on research-related ones)

The course descriptions do not include competences, but these are defined on the programme level. There are three competence fields defined on the programme level, each of them is broken down into items, but the items are not strictly differentiated as knowledge, skills and attitude components as in the case of the Hungarian programmes. Table 14. summarises the structure of competences defined in the programme, highlighting those that are relevant in regards to research.

14. Table. Structure of competences

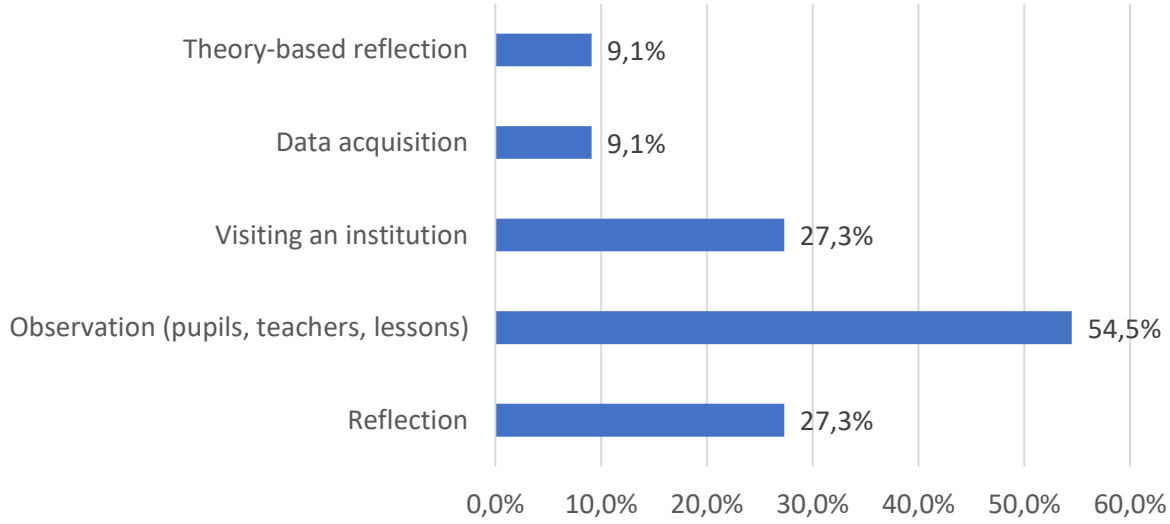
Competence field	Number of items	The highlight of items that are relevant in regards to research
Subject-specific and didactic competences	8	"Research-based learning competence: discovery learning, learning by experimentation, learning by the formation of hypotheses and problem-solving, learning by a change of action and reflection; capability to increase pupils' awareness with intriguing exercises, to assist pupils' self-reviews of their learning outcomes." (University of Innsbruck, 2014, p. 7)
Social and personal competences	9	"Capability to reflect on own interventions based on theoretical understanding." (University of Innsbruck, 2014, p. 7)
Organisational and systemic competences	8	"Capability to understand one's own behaviour in the context of the school system and to contribute to its development; knowledge of methods and instruments for the development of the school and teaching based on their mutual interaction." (University of Innsbruck, 2014, p. 7)

Content

All of the course descriptions identified the content, although to different extents, and sometimes in the form of student activities. Similarly, as it was described in the Hungarian case, some of the contents in more than half of the course descriptions (6) explicitly refer to research (e.g., "research methodology", "teaching observation", "data acquisition (interview, questionnaire)", etc.).

Course deliverables

In the case of 7 courses, there was some form of a course deliverable indicated in the description, Figure 15. visualizes the distribution of these. Some course deliverables are based on a research-related activity (e.g., data acquisition, observation). The deliverables are related to a school-based activity in 5 of the courses.



15. Figure. Frequencies of course deliverables

Literature

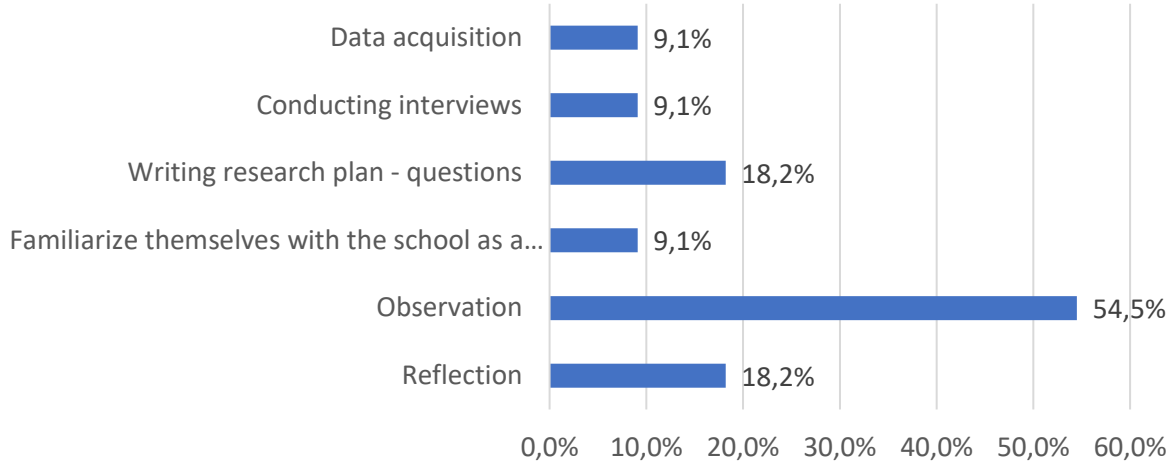
The course descriptions did not include a literature list.

Teaching-research nexus

The analysis of the course descriptions revealed that one course integrates research (results) into its agenda in the form of defining the following content: “incorporating findings of brain research and applied development psychology”. One of the course descriptions explicitly refers to student teachers discussing research within the framework of the course.

Research-related activities

The course descriptions mention various activities, and some of these are explicitly research-related. In 3 of the cases it is explicitly defined that the activities are practice-oriented (they are connected to pupils, students or schools). Figure 16. represents the frequencies of student teachers' research-related activities as described in the course descriptions.



16. Figure. Frequencies of student teachers' research-related activities

Miscellaneous

Due to methodological considerations, elective courses were not included in the analysis. However, in this case, it is important to mention that one elective course offered for student teachers is titled Research Workshop School Development, and it includes the following topics:

- Instruction and participation in teaching preparation
- Implementation and evaluation of school development and assistance projects
- Dealing with basic research questions
- Development and presentation of project results

4.2.1.2 A current initial teacher education programme

Hereby follows the presentation of the findings related to the document analysis conducted on course descriptions of the Educational Studies modules of the BA and MA programmes offered by an Austrian university.

Background information

The Educational Studies modules of the BA and MA programmes include 17 courses in total. Most of the courses are of a pedagogical nature (11); however, it is important to highlight that two courses are research methodology courses. More than half of the courses (9) are of 2 ECTS, while the remaining ones are from 1,5 to 7,5 ECTS. Regarding the type of course, the seminar type of courses (8) is exceeding the lectures (5) and practical training courses (4). The forms of assessment are not indicated in the course descriptions (but described on the programme level and applicable to all courses).

Competences (focusing on research-related ones)

The course descriptions do not include competences, but these are defined on the programme level. There are three competence fields defined on the programme level, each of them is broken down into items, but the items are not strictly differentiated as knowledge, skills and attitude components as in the case of the Hungarian programmes. Table 15. summarizes the structure of competences defined in the programme, highlighting those that are relevant in regards to research.

15. Table. Structure of competences

Competence field	Number of items	The highlight of items that are relevant in regards to research
Subject-specific and didactic competences	8	Research-based learning competence: discovery learning, learning by experimentation, learning by the formation of hypotheses and problem-solving, learning by a change of action and reflection; capability to increase pupils' awareness with intriguing exercises, to assist pupils' self-reviews of their learning outcomes. (University of Innsbruck, 2014, p. 7)
Social and personal competences	9	Capability to reflect on own interventions based on theoretical understanding (University of Innsbruck, 2014, p. 7)

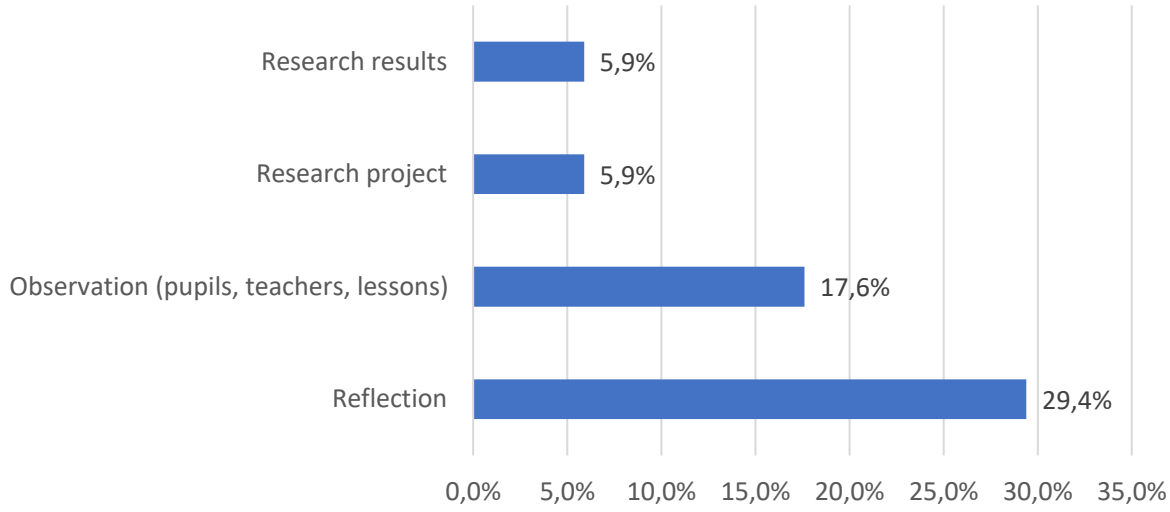
Competence field	Number of items	The highlight of items that are relevant in regards to research
Organisational and systemic competences	8	Capability to understand one's own behaviour in the context of the school system and to contribute to its development; knowledge of methods and instruments for the development of the school and teaching based on their mutual interaction. (University of Innsbruck, 2014, p. 7)

Content

All of the course descriptions identified the content, although to different extents, and sometimes in the form of student activities. Similarly, as it was described in the Hungarian case, some of the contents in the case of 9 of the course descriptions explicitly refer to research (e.g., "research methodology", "in-depth dealing with findings of learning and teaching research", "school research and the current national and international educational research", " Professions and educational research", "School development as a field of research", etc.).

Course deliverables

In the case of 8 courses, there was some form of a course deliverable indicated in the description, Figure 17. visualizes the distribution of these. Some course deliverables are based on a research-related activity (e.g., research project, observation).



17. Figure. Frequencies of course deliverables

Literature

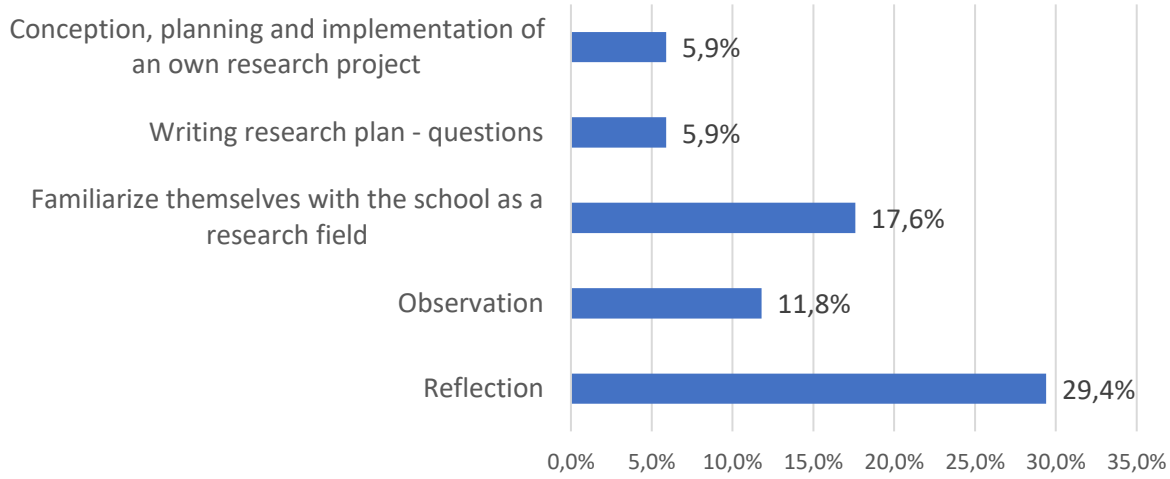
The course descriptions did not include a literature list.

Teaching-research nexus

The analysis of the course descriptions revealed that four courses are based on current research. 7 of the course descriptions explicitly refers to student teachers discussing research within the framework of the courses, 1 of the descriptions mention that student teachers are expected to write about research, and 3 of the descriptions indicate that student teachers learn about research methods (covering quantitative and qualitative approaches, the scientific approach, linking research with models and theories of learning and teaching). Student teachers are mostly treated as participants (they have an active role, the courses are more student-focused than teacher focused), and they conduct their research in 3 of the courses. Although slightly, research process and problems are emphasised over the research content.

Research-related activities

Ten of the course descriptions mention various activities, and some of these are explicitly research-related. In 3 of the cases it is explicitly defined that the activities are practice-oriented (they are connected to pupils, students or schools). Figure 18. represents the frequencies of student teachers' research-related activities as described in the course descriptions.



18. Figure. Frequencies of student teachers' research-related activities

4.2.2 Student teachers' experiences during the practicum, with a special focus on practice-oriented research

4.2.2.1 Interviews

Having the individual interviews coded, three themes emerged: studies, school-based teaching practice, and research experience during the school-based teaching practice. In order to reveal the role of school-based teaching practice of initial teacher education programmes in developing teacher competences required for conducting practice-oriented research, it is necessary to take into consideration the "environment" where this development occurs, therefore discussing the teacher education studies in general, as well as the school-based teaching practice seems a justified action. In each of the three main themes, several sub-themes could be formulated based on the codes grouped into categories. The results are presented according to the main themes, and within that according to the sub-themes.

Theme 1: Studies

Personal opinion about teaching and motivation to become a teacher

Since the interviewed student teachers are close to finishing their studies, they already have a strong opinion whether they want to be a teacher after graduation, or rather do something within their chosen disciplinary fields. One interview said the following:

> Because I know that I want to teach, I want to be at school, and I want to be a teacher, I want to become a teacher, I want to know more, to learn. And there are the student teachers who are not sure if they want to be at school if they want to do something with their subjects. My programme, it gave you both, the subject knowledge and the pedagogical one. And I think you should decide; do you want to be a teacher or don't you. (student teacher 1, Austria)

This decision (pursuing the teaching profession or choosing a disciplinary profession) can affect the way student teachers experience their school-based teaching practice, since those student teachers dedicated to a teaching career realize that the practice and the related tasks prepare them for the profession – even the bad experiences can lead to a „learnt lesson", while hesitant student teachers are more likely to think of practice and the related tasks as just other items on their to-do list (Pesti et al., 2018).

> This [the teaching profession] is a plan B. Maybe plan C. ... and now I have one year when I have actually nothing to do, so I can start a second study. (student teacher 3, Austria)

The story of student teachers. Chronological presentation of events

In most of the cases, a chronological presentation of the interviewees' studies could be identified. However, after reviewing the codes and quotes related to this sub-theme, I had to come to the conclusion that the interviewees stayed on a descriptive level, and this might be due to the fact that they were aware that the interviewer (who was me in all of the cases) is a foreigner who is probably not familiar with the Austrian teacher education system, therefore they felt obliged to explain it, to describe it.

Different aspects of the ITE programmes

Although the interview questions did not directly focus on the activities within the TE programmes, the interviewed student teachers formulated some critiques about it. From one interviewee's point of view the TE programmes lack content elements or activities which would be crucial for successful preparation for the profession:

> I actually put together one test in English during my whole studies, and I had one semester of text correction course in my studies, and that is what I do every day all the time, or I will be doing all the time at the school because text correcting is something that English teachers do. (student teacher 1, Austria)

The importance of reflection is emphasised in the TE programme of the University of Innsbruck (where the interviewees are enrolled to). According to their stories, they are expected to write much reflection. However, student teachers do not seem to realise the power in these exercises, since they do not receive proper instructions and support in doing reflection. Therefore, when student teachers start their school-based teaching practice and are expected to reflect on their first encounter with the teaching profession, it is likely that their reflections will tackle only the surface.

University professors

The interviewees expressed their opinion regarding the background of their university professors involved in the TE programmes. They emphasised that most of their professors, who are supposed to teach, prepare and support them in their preparation for the teaching profession are not, and in some cases have never been, practising teachers in the public education system. They feel that this is a big disadvantage since student teachers do not consider these professors are reliable, trustworthy sources of knowledge.

> Most of them are not teachers there are psychologists, sociologists, some I do not know, all the studies with what they cannot get a job. And they are here. Almost none of them is a teacher. (student teacher 3, Austria)

Theme 2: School-based teaching practice

The story of school-based teaching practice from student teachers' point of view

The interviewees talked about the major amount of time they had to spend on preparation for the lessons they got to teach during the school-based teaching practice. They were aware that by getting more experienced this time devoted for preparation will reduce, but on interviewee mentioned that for him it was especially difficult because the topic he was expected to teach was not covered in his university studies:

> And in the beginning, I had to learn how to work with these parts, because I never had that. So, I had to spend 60 or 70 hours learning the stuff that I need for my teaching. (student teacher 3, Austria)

The interviewed student teachers tended to talk about the different activities they had engaged in during the time of the school-based teaching practice. However, in most of the cases they just explained, described the activity, they did not go into details why it had been a good and valuable, or bad and irritating experience, they did not justify the activities' importance from a pedagogical point of view.

There is one activity that came up numerous times during the interviews, and that is lesson observation. The interviewees usually described it as an activity where they had a passive role: "sat at the back of the classroom" (student teacher 1, Austria).

Interestingly, there was not much mentioning of the teaching itself during the school-based teaching practice.

In the Austrian system of initial teacher education student teachers are prepared to be teachers of two subjects. The preparation for the two subjects usually happens at two different disciplinary departments at the university, and student teachers have distinguished practice time for the two subjects. However, one interviewee emphasised that there is a possibility for transfer between the two subjects:

> Well, I think I can transfer some things, for sure, you know the way you address the students, how to get their attention, how to ask them to be quiet, things like that. But I

> think that the methodology is really different, and teaching biology is new for me too. So, I am really, I do not know, I think it is going to be a big challenge, and it is going to be different. (student teacher 2, Austria)

The interviewees also mentioned the importance of the course at the university they had simultaneously with their school-based teaching practice. Based on their experience, the lecturer of this course is of crucial importance when it comes to the extent to which this course can be helpful:

> We had courses during the practical training, and it also depends on which teachers teach there. For example, once I had a, so my professor was an English teacher himself, so I could ask him things and it was really helpful, but I also, there were also professors who never have, who are not teachers, who have never taught, probably a psychologist, which is helpful, gives you other input, it is also helpful, but it always depends. It would be probably good to have one who has teaching experience, and one who has pedagogical knowledge, or psychological knowledge. That would be really interesting to have. I had more subjects, seminars in my two subjects than in pedagogy, and I think I would have liked more focus on pedagogy and more psychological things. (student teacher 1, Austria)

Importance of practice

There is a lot of evidence that student teachers value the experience they gain during the school-based teaching practice. As there is a gap between theory and practice, the disciplinary departments, the department responsible for the pedagogical and psychological preparation, and the practice schools in a lot of instances do not work in a close collaboration, student teachers are faced to exist in a lot of different realities, and to act according to a lot of different expectations. This may lead to the overvaluing of the practice experience: student teachers see it as the only good thing in their TE programme:

> I believe I learnt the most during my practice. I learnt much more than from doing any other course or class at the university. (student teacher 1, Austria)

To summarize the interviewees‘ opinion about the importance of the school-based teaching practice, it is clear that they value this experience as a valuable preparation for the profession, when they have (or should have) the chance to see if the role of a teacher is suitable for them, to try out new things, new methods, to learn from observing their mentor teachers how not to teach, to get familiarized with a school’s culture.

Practice school

The interviewees explained that in the course of the different practical components of their TE programmes, they got the chance to do their practice in different schools. In most of the cases, they did not have the chance to choose the school or their mentor, these were usually assigned by the responsible authority (the so-called „Landesschulrat“).

The time spent at the practice school does not include only teaching, but other activities as well. Student teachers have a so-called practicum pass, a list of hours they have to spend at the school, and they also have to prepare a portfolio towards the end of their studies which is based on their experience gained during the practice.

The interviewees emphasised how important it was for them whether they were considered „only students“, or „prospective teachers“ at the practice school:

> I think it depends a lot on the teacher you did your practical training with, and also the school because the schools have a different culture, different philosophy about how to do it. Because at my second practical training at the grammar school I got a place in the teachers' room, and I felt part of them, we did Christmas celebration, and it was really nice, I felt so welcomed, and really, it was just a nice atmosphere. (student teacher 1, Austria)

Actors in practice

There are many different actors or stakeholders present during the school-based teaching practice who might influence student teachers‘ development. Besides the pupils being taught by the student teachers (who can be of a wide age range, and a diverse social background) and mentor teachers (whose experience can vary in a great deal), student teachers may get in contact with other teachers at their practice schools, pupils of the practice schools who are not taught by the student teachers, student teacher fellows, supervisors from the

university, parents of the pupils, and other local actors (e.g., representatives of NGOs). The intensity of collaboration between the student teachers and these actors seems incidental, and according to the interviewees, there were no expectations, guidance, nor defined processes how to act with these actors.

The most important actor, at least according to the interviews, is undoubtedly the mentor teacher, the in-service, practising teacher employed at the practice school who is responsible for guiding the student teacher throughout his or her teaching practice. The interviewees were expected to observe some lessons taught by their mentor teachers before their teaching activities. One of the interviewees explained that even though observing the mentor teacher was not a pleasant experience, she learnt something from it:

> He was just standing in front of the classroom, really old-fashioned teaching. I could learn how I do not want to do it. (student teacher 1, Austria)

> He was horrible. He was screaming at the students all the time; he was not respectful, he did not treat them in a respectful way. It was not a good experience. But as I said I learnt how I do not want to do it. (student teacher 1, Austria)

Trust seems to be an essential factor in the relationship of the student teacher and the mentor. The interviewees explained that a good mentor should be open not only to collaborate and support the student teacher but to new ideas and methods. Otherwise, there is a chance that the student teacher may consider his or her mentor as an inhibitory factor in his or her development:

> ...he did not trust me that I can do it on my own, and it was a practical training, so it was the time to try out things, to try out methods, I was not able to, this was the technical college. I was not able to try any open learning. (student teacher 1, Austria)

> "But at one school it was just a catastrophe, because the teacher, he really, I had to write down every sentence I should teach, say in the classroom, and he didn't show any, he didn't trust me that I can do it on my own, and it was a practical training, so it was the time to try out things, to try out methods, I wasn't able to, this was the technical college. I was not able to try any open learning. He was just standing in front of the classroom, really old-fashioned teaching. I could learn how I don't want to do it. (student teacher 1, Austria)

The interviewees did not talk a lot about their pupils, the interactions with them. In comparison, they mentioned more often their mentors, university professors, their own self as university students, which implies that student teachers during their practice are leaning towards the role of a student, and not towards the role of a teacher. The transition from the role of a student to the role of a teacher might start during the practice, but the involved actors (especially the mentor teacher and other actors at the practice school) have a significant influence.

Confrontation with the world of work

The school-based teaching practice within teacher education programmes can be considered as the first confrontation with the world of work – although student teachers have spent a lot of time in schools as pupils, in most of the cases the practice is the first time when they try out themselves as teachers. Therefore, the outcome of this experience has an influencing effect at least at the beginning of their professional career as teachers (Pesti et al., 2018).

When student teachers start teaching in the framework of their practice, the sensation might be overwhelming. In some cases, the age difference between the student teacher and his or her pupils are not ordinary, and this can influence the student teacher‘s feelings:

> And yeah, I was still a little bit insecure, you know I am a little girl, having to teach old men, electro technicians, in English, which is not their favourite subject. (student teacher 2, Austria)

Another important aspect that the interviewees draw the attention to is their preparedness for teaching. On the one hand, they might have doubts regarding their disciplinary preparedness, while on the other hand they also have to be aware of their teaching competence.

Another issue that the student teachers face during their school-based teaching practice is the establishment of connections between theory (what has been learnt at the university) and practice (what is possible to realise in a school/classroom environment) (Pesti et al., 2018).

> I think there is a big difference between what we learn at the university in some courses, not in all of them, but in some, and what is actually really possible at school. That is what I have experienced so far. (student teacher 2, Austria)

> Or we learnt so many methods to warm up or energisers, but I really don't think that there is time for this in a school. Maybe once a month, and it really depends on the subject, that is what I also believe. But for example little games, you know to do an energiser, I do not really think that there is time for this with 25 students in a classroom, and I do not know. (student teacher 2, Austria)

The school-based teaching practice, besides many other aims, plays a major part in contributing to student teachers' role transition (from a student to a teacher role). As described at the subchapter above dealing with the practice school, in order to ensure that the student teachers consider the practical experience as a real, professional development opportunity in the world of work and not only as another university task to fulfil, their teacher role should start unfolding during the practice. The way they are integrated into the practice school's life can have a significant role in this transition:

> But I know from other student teachers that they are not allowed to the teachers' room, and they were just kept outside, and they were waiting outside just like pupils at the school, so they never really felt as teachers. And at the university they expect you to make yourself familiar with the role of a teacher, and the transition from the role of a student to the role as a teacher. And it is really difficult if at the school you do not feel part of the teachers. (student teacher 1, Austria)

Theme 3: Research experience during the school-based teaching practice

<u>Preparation to conduct research</u>

The interviewees enlisted two major ways of the possibilities to learn about educational research in order to enable them to conduct their research projects during the school-based teaching practice: attending research-related courses at the university and transferring research competence gained during other research experience which is not necessarily focusing on education (Pesti et al., 2018).

Student teachers are expected to conduct various research projects during their school-based teaching practice. They are allowed to decide on the topic of the research, and in the framework of a university course, they get support from a university professor throughout this period (Pesti et al., 2018). However, this course is designed to support student teachers in their whole practical experience. Therefore the time available for discussing the research project is limited, and usually not enough (Pesti et al., 2018). Especially if, as the interviewees described, they had not had many research-related courses at the university where they could have learnt about social science research, trends in educational research, methods, etc.

> And it is a big problem because they expect you to do interviews, to describe how you work with data, and of course. I mean we learn how to write a paper, how to work scientifically, but with literature, not with our own data, our how to collect data. It is all new for us. (student teacher 2, Austria)

Some of the interviewees explained that they were involved as research group members in research projects conducted at their disciplinary departments (which were in both cases natural science departments). They described this involvement as a valuable experience because they could transfer some of the research competence gained during disciplinary research into their educational research project. However, it is important to emphasise that only a small number of student teachers have the chance to join research groups at the university (Pesti et al., 2018). Therefore this way of preparation for conducting educational research is somewhat accidental than systematic.

> I was actually really lucky because I came into a student job in March, here at the university, at a project group. I am doing research in the field of multilingualism in education, so in kindergartens and elementary schools, so I sort of learnt a few things being there. So, I learnt it from my colleagues, or my, you know, the boss in the project. So yeah, it is, so for me it was a bit easier because I have already conducted interviews and questionnaires before this project. But then it was new for me, and they did not really give me papers to read, they just instructed me, and the other students, that they took for the project group. (student teacher 2, Austria)

> Yeah, you know how to perform research to have some concepts at the end. You have to know what you have to do to get the results that you can use in the future. And you also have statistics, and that is why I like quantitative research more than qualitative. I

> am not really used to interviews. You can use them, not the methods that you use in natural sciences, but you can use the paradigms of good research, and I am sure that it is like that with all subjects. (student teacher 3, Austria)

Educational relevance of the research topics

As described above, student teachers can decide on the topic of their research projects. It is of key importance that they think of their research project as a meaningful task, that contributes to their development, therefore it would be reasonable that the topic of the research project, besides being in the scope of the interest of the student teachers, has some educational relevance and direct implications to the teaching practice (Pesti et al., 2018). One may question if student teachers are empowered to find such topics without being familiar with the general trends and methodological implications of educational research. The interviewees seemed to choose topics that are in their scope of interest and accessible (e.g., research on the use of Facebook, WhatsApp in schools, ICT infrastructure in schools), but the linking of the chosen topic to a relevant educational problem remained untackled in most of the cases (Pesti et al., 2018). However, when there is a link, it is based on student teachers‘ own experience:

> My partner and I chose to look at digital media, or technological gadgets at school because we both saw classrooms with a projector, but no computer, or laptop classes with not enough power sockets. Things like that, so that makes it a bit difficult. And we thought, okay, let's look into how many computers are actually in schools, what do the teachers, the students have to bring with them, and are they used during the lessons. (student teacher 2, Austria)

Further analysis of the interview transcripts has revealed that student teachers usually fail to see how the research projects conducted during their school-based teaching practice could contribute to their development as teachers.

> I thought that teaching is more helpful than doing a research project because I am not sure if the research projects really helped me to be a better teacher. So, you know we have a lot of seminar papers to write at the university anyway, and we do research there, and we always read the literature, you analyse it, it can be a book, literature, or in Geography, but I do not know. (student teacher 1, Austria)

However, when the topic of the research has a clear educational relevance and the student teachers succeed to reflect on their experience while conducting research, it may contribute to their development as teachers:

> What probably helped is this one small project where I tried to observe one student, and to try to find out where the difficulties are. Because you learn to see the problems, and to see if there are and where the problems are, and to see the different learning types of the students, so a research project that focuses on diagnostics are helpful. (student teacher 1, Austria)

Methodological considerations

The way student teachers think about research, in general, could influence the whole „conducting an educational research" experience during their school-based teaching practice. When asked what research is, the interviewees tended to stick to a purely scientific description of research.

> To me, research means having a question, or a problem I want to know more about. Then I do literature research, I look for articles and books and authors who write about this topic, and also you always need a working definition, for example international schools, you need to know what are international schools, how they are defined, and then you write down everything you got from your literature research, and then you do empirical work, for example, you need to use questionnaires, whatever, and then you analyse your empirical research, and then you combine it, you know, put it all together, in a final, or in one separate chapter, and you try to compare your findings with which has already been written in the literature. And then you just come to your conclusions. So that is what research means to me. (student teacher 1, Austria)

When it comes to methodological considerations, the educational background of the student teachers also plays an influencing role on their attitude towards educational research in general, and the research project conducted during the school-based teaching practice in particular (Pesti et al., 2018). Student teachers are encouraged to use qualitative approaches in their research projects. However, there seem to be numerous issues with this (Pesti et al., 2018):

- no preparation for conducting qualitative research at the university,
- qualitative research is not considered as „real research“ by student teachers with a natural science background,
- „bad blood“ between the university departments also affects the way student teachers think about educational research (since they spend more time on their disciplinary departments),
- student teachers fail the see the importance of educational research because in a lot of cases (especially when it comes to their research projects) these are small-scale projects with a little sample and no intention (or possibility) for generalisation or theory creation.

Among the methods for data collection, the interviewees enlisted interviews, questionnaires and observations as the most common methods, and the participants were usually their pupils and/or mentor teachers. Although student teachers are not restricted to work exclusively with these methods and participants, they tend to „play it safe“ and stick to these. Besides this, there is a possibility that, since it is not included in their curricula, they are not aware of other trends and methods in educational research (e.g., action research, classroom research, practitioner research, self-study) (Pesti et al., 2018).

Actors involved in the research project

Student teachers usually conduct their research projects individually. However, one interviewee mentioned that he collaborated with his peer, and the design of the research, as well as the data collection, were joint efforts. These kind of collaboration between student teachers are accidental; it has not offered them as an option when they are introduced with the research project requirement.

Regarding the participants who are involved in the data collection, from the interviewees‘ responses it became clear that the list of participants consists of pupils and mentor teachers. Moreover, having a look at the codes referring to other stakeholders involved in the research project, it revealed that the interviewees did not consider their research results being interesting or relevant for other stakeholders (Pesti et al., 2018).

When discussing actors, the practice school can have a prohibiting role, according to one interviewee:

> It is difficult, because many schools, they do not allow student teachers to do that, because they say that they should not be allowed to interview. And it is an issue with the parents, do you have to get, you know I had to sign an agreement, and that is what I did not do, so there is a grey area. (student teacher 1, Austria)

4.2.2.2 Group interviews

Having the group interviews coded, seven themes emerged: research from student teachers' point of view, preparation for conducting research, methodological considerations, university's influence on research, school's influence on research, student teachers' learning through research, and educational relevance of research conducted by student teachers. In each of the seven main themes, several sub-themes could be formulated based on the codes grouped into categories. The results are presented according to the main themes, and within that according to the sub-themes.

Theme 1. Research from student teachers' point of view

Two major viewpoints have emerged from the data collected by group interviews. One group of student teachers have a strict, rigorous definition of research, their attitude is more influenced by their disciplinary studies, and they are less open to educational research. The following quote snippets illustrate the opinion of this group of student teachers.

> I have the pure scientific definition of research. (group 1 of student teachers, Austria)

> I think researching literature is a good idea, of course, talk to other people as well, and look at the literature what it says, but conducting a study of yourself either if it's a really small scale, and then I'm not sure if it really helps me, or I do it a big scale, but then I have to spend a lot of time just on that. I am pretty sure I will not have all the time. (group 1 of student teachers, Austria)

> If I had a problem teaching, before I go to the literature, which is often a really big problem for me, made by a psychologist, I would go to another teacher and ask for help. That is the situation here that they are actually psychologist telling us how to teach. They even haven't been in class, and sometimes you ask them something, how can I deal with something, and they are like well you could try this, but it is not like, you

know, experienced information that you get from them. I will go to another teacher to ask them for help. That is my opinion. (group 1 of student teachers, Austria)

The other group of students think about research in a broader sense, their definition of research is more problem-focused, they seem to be more open to educational research. The following quote snippets illustrate the opinion of this group of student teachers.

Yes, if something does not work the way I feel it should work, I should think about it and research it. Because if it does not work, there is a problem. And you have to find the problem. (group 1 of student teachers, Austria)

So, you have to make a study to explore the problems. (group 2 of student teachers, Austria)

You are a university student, and you should have to base your teaching on scientific background, on science, and you should not just do something, and think that yeah, that is the right way to do it. You should prove that that is a good way to do it. (group 1 of student teachers, Austria)

Theme 2. Preparation for conducting research

When discussing the different ways of preparation for conducting research during the practicum, the interviewees mentioned three categories: relying on previous research experience, university-based preparation (distinguishing disciplinary- and educational-related), and individual preparation. The following quote snippets illustrate the manner student teachers described their preparation for conducting research:

- when they rely on previous research experience:

  I do have a scientific background. I am a biologist. I worked on my master thesis, a scientific project, we did research in the Alps. And I also stayed in the project to work on other topics, and I have the pure scientific definition of research. (group 1 of student teachers, Austria)

  I worked in a summer school, and there the kids had to fill out a survey at the end of the course, after four weeks, but it was not always very easy, because they are 12 years old, and they did not really understand the questions. I did not write the

questions; it was from the Institute, so sometimes there were very bad results because they did not know what the questions meant. I had to explain the question, then they answered. So, I do not think it was a very good survey. (group 1 of student teachers, Austria)

- when they rely on university-based preparation:

  In Geography we first had a course about scientific working, and there are also a few lectures you can choose by your own, for me, it was an empirical social science, there I learnt to do the empirical research. (group 2 of student teachers, Austria)

  Both, so we have seen examples, and we should also learn how to do it, and then in the practical training we had to do with ourselves. For example, that is what we were supposed to do in the first practical training, like observe a student and write a vignette about him/her. (group 2 of student teachers, Austria)

  I think we are not really prepared. So, to cope with it, it is just extra time. (group 1 of student teachers, Austria)

  I had one course, the professor showed us how we could do an interview. That was really good. I chose that because I wanted to do that, it was an elective course. (group 4 of student teachers, Austria)

- when they rely on individual preparation:

  But mostly you have to find out how to do proper research, like quoting, paraphrasing. Sometimes it is included in the course. It depends on the lecturer. (group 2 of student teachers, Austria)

  It is learning by doing. (group 4 of student teachers, Austria)

  When I have to do research for a special topic, the first thing is that I write the topic to Google and see what is there. (group 4 of student teachers, Austria)

  Or we ask other students, what are their experiences. (group 4 of student teachers, Austria)

Theme 3. Methodological considerations

The interviewees seemed to be aware of the different research approaches, when talking about their research experience, they distinguished qualitative and quantitative approaches:

> And they want us to do qualitative research, and that was not really my plan. (group 1 of student teachers, Austria)

> But for the results of the research questions, the papers, I did not use any statistics, so I do not have any knowledge of quantitative research. (group 2 of student teachers, Austria)

Regarding the choice of data collection methods, the interviewed student teachers mentioned observations (followed by writing a vignette about it), questionnaires and interviews. The interviewees did not mention conducting their research projects during the practicum in collaboration with their peers or mentor teachers. Moreover, one student teacher even emphasised that they do it alone.

Theme 4. University's influence on research

The university's influence on student teachers' competence development and attitudes towards research can be observed in two major forms. In the first form student teachers are mostly considered as the audience, the consumers of research, they remain in a passive role, and it is manifested in university staff presenting, integrating their research projects and results into their teaching. A disadvantage that a few interviewees mentioned is that in many instances the university staff do not connect their research projects to education, schools, so student teachers fail to see its relevance in their preparation.

> And in sports, we hear about a lot of research, but we cannot really use that in school. (group 1 of student teachers, Austria)

> In biology, most of our teachers or university teachers, they do not teach in schools, they talk about their own research, but it has nothing to do with schools. (group 1 of student teachers, Austria)

Moreover, some interviewees explained that they did not have the opportunity to discuss their lecturers' research projects and results that were presented during the courses for various reasons that are illustrated with the following quote snippets:

> And we have to learn them and use them. It is not really discussed, because it is their work and they decide if you get a positive or a negative mark. You do not really challenge them in their own papers because they are proud of them. (group 1 of student teachers, Austria)

The second form how university staff can influence student teachers' competence development and attitudes towards research is to actively engage them in research activities, where they are not only consumers but producers of knowledge. It seems to be important that the student teachers have a clear idea why specific research-related activities are relevant, because, without this, they may be resistant to the activity:

> I did not see the big picture of why the university chose this type of project, because everyone was against it: the schools, the headmasters, the teachers. So, I was questioning why we needed to do that. (group 1 of student teachers, Austria)

One way to engage students is to integrate research-related activities, tasks, deliverables in the courses (this is further elaborated in Theme 6. and Theme 7.), while the other way might be to involve them in university staffs' research. The interviewed student teachers either explained that they did not have the opportunity to engage in research projects with the university staff or cases when they did, it was mostly with their disciplinary departments. The following quote snippets illustrate how the interviewees described their involvement in various university-based research projects.

> Yes. In the Institute for Sports. We do it a lot. We learnt different ways to measure things and also questionnaires, lots of them and online questionnaires, and also testing pupils in primary schools in sports. (group 1 of student teachers, Austria)

> We, at my institute, now make a citizen science project for schools for an example, but now it is a little bit too big to explain, but we try to get teachers from schools, show them our opinions, give them the tools, so that they can do it with the students in the

> school, and they try to analyse the data on their own, and we support them. (group 2 of student teachers, Austria)
>
> In one course we even have to do the transcriptions for the interviews she or one of her interns conducted. And I also heard that about other courses, so that happens quite regularly. Free student work. (group 2 of student teachers, Austria)

Theme 5. School's influence on research

The data of the of the group interviews have revealed that the schools where student teachers conduct their practice and are also required to do some kind of a research-related activity in many instances play a hindering role, mostly because the schools and the university are not on the same page regarding research-related activities.

> I was not allowed to do research there. They said that if you want to do it, we need to check it first with the [Landesschulerad], so first with them, and then they need to check if it is okay with the law, and then go back, and then we will see. (group 2 of student teachers, Austria)
>
> To be honest, at least in those school where I went to, they do not really support what is going on here. They do not support research because they say there are so many students and they all need to do it, they come every year and it is the same. It is somehow getting on their nerves. And it is always a problem sometimes with the law. I have the feeling that they do not support it. They say okay, because we have to do it, and they feel sorry for us because if they say no then what can we do? We will have a problem. So, they feel sorry for us, but they also told me that you could let them know at the university that they don't support what they are doing here. (group 2 of student teachers, Austria)
>
> The university tells you to do this and that, and then when you go to the school for the first time as a student, the manager tells you that you are not allowed to do that, what are you thinking. It is against the rules. (group 4 of student teachers, Austria)

However, one interviewee mentioned a school-university project focusing on pupils' research projects, and this illustrates that the collaboration between the two worlds (universities and schools) can be an excellent learning experience for the involved participants.

> At the school where I did my practice, there was a project called Sparking Science. Maybe you know it. It is a project where schools and universities cooperate, and the students in the school learn the work of researchers, and the school where I was had a project, and this goes on for two years, and for these two years the university work with the students, and I can cooperate on some project days with them. (group 4 of student teachers, Austria)

Theme 6. Student teachers' learning through research

Student teachers' learning through research is influenced by the gap between theory and practice – in many instances they experience that the research results they hear about from the university staff is far from the school context. The following quote snippets intend to illustrate this:

> There is one person in our department, and he talks a lot about his version of teaching, and he also developed the school book, and we talked about that, the differences, the examples that he uses and other school books use. And for me it was very important and interesting part, but sometimes I don't really agree, or I cannot really agree with the way he thinks students learn, because he is very deep in the topic and he knows it very well, so for him it is clear, it is easy to understand. I do not think it is always that way, but sometimes he is very right, but that is the problem, you cannot really integrate it, because we have guidelines for teaching that the Ministry gives us, so it is not really the same thing. (group 1 of student teachers, Austria)

> Most people who are like this is how you have to do with, and not like that, are people who never taught themselves, so they do not have the practical experience themselves. (group 1 of student teachers, Austria)

> Personally, I only like to read articles that give some practical advice. I hate to read articles that are only about theory, and then I am left alone. Okay, thank you for that, but basically thanks for nothing. They need to give some practical advice. (group 2 of student teachers, Austria)

> But often research and teaching is not the same, and maybe it is actually the topic of your PhD thesis because teachers don't have time to do research and therefore people here at the University who often never go to school, they do the research, and then we

> have the research, the theoretical part, that is not linked to practical. (group 2 of student teachers, Austria)

Despite the gap between theory and practice, student teachers realize that research-related activities could be turned into learning opportunities ("It's about learning on your own, self-directed learning." (group 1 of student teachers, Austria)), and in some instances the interviewees use the research project conducted during the practicum not only to link theory to practice but to bridge their two subjects as well:

> Because [name] says that you should bridge the languages, for example. I study two languages for an example, English and Italian, and I realised while writing this research paper that I can really link them in school. (group 2 of student teachers, Austria)

The interviewees identified three main forms of learning through research, and these are reading educational research, discussing educational research and conducting educational research. As the following code snippets illustrate it, three main issues were emphasised by the interviewees:

- the readings shall be practice-centred

  > Personally, I only like to read articles that give some practical advice. I hate to read articles that are only about theory, and then I am left alone. Okay, thank you for that, but basically thanks for nothing. They need to give some practical advice. (group 2 of student teachers, Austria)

- reading educational research may help student teachers in identifying a meaningful, relevant research topic for their practicum

  > I did a project because I read before a paper about experiments in the classrooms. It was quite controversial because many experts say that the outcome is not that high so that some people think that. I wanted to try how the students saw the topic and related to their answers build my own opinion. (group 2 of student teachers, Austria)

- the list of mandatory/proposed readings shall cover a broad spectrum of viewpoints

> A few, but not so much, especially here at the ILS, it is always the texts of [name], [name], you came really often in touch with their papers. I think you should read from everyone. (group 2 of student teachers, Austria)

There were fewer instances when the interviewees mentioned the activity of discussing educational research with their lecturers and peers than reading research papers. However, those few instances when they did mention it have revealed that on the one hand, the type of course (lecture or seminar) is of great influence on students‘ engagement and practical-orientation of the discussions.

> And if it is the type of course, if it is just a lecture you do not engage with them as a person. If it is a seminar, you got to talk more to them you get to find out more about the research they do, and sometimes they really tell you specifically how you could do this scientific method in an easy way into the school and get results. (group 1 of student teachers, Austria)

The third form of learning through research mentioned by the interviewees is conducting research themselves, but this issue is further elaborated under Theme 7.

Theme 7. Educational relevance of research conducted by student teachers

The interviewed student teachers explained that one way or another, they had conducted research of different scales during their studies, and although in some instances these research projects were more discipline-related, during their school-based practicum all of them conducted an educational research project. Based on the interviews, student teachers' interest that is based on personal experiences seems to be the dominant driving force not only in deciding on the research topic but throughout the research project as well. The following quote snippets illustrate the diverse research interests of the interviewees.

> For me, it is very important because I love grammar. I had a feeling at the university that they basically told us that you should not really teach grammar anymore, but I said that I would teach grammar, but you can do it in a different way. And I try to find the different way. What is really going on in schools? And I also wanted to know the methods students prefer, because that is important. It does not matter if, you come from

> the university, and you say that that is the way we are doing it now because that is what I learned at the university, but they all hate it. (group 2 of student teachers, Austria)
>
> At my practicum I had, the first time I came in contact with children who have problems with writing and reading, so I wanted to find out how I can help these kids in Geography, so outside the language. I think it is important because reading and writing are the most important for learning. (group 2 of student teachers, Austria)
>
> Personal interest, because for an example I do not know how grading will be like. I want to grade my students, and I also want to find out what my students think. Do they want grades, or would they prefer if there would be no grades at all? The results are split, some need grades in order to have pressure to study, but some others do not like them, and others would say I would prefer school without grades. (group 2 of student teachers, Austria)
>
> I saw that my sister is learning through WhatsApp with her classmates, voice messages and pictures of their Math home works, and that is why I wanted to ask if they wish to communicate with teachers. (group 2 of student teachers, Austria)

Besides their interest, the choice of a research topic, as explained by an interviewee might be influenced by student teachers' teaching endeavours to be innovative („Exactly, to teach in an innovative way I think sometimes we need to do research, it is not just in the school book or something like that." (group 1 of student teachers, Austria)), by being involved in university projects, and by reading about and discussing research with their lecturers.

The educational relevance of student teachers' research activities is mostly related directly to their students: the research aims to understand, help, improve, change something related firstly to their students (and secondly to teachers), their learning. Some of the quote snippets above contain examples, but the following ones also illustrate this:

> I tried to find out if experiments in the class helped the students to learn something new, or to help to try to connect to the theory, that is the theory in real life. (group 2 of student teachers, Austria)
>
> My research project was related to assessment, to the grading system so with the students and the teachers, what they think about the grades, are they necessary. (group 2 of student teachers, Austria)

> My project was about the correct writing in Geography and Mathematics, so outside of the languages. And how teachers give help to those kids who have problems with correct writing and reading. (group 2 of student teachers, Austria)

> But the last project I did, it was really helpful for me, for myself, for my future self, because the topic was about inquiring questions, and I think it helped me, and also the pupil because I think I got a better understanding of how I create my questions for them, so that I can understand them better. (group 4 of student teachers, Austria)

Some of the interviewees talked about the results of their research projects as well. As the research project was a course deliverable and a requirement by their ITE programme, they had to present the results within the framework of university courses, and they got feedback from their peers and/or lecturers. However, it has been revealed that there is no formal way of channelling back the research results to the schools/classes where the projects were conducted, and even if it happened sometimes, it seemed to be due to the mentor teacher's interest.

Based on their own experiences, the interviewed student teachers formed their general opinion about the relevance of educational research. They see its relevance mostly in being problem-oriented, and as a way of self- and school improvement, however, as the last quote illustrates it, they do not see examples or role models of in-service teachers doing research:

> I think it is quite necessary because when you have to improve something in a school, you need to know what to improve in the organisation. You need to say that that is not good enough for our standards, let's make something different. And sometimes people say they want something different, but they do not know in particular what they want. So, you have to make a study to explore the problems. (group 2 of student teachers, Austria)

> In general, it is important for teachers, because you read publications, you get to know new methods, what is happening, what changes. (group 2 of student teachers, Austria)

> It might be a good way to improve, but I do not know lots of people who would want to do that. (group 1 of student teachers, Austria)

> It might be a good way to improve, but I do not know lots of people who would want to do that. (group 1 of student teachers, Austria)

Chapter summary - The case of the Austrian university

This subchapter has dealt with the case of the Austrian university, firstly by exploring the findings of the document analysis of initial teacher education programmes, both from the pre-reform system (MA programme) and the current system (undivided programme), and then by the introduction of themes that emerged from the interviews from the pilot phase and group interviews with student teachers. These findings are further discussed in Chapter 5.

5. Discussion

Chapter preview

In this chapter, I intend to present the discussion of the findings. I follow the same basic structure as in the Findings chapter by presenting the discussion divided into the two cases (the case of the Hungarian university and the case of the Austrian university). Firstly, in each case, I elaborate on the changes in initial teacher education programmes by comparing the previous and the current initial teacher education programmes. Then I proceed to elaborate on the integration of research into ITE programmes, that is the teaching-research nexus by using the framework presented in the Summary of the Literature Review. In this part, I rely on the four quadrants of the teaching-research nexus (research-led, research-oriented, research-tutored, research-based) as described in the model by Healey and Jenkins (2009).

5.1 Case of the Hungarian university

5.1.1 The characteristics of and changes in ITE programme regarding the educational preparation courses

The system of initial teacher education in Hungary has faced some major changes in the past decades. In a short period, the teacher education was reformed two times: first, by introducing the Bologna system, initial teacher education was raised to the master level, meaning that students finishing their disciplinary bachelor studies could enrol into ITE programmes. Their preparation lasted for five semesters, including one semester of practicum. This divided structure of initial teacher education "was strongly criticized by professionals and teacher educators: after the completion of the master studies, only a few chose the teaching profession, and those who did it were often criticized because of the lack in their disciplinary (deficiencies in preparation for the minor discipline), as well as their pedagogical preparation. Contradicting this, the academic sphere criticised the increased credit burden for the pedagogical-psychological preparation (Hunyadi, 2010; Pukánszky, 2013). Moreover, some natural science departments blamed the introduction of the Bologna system when their number of students had drastically decreased (Tél, 2010)." (Pesti et al., 2016)

"In 2013 the system of initial teacher education was restored to the undivided system (as it was before the Bologna-type system). Today, in this undivided system students are obliged to choose two major disciplines, their pedagogical and psychological preparation occurs dominantly in the first three years, and the duration of the school-based teaching practice was increased to two semesters (occurring at the very end of the programme). This change has brought new challenges, such as: (1) the rapid, forced introduction of the undivided system was not preceded by the necessary consultation and dialogue between policy makers, teacher educators and professionals; (2) the new structure did not eliminate the gap between the disciplinary and pedagogical courses, therefore collaboration between these departments is not common, even though it would have a positive effect on the implementation of teacher education programmes; (3) it is still difficult to take into account the needs of students with different prior preparation, as well as to support individual learning paths; and finally (4) the placement of school-based teaching practice in teacher education programmes can be considered a major issue – since it is the very last phase of the teacher education programmes, it does not have a professional orientation or introductory nature, and in this manner it does not strengthens the connection between theory and practice." (Pesti et al., 2016)

"The most controversial elements of the changes are the altered ratios of training programmes, more specifically the decrease of the pedagogical and psychological preparation, the introduction of the aptitude test, and the changing system of practice (Rapos & Kopp, 2015). Regarding these processes, the institutions providing teacher education had autonomy in the development of their training programmes; therefore they had the chance to take into consideration their traditions and local needs in the development process." (Pesti et al., 2016)

The overview of the findings emerging from the document analysis of the pedagogical-psychological modules' course description from ITE programmes through a comparative pair of lenses (Appendices 6., 7. and 8.) also has several implications. Although the duration of ITE was increased from 5 semesters to 10-12 semesters, the number of courses in the analysed pedagogical-psychological modules are almost the same. Moreover, in the undivided programme there are less pedagogical and more psychological courses, suggesting that the programme developers turn towards preparing student teachers handling issues emerging from the continually changing social environment (e.g., interculturalism, drop-outs, etc.) (OECD, 2003; McKenzie et al., 2005; ATEE, 2006). However, on the other hand leaving the practicum at the end of the ITE programme, even though it has been increased from 1 to 2 semesters, far

from the pedagogical-psychological preparation that occurs mostly at the beginning of the programme, raises questions on the relationship of theory and practice.

5.1.2 Research in ITE programmes

As student teachers' learning when in schools can be described as an organized informal learning, and due to the premise that practicum, although it forms a bounded component of initial teacher education programmes is strongly influenced by other components of the programme occurring prior to it, hereby I do not restrict the discussion merely to the practicum, but I include those courses of the pedagogical-psychological modules, too, that lead the way to the practicum. The adaptation of the teaching-research nexus model as introduced in the Literature Review chapter's Summary section will be used here as scaffolding for the discussion; therefore the findings will be discussed according to the four quadrants (research-led, research-oriented, research-tutored and research-based).

According to Healey and Jenkins (2009), the *research-led* type of integration of teaching and research puts the teacher in focus, students act as the audience, and the research content is emphasised over the research process and problems. Griffiths (2004) described this quadrant as "students learn about research findings, the curriculum content is dominated by staff research interests, and information transmission is the main teaching mode" (p. 3). Many courses seem to fall into this quadrant since about one-third of the courses are of a lecture type. University courses shall support student teachers in realising the relevance of educational research by providing learning opportunities where the research findings and the content, even if it is dominated by staff research interest, are related to education and practice. However, as student teachers "just want to survive" the practicum, during their initial teacher education they prefer those courses and lecturers, who manage to present research findings from a practical, useful aspect.

The *research-oriented* quadrant is still teacher-focused, and students act as the audience, but the research process and problems are emphasised over the research content (Healey & Jenkins, 2009). In this quadrant "students learn about research processes, the curriculum emphasises as much the processes by which knowledge is produced as learning knowledge that has been achieved, and staff try to engender a research ethos through their teaching" (Griffiths, 2004, p. 3). Although numbers show a decrease in research-related content when analysing the course descriptions of the "old" MA and the "new" undivided programmes,

the latter one emphasises the evidence-based approach on the programme level, and there is a suggestion that this shall apply to all courses. However, the lack of identifying ways of implementation of this evidence-based approach on the level of course descriptions implies that is up to the lecturers how they interpret and implement their courses in an evidence-based manner.

It can also be concluded that although there are endeavours to integrate research into teaching, the lack of research methodology courses underpins the strong presence of this quadrant's characteristics. Student teachers explained that when they are required to do research-related tasks in schools within the framework of some courses, the university lecturers briefly introduce the topic, mostly focusing on data collection methods. This results in an ad-hoc way of preparation for research and is highly likely that student teachers will miss seeing the "big picture", to develop a comprehensive understanding of research, and to recognise the relevance of educational research. Some student teachers also saw this as an issue of lack in formal preparation and support to do the empirical part of their thesis.

As a consequence of the issues mentioned in the previous paragraph, results show that student teachers reported on conducting small-scale research projects, failing to see their relevance, therefore failing to establish the connection between theory and practice. Moreover, the repertoire of student teachers' methodological palette seems to be restricted to interviews and questionnaires, and although there are numerous mentions of conducting observations, this method is mostly considered as a preparation for teaching and not as a research method.

Healey and Jenkins (2009) described the *research-tutored* quadrant as student-focused, where students are active participants, and where research content is emphasised over research process and problems. According to Griffiths (2004), this is the quadrant where "students' writing and discussing papers or essays is emphasised" (p. 3). Although results have revealed that in the old programme there was one course where student teachers were expected to write about research, and the new programme also indicates that student teachers shall engage in discussions about research, the number of courses indicating these activities is very low.

The *research-based* quadrant puts the students as active participants in the focus, and the research process and problems are emphasised over research content. This is the quadrant where "students learn as researchers, the curriculum is largely designed around inquiry-based activities, and the division of roles between teacher and student is minimised" (Griffiths, 2004, p. 3). Although student teachers are expected to do some kind of research, the distribution of

courses over the new study programme might not support this. The previously mentioned gap between theory and practice returns: most of the pedagogical-psychological module's courses are planned way before the practice. On the one hand, this means that what student teachers learn at the university can be tried out in practice at one point, but on the other hand the lack of a research methodology course and the fragmentation of learning about different research methods in different courses may hinder student teachers from getting a comprehensive overview of research.

Having a look at the research-related competences indicated in course descriptions, in general, these competences have gained significance: there are more than twice as many course descriptions that included any of the research-related knowledge, skills and/ or attitude components in the new programme than in the old one. However, bearing in mind that in Hungary programme developers are required to include a number of competence items in their course descriptions as defined in the document of Training and Outcome Requirements, and since other parts of the course descriptions (such as the content, goals, or student activities) are not in align with this, raises the question if these competences are really subject of development within the course, or their presence in the course descriptions remains formal.

5.2 Case of the Austrian university

5.2.1 The characteristics of and changes in ITE programme regarding the educational preparation courses

The system of ITE in Austria also faced a major reform recently: from 2015 teacher education programmes are offered in a Bologna-conform system, meaning that students who would like to become teachers on ISCED level 3 shall enrol into a 4-year long bachelor and then a 2-year long master programme. The introduction of the so-called new teacher education system has significant implications for the educational preparation of student teachers as well. For example, the relationship of theory and practice is strengthened by the increased number of practicums – in implementation, this means that many theoretical courses are either followed by or conducted simultaneously with a corresponding practicum.

Darling-Hammond (2006) has identified three critical components of effective teacher education programme design, and these are the tight coherence and integration between the

different type of courses, supervised clinical work integrated with coursework, and proactive relationship with schools for ensuring a diverse learner base and for developing and modelling good teaching. The analysis of the two teacher education programmes including the course descriptions has revealed that the designers of these programmes have made efforts to follow the international trends, however, despite the progressive reform of 2015 on the national, systemic level, some of the traditional features of teacher education are still present (Schratz, 2018):

- too bureaucratic,
- strongly regulated in detail,
- hierarchically organised,
- lack of output orientation,
- too many actors,
- too many parallel structures, and
- too little congruence in task-orientation and responsibility.

The overview of the findings emerging from the document analysis of the educational studies modules' course description from ITE programmes through a comparative pair of lenses (Appendices 9.,10 and 11.) With the increase of the overall length of teacher education from a nine semester long undivided programme to bachelor and master studies lasting for 12 semesters in case of higher secondary school student teachers, the number of courses in the educational studies module was also increased from 11 to 17.

5.2.2 Research in ITE programmes

As student teachers' learning when in schools can be described as an organized informal learning, and due to the premise that practicum, although it forms a bounded component of initial teacher education programmes is strongly influenced by other components of the programme occurring prior to it, hereby I do not restrict the discussion merely to the practicum, but I include those courses of the pedagogical-psychological modules, too, that lead the way to the practicum. The adaptation of the teaching-research nexus model as introduced in the Literature Review chapter's Summary section will be used here as scaffolding for the

discussion; therefore the findings will be discussed according to the four quadrants (research-led, research-oriented, research-tutored and research-based).

According to Healey and Jenkins (2009), the *research-led* type of integration of teaching and research puts the teacher in focus, students act as the audience, and the research content is emphasised over the research process and problems. Griffiths (2004) described this quadrant as "students learn about research findings, the curriculum content is dominated by staff research interests, and information transmission is the main teaching mode" (p. 3). Numerous courses can be characterised as research-led due to the ratio of lecture-type courses. However, as the proposed literature list is not included in the course descriptions, nor the programme suggests that the lecturers decide on this based on their own opinion and share it with the student teachers in other forms than the course description. Although this gives space for lecturers to be flexible with proposed literature, on the on hand we cannot say if they incorporate their research findings in their teaching by proposing their research articles, and on the other hand, maybe even more importantly, it is difficult to have a comprehensive overview of the literature-base proposed to student teachers throughout the programme (e.g., it is not visible if there are unnecessary repetitions or missing literature). Then, similarly to the Hungarian case, university courses shall support student teachers in realising the relevance of educational research by providing learning opportunities where the research findings and the content, even if it is dominated by staff research interest, are related to education and practice. However, as student teachers "just want to survive" the practicum, during their initial teacher education they prefer those courses and lecturers, who manage to present research findings from a practical, useful aspect.

The *research-oriented* quadrant is still teacher-focused, and students act as the audience, but the research process and problems are emphasised over the research content (Healey & Jenkins, 2009). In this quadrant "students learn about research processes, the curriculum emphasises as much the processes by which knowledge is produced as learning knowledge that has been achieved, and staff try to engender a research ethos through their teaching" (Griffiths, 2004, p. 3). Research-related process and problems are indicated in about half of the courses, and there is an elective course on research methodology. When the students are required to do a research-related task in a school within the framework of a course, the university lecturer briefly introduces the topic, mostly focusing on data collection methods. Similarly to the Hungarian case, this may lead to difficulties in recognising the relevance of educational research. Moreover, there is another similarity with the Hungarian case: the

methodological palette of student teachers mostly consists of interviews and questionnaires. Although some student teachers report on the acceptance of the relevance of educational research to practice, in many instances they do not consider those research projects that they conduct relevant.

Healey and Jenkins (2009) described the *research-tutored* quadrant as student-focused, where students are active participants, and where research content is emphasised over research process and problems. According to Griffiths (2004), this is the quadrant where "students' writing and discussing papers or essays is emphasised" (p. 3). Having the two teacher education programmes analysed, it became clear that the aspects of this quadrant, more specifically course description elements focusing on student teachers writing about and discussing research have become more explicitly defined, and this implies that the programme developers acknowledge the importance of these in teacher preparation. However, the interviews with student teachers suggest that sometimes these discussions about research are restricted to the lecturers' research projects; therefore the interviewees expressed a need for discussing research in a broader, international context.

The *research-based* quadrant puts the students as active participants in the focus, and the research process and problems are emphasised over research content. This is the quadrant where "students learn as researchers, the curriculum is largely designed around inquiry-based activities, and the division of roles between teacher and student is minimised" (Griffiths, 2004, p. 3). The structure of the new, Bologna-conform programme that has strengthened the relationship between theory and practice is a suitable structure for implementing research-based teacher education – every module (a group of university courses) has a related practicum, and the analysis of the course descriptions also suggest that the programme developers made efforts to create a programme that is research-based, e.g., by defining course deliverables and activities such as observations and reflections, research projects, data acquisition, familiarization with the school as a research field, etc. Although there are courses available for student teachers throughout the semesters when they conduct their practicums and implement their research projects, these courses are designed to support student teachers in their whole practical experience. Therefore the time available for discussing the research project is limited, and usually not enough (Pesti et al., 2018).

Moreover, it is more common that student teachers are involved in research projects, research groups within their disciplinary departments, and they value this experience (they can transfer some of the research competences gained during disciplinary research into their

educational research project). However, this is not an intended learning opportunity planned on the programme level, it is more ad-hoc. Moreover, there seem to be vast differences between the different disciplinary departments, not only in the extent of involvement of student teachers into research projects and the work of research groups, but in shaping their attitude towards educational research (e.g., student teachers from a natural science background prefer quantitative research, and they are not open to educational research).

The course descriptions do not include competences, but these are defined on the programme level. Although this helps the readers envision what competences are emphasised, it remains invisible how (through which courses, activities, etc.) the development of these competences happens.

5.3 Answering the research questions

What are the characteristics of the pedagogical-psychological courses and the practicum in ITE programmes?

It is important to highlight that major reforms were going on in both countries regarding initial teacher education. More surprisingly, these reforms were somehow each other's opposites. In Hungary after a few years of having a Bologna type of teacher education (in the form of master programmes that were built on disciplinary bachelor programmes), it has been restored to the so-called undivided, or long cycle system, while in Austria the Bologna-conform system was just adapted. Present research looked at two programmes from both countries: one from before the reform, and a current one in order to grasp the changes, the shifts of emphasis in the development of teacher education programmes.

In Hungary, the presence of research-related competences in course descriptions is more dominant in the undivided programme than before. Moreover, the undivided programme urges that courses shall be evidence-based. However, this evidence-based approach is less visible in other elements of the course descriptions, such as the activities or contents. In the Austrian programmes, the course descriptions were very structured but not as detailed as in the Hungarian ones. In the new teacher education programme, there is a distinctive research methodology course that is based on student teachers' research projects. The competences that

student teachers shall acquire are defined on module levels, so it is not visible which ones individual courses focus on and how these are developed.

To summarise the findings, in both countries we can observe a shift towards research-based teacher education based on analysing the pedagogical-psychological courses (as they are referred to in the Hungarian programmes), or the educational studies module (as they are referred to in the Austrian programmes). Literature suggests that the four quadrants of the teaching-research integration (Healey & Jenkins, 2009) can be arranged in a linear way to track the shift towards research-based education. In this way, the findings revealed that the characteristics of research-led and research-tutored quadrants are easy to grasp, and there is evidence of a shift towards becoming research based. However, the research-oriented quadrant seems to be a missing link, and if we think back that this quadrant is where student teachers shall be empowered methodology-wise to conduct research, it is questionable if research-based teacher education can be achieved without paying more attention to the research-oriented quadrant.

How does the practicum in ITE programmes contribute to the development of competences required for conducting practice-oriented research in the participating countries?

Since there is a little number of research methodology courses (or in some instances none) in the studied ITE programmes, the development of research-related competences happens in the frame of other courses. Menter and his colleagues in the literature review on teacher education in the 21st century observed four different conceptions of teacher professionalism that underlies policy and literature, therefore influences teacher education in general (Mener et al., 2010). These four paradigms are the effective teacher, the reflective teacher, the enquiring teacher and the transformative teacher. Although these four paradigms can co-exist, having analysed a teacher education programmes and talked to student teachers, it became clear that the paradigm of the reflective teacher is the dominant one, especially in Hungary. As stated earlier that a shift towards research-based teacher education can be observed, one may arrive at a conclusion that a shift towards envisioning an enquiring teacher can also be observed on the programme level, but when it boils down to the everyday practice of teacher education, according to the analysed programmes, and especially the student

teachers involved in the research, teacher education in the two cases is still closer to the reflective teacher paradigm.

What are the experiences of student teachers regarding practice-oriented research?

Student teachers experiences regarding practice-oriented research are surprisingly similar in the two countries; maybe just the accents are on different aspects.

All the interviewees had conducted some kind of research-related activities when they went to a school for a practicum, but in many instances they do not consider these activities research or inquiry, for a lot of them it was just a task, and they failed to channel the results or lessons learnt back to their learning. This can be because students are not prepared to conduct research, they do not see the big picture or the relevance of educational research. In Austria, it became evident how big influence the departments have on student teachers' attitude towards educational research. Students becoming teachers of one or two natural sciences are much strongly related to those departments, and by the time they get to the educational studies, they have an extreme and mostly rejective attitude towards educational research.

In general, it can be concluded that student teachers hear about their teacher educators' research, but it is difficult for them to connect it to their practice. However, student teachers in both countries reported the lack of preparation to conduct research and looking at the methods they chose for their small-scale research projects, or their subjects, we may arrive at the same conclusion that the research-oriented quadrant is the missing link. So, besides the hackneyed things, such as "let's do a questionnaire with pupils at the beginning of my practicum and in the end of it", or "let's make an interview with another teacher at the school" student teachers do not seem to have the methodological repertoire to make inquiries into their practice.

Conclusions

Overview of the doctoral (PhD) thesis

The McKinsey Report (2007), saying that the quality and effectiveness of an education system cannot exceed the quality of the teacher labour force has significantly influenced the international discourse and trends on education and teacher education in the past decade. Countless studies have tackled the issue from different perspectives and on different levels, however, the gap between educational research, educational practice and educational policymaking, as the key educational actors that could contribute to quality education (and quality teacher education), still awaits to be closed or at least mitigated. Dewey wrote about the gap between research and practice decades ago, and he argued that the creation of systematic methods of inquiry into educational practices is the key to empower teachers to understand education in a more profound manner, to have more organized control over it, and to flourish the growth of intelligence (Seals, 2004).

The traditional model and the rigorous interpretation of scientific research that is expert-led, peer-reviewed and where dissemination is a top-down process has not contributed to the acceptance of educational research in schools. Hargreaves (1999) urges a new model, where the practitioners, the teachers, the educators are at the centre of the knowledge creation process. In order to support perspective pupils' effective learning in the 21st century, as well as their professional development throughout their career, student teachers should familiarise themselves with research in education (Munthe & Rogne, 2015).

Having these said, the overall aim of the research is to reveal the role of practicum in initial teacher education programmes in developing student teachers' competences and preparing them for conducting practice-oriented research in the cases of two universities from Hungary and Austria. These two countries are of a special interested in respect of recent reforms: despite sharing a common historical background as the Austro-Hungarian Empire, these days the general trends in the two perspectives countries' teacher education systems on a structural level are the opposite of each other. Besides exploring these structural changes and characteristics of teacher education programmes by the method of document analysis, student teachers of these programmes were involved in interviews and group interviews in order to explore their experiences. Even though there is existing literature on the concept of „teachers as researchers" and its importance regarding student teachers' learning, there is little known

about whether the use of inquiry across teacher education programmes is systematic (Munthe & Rogne, 2015), and, besides this, it is less researched from the perspective of student teachers.

A recent study on teacher quality identified supporting teachers as high-level professionals as the top level of long-term policy strategies that can contribute to teacher professionalism (European Commission, 2018). This level intends to create bridges between different measures to consider teacher professionalism as a more advanced concept, and besides supporting innovation, knowledge creation and dissemination, it mostly urges the support of the concept of teachers as researchers on the policy level. This level of strategy development also highlights the importance of collaboration between various educational stakeholders, such as schools, teacher educators, educational authorities, social and private sector actors, etc.

One manifestation of the concept of teachers as researchers by supporting teachers' learning and integration of research into their practice is related to the reinvention of the lesson study genre by introducing the so-called 'learning study' as a way of curriculum development (Halász, 2018). In this manner, teachers become curriculum developers. The present study revealed that the research-related methodological repertoire of student teachers is mostly restricted to lesson observations, interviews, and questionnaires, and there is a lack of research into their practice.

Another importance of the concept of teachers as researchers, although in a more anthropological sense, gets in the focus when one considers the importance of multicultural education and culturally responsive teaching – since classrooms, especially due to the technological advances in their virtual form, have been becoming more and more heterogeneous based on an increasing number of factors, teachers need to cope with multicultural student groups in multicultural environments. The followers of culturally responsive teaching argue that without being familiar with the pupils' and students' cultures and their pedagogical application, the achievement gap and/or the opportunity gap cannot be closed (Boreczky, 2014). Teacher knowledge that is required for culturally responsive teaching can be acquired through fieldwork, where the teachers conduct interviews with their pupils' and students' family members, observe the interactions, communication, habits, etc. with the family. Moreover, the narrative method (including teachers' and teacher students' narratives as well as narratives collected during fieldwork) (Boreczky, 2014) as a form of research also contributes to the professional socialisation and the development of cultural competences; therefore it is highly relevant in initial teacher education.

Reflecting on the result that student teachers reported on a limited set of data collection methods provides space for the emergence of a few questions. For instance, the genre of lesson study, which has its origins in Japan, but is becoming more and more known worldwide, is a method that could be easily integrated into initial teacher education programmes as a tool for transforming student teachers' experiential knowledge into explicit knowledge. Providing student teachers with the opportunity to conduct lesson studies and empowering them to use this method in their career would not only have benefits to their professional development, but it would contribute to schools becoming learning organisations (Gordon Győri, Halász & Endrődy-Nagy, 2017).

Student teachers' interpretation of research in general influences their attitude towards conducting educational research. If they have a broader interpretation of research (more problem-focused, not very rigorous), they are more open to conduct educational research and to integrate it into their teaching. However, some prerequisites emerged from the data collected from student teachers, and these are the following:

- good supervision is needed to provide framework and guidance throughout the research,
- practical insight and/or experience of student teachers helps to ensure that the research is relevant for their practice, and
- adequate time shall be allocated for research-related activities; otherwise these activities might end up being just another item on student teachers' to-do list.

Student teachers usually play it safe, and they collect data with the most common methods, including lesson observations of their mentors, interviews and questionnaires. There is no mention of action research, practitioner research – even when they describe a research activity that has the aim to improve their practice, the omission of using these expressions may be because they have not heard of these during their preparation. Besides planning specific research-related student activities, university staff may involve student teachers at different phases of their research. Many interviewees mentioned examples of this; however, they were mostly involved in the data collection part.

Reflection is a principal activity in both cases of this study, and there are numerous mentions of activities related to reflection by student teachers. Although there is evidence for integration of research into teaching, student teachers seem to be closer to the paradigm of the

teaching profession that Menter et al. (2010) identified as the paradigm of the reflective teachers.

Limitations and delimitations

A critique one may propose after seeing the title of the dissertation and having it read might be the lack of harmonisation between them. The title, The evolution of teacher education programmes in different countries with a particular focus on the role of practicum in developing teacher competences, was defined in the framework of an institutional project (The Learning Teacher research project by the Eötvös Loránd University, ELTE; which is the main contribution of ELTE to the common EDiTE research programme – you may read more on these in the Forewords). Therefore, I spent quite some time to figure out how to tackle the countless issues that the lengthy title was covering, and after extensive review of a broad body of literature, and some pilot studies including interviews and focus groups, I accepted a delimitation that influenced the whole study: I narrowed my research focus from what is suggested in the title to study student teachers' learning through practice through the lenses of research-based teacher education and the concept of teachers as researchers.

Another delimitation is related to the chosen countries, Hungary and Austria. As a requirement from the side of the EDiTE project, it was expected to conduct the research in two EDiTE countries. Taking into consideration, the partner institutions from 5 countries, i.e., Austria, Hungary, the Czech Republic, Poland and Portugal, Austria and Hungary were chosen due to their common historical background. Interestingly, although the structural changes in the two countries' teacher education systems are pointing to different directions, the results emerging from the interviews with student teachers outlined similar situations both in Hungary and Austria.

Due to time constraints, the time that could be devoted for data collection was limited. Data were collected through document analysis, interviews and group interviews, and the latter two, considered as self-reported data collection methods, impose limitations and sources of bias. In order to lower the bias, the coding strategy of the interviews was discussed by experts, and a team of reviewers also checked the emerging codes and categories.

Another limitation that is due to the time constraints is related to the involved participants. Although there is evidence in literature that student teachers' perspective on the studied issue is not emphasised, and is under-researched, having the data analysed and the

results interpreted showed me that a more comprehensive picture could have been painted if other actors, such as teacher educators (both university-, and school-based), programme developers or school leaders had been involved.

I must mention that I had to face some limitations due to language, especially in the Austrian case. Not being a fluent German speaker, I relied a great deal on colleagues regarding the identification and translation of the relevant document. Moreover, the interviews with student teachers from the Austrian university were also conducted on the English language. However, in comparison with the interview transcripts from the Hungarian university that were conducted on the Hungarian language, the interviews conducted on the English language at the Austrian university provided good quality data.

Finally, since not being a longitudinal study, it was not possible to grasp the changes, e.g., in student teachers' thinking about research before, during, and after gaining some practical experience. I realise the potential of such a longitudinal approach; however, time constraints limited the opportunities.

Implications of the study

The study has several implications for practice, further research, and policy.

As literature suggests, practitioners shall be at the centre of knowledge creation, therefore one of the main implications of this research is to draw attention to the opportunities lying and sometimes being missed in initial teacher education not only to raise awareness of the importance of research and inquire with regards to practice, but to empower future teachers to be able to conduct research that ensures the transformation of their own practice. Moreover, based on student teachers' reports, practice schools do not see student teachers as valuable resources or contributors to school development in a sense that the research projects conducted by student teachers during their practicum in the practice schools are stand-alone projects. School-university partnerships could be strengthened, school development could be fostered, and at the same time, the relationship between theory and practice could be improved by considering student teachers' research activities more strategically in collaboration with schools and universities.

Numerous implications for further research have emerged, i.e. research into research-based teacher education and the concept of teachers as researchers with not merely self-

reporting data collection methods, research into research-based teacher education and the concept of teachers as researchers with the involvement of more actors, conducting a longitudinal study on the issue in order to grasp the changes, e.g., in student teachers' interpretation of research before, during, and after their practical experiences.

This doctoral study was written with the intention to explore the issues related to research-based teacher education and the concept of teachers as researchers broadly discussed on the international level in different national contexts, i.e. in Hungary and Austria. Despite the limitations, the study contributed to a better understanding of the issues especially from a student teachers' perspective which was suggested by the literature that is being under-researched. Moreover, the use of the teaching-research nexus (Healey & Jenkins, 2009) in the context of initial teacher education proved to be adequate not only to grasp various characteristics but to identify missing links in the path towards research-based teacher education that practitioners, researchers and policymakers shall focus on jointly.

References

Alfeld, C., Charner, I., Johnson, L., & Watts, E. (2013). *Work-based learning opportunities for high school students*. Louisville, KY: University of Louisville, National Research Center for Career and Technical Education. Retrieved from http://www.nrccte.org/sites/default/files/publication-files/nrccte_work-based_learning.pdf

ATEE (2006). *Policy paper - The Quality of Teachers: recommendations on the development of indicators to identify teacher quality*. Retrieved from http://www.pef.uni-lj.si/atee/978-961-6637-06-0/a1-8.pdf

Atkinson, P., & Silverman, D. (1997). Kundera's Immortality: the interview society and the invention of the self. *Qualitative Inquiry, 3*(3), 304-325. DOI: 10.1177/107780049700300304

Backes, V. M. S., Menegaz, J. C., Miranda, F. A. C., S., L. M. C., Cunha, A. P., & Patrício, S. S. (2017). Lee Shulman: contributions to research on teacher training in nursing and health. *Texto & Contexto - Enfermagem, 26*(4). DOI: 10.1590/0104-07072017001080017

Bakkenes, I., Vermunt, J. D., & Wubbels, T. (2010). Teacher learning in the context of educational innovation: learning activities and learning outcomes of experienced teachers. *Learning and Instruction, 20*(6), 533-548. DOI: 10.1016/j.learninstruc.2009.09.001

Berliner, D. C. (2002). Educational Research: the hardest science of all. *Educational Researcher, 31*(8), 18-20. DOI: 10.3102/0013189X031008018

Berry, B., Smylie, M., & Fuller, E. (2008). *Understanding teacher working conditions: a review and look to the future*. Report prepared for the Spencer Foundation. Hillsborough, NC: Center for Teaching Quality.

Bertaux, D. (1981). From the life-history approach to the transformation of sociological practice. In D. Bertaux (Ed.), *Biography and society: the life history approach in the social sciences* (pp.29-45). London: Sage.

Boreczky, Á. (2014). Multikulturalizmus – multikulturális pedagógia [Multiculturality – multicultural pedagogy]. In Gordon Győri, J. (Ed.), *Tanárok interkulturális nézetei és azok hatása az osztálytermi munkára: A multikulturális és interkulturális szemlélet elméleti alapjai és történeti vonatkozásai az oktatásban* [Intercultural views of teachers and their effect on classroom work: The foundations and historical aspects of multicultural and intercultural vies in education] (pp. 21-36). Budapest: ELTE Eötvös Kiadó.

Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention: a meta-analytic and narrative review of the research. *Review of Educational Research, 78*(3), 367-409. DOI: 10.3102/0034654308321455

Bragg, D. D., Hamm, R., & Trinkle, K. (1995). *Work-based learning in two-year colleges in the United States*. Berkeley, CA: National Center for Research in Vocational Education. Retrieved from http://www.nrccte.org/sites/default/files/publication-files/wbl_in_two-year_colleges.pdf

Brodie, P., & Irving, K. (2007). Assessment in work-based learning: investigating a pedagogical approach to enhance student learning. *Assessment & Evaluation in Higher Education, 32*(1), 11-19. DOI: https://doi.org/10.1080/02602930600848218

Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.

Buchberger, F., Campos, B. P., Kallos, D., & Stephenson, J. (2000). *Green paper on teacher education in Europe - high quality teacher education for high quality education and training*. Umeå, Sweden: Fakultetsnämnden för lärarutbildning, Umeå universitet. Retrieved from http://www.cep.edu.rs/sites/default/files/greenpaper.pdf

Bullock, S. M. (2011). *Inside teacher education: challenging prior views of teaching and learning.* Rotterdam: Sense Publishers. DOI: 10.1007/978-94-6091-403-4

Caena, F. (2011). *Literature review - teachers' core competences: requirements and development*. European Commission, Education and Training 2020 Thematic Working Group 'Professional Development of Teachers'. Retrieved from http://ec.europa.eu/assets/eac/education/experts-groups/2011-2013/teacher/teacher-competences_en.pdf

Capel, S., Leask, M., & Turner, T. (2001). *Learning to teach in the secondary school: a companion to school experience*. London: Routledge.

Capel, S., Leask, M., & Turner, T. (2013). *Learning to teach in the secondary school: a companion to school experience*. Abingdon: Routledge

Carnell, E., MacDonald, J., & Askew, S. (2006). *Coaching and mentoring in higher education: a learning-centred approach*. London, UK: UCL IOE Press.

Clandinin, D. J., & Connelly, F. M. (1996). Teachers' professional knowledge landscapes: teacher stories - stories of teachers - school stories - stories of schools. *Educational Researcher, 25*(3), 24-30. DOI: 10.2307/1176665

Cochran-Smith, M. (2005). Teacher educators as researchers: multiple perspective. *Teaching and Teacher Education, 21*(2), 219-225. DOI: 10.1016/j.tate.2004.12.003

Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: teacher learning in communities. *Review of Research in Education, 24*, 249-305. DOI: 10.2307/1167272

Cochran-Smith, M., & Lytle, S. L. (2009). *Inquiry as stance: practitioner research for the next generation*. New York: Teachers College Press.

Cochran-Smith, M., & Zeichner, K. M. (2005). *Studying teacher education: the report of the AERA Panel on Research and Teacher Education*. Washington, USA: American Educational Research Association.

Colley, H., Hodkinson, P., & Malcolm, J. (2003a). Understanding informality and formality in learning. *Adults Learning (England), 15*(3), 7-9.

Colley, H., Hodkinson, P., & Malcom, J. (2003b). *Informality and formality in learning: a report for the Learning and Skills Research Centre*. Leeds, UK: Learning and Research Skills Centre, University of Leeds.

Commission of the European Communities (2007). *Commission staff working document: towards more knowledge-based policy and practice in education and training (SEC(2007)1098)*. Brussels: European Communities.

Creswell, J. W. (*2013*). *Qualitative inquiry & research design: choosing among five approaches (3rd ed.)*. Thousand Oaks, CA: SAGE.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches*. Los Angeles: SAGE.

Creswell, J. W., & Plano, C.V. (2011). *Designing and conducting mixed methods research (2nd ed)*. Thousand Oaks, CA: Sage Publications.

Cunningham, C. A. (2017). Dewey on educational research and the science of education. In M. A. Peters (Ed.), *Encyclopaedia of Educational Philosophy and Theory* (494-498). Springer, Singapore

D'Amour, D., & Oandasan, I. (2005). Interprofessionality as the field of interprofessional practice and interprofessional education: an emerging concept. *Journal of Interprofessional Care, 19*(1), 8-20. DOI: 10.1080/13561820500081604

Darling-Hammond, L. (2006). Constructing 21st century teacher education. *Journal of Teacher Education, 57*(3), 300-314. DOI: 10.1177/002248710528596

Darling-Hammond, L., & Bransford, J. (2007). *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able to Do*. San Francisco, CA: Jossey-Bass.

Darling-Hammond, L., & Lieberman, A. (2013). *High quality teaching and learning: changing policies and practices*. Routledge, London.

DECA (n.d.). *School-based enterprises*. Retrieved from: https://www.deca.org/high-school-programs/school-based-enterprises/

Dewey, J. (1929). *The quest for certainty: a study of the relation of knowledge and action*. New York: Minton, Balch & Company.

Dewey, J. (1882–1953). In J. A. Boydston (Ed.), *The collected works of John Dewey*. Carbondale/Edwardsville: Southern Illinois University Press, 1969–1991. Published in three series and cited above as The Later Works (LW), followed by volume number.

Donald, J. G. (2002). *Learning to think: disciplinary perspectives*. San Francisco: Jossey Bass.

DuFour, R. (2004). What is a "professional learning community"? *Educational Leadership, 61(8),* 6-11. Retrieved from http://www.ascd.org/publications/educational-

leadership/may04/vol61/num08/What-Is-a-Professional-Learning-Community%C2%A2.aspx

Durkheim, E. (1952). *Suicide: a study in sociology*. London: Routledge & Kegan. (Original work published 1897)

ELTE Pedagógiai és Pszichológiai Kar (2015). *Okos köznevelés: javaslat a Nemzeti Oktatási Innovációs Rendszer stratégiájának kiegészítésére „NOIR+ stratégia"* [Smart public education: recommendations for the supplement of the National Educational Innovation System "NOIR+ strategy"]. Retrieved from http://www.ppk.elte.hu/file/noir_hg.pdf

Eötvös Loránd University EDiTE Team (2014). *Teacher education and teacher education policies in the European Union*. Issue Paper of the EDiTE Final Conference and Seminar, Budapest. Retrieved from http://www.fmik.elte.hu/wp-content/uploads/2014/06/EDiTE_Budapest-conference_Issues-Paper_201407.pdf

Erlingson, C., & Brysiewicz, P. (2017). A hands-on guide to doing content analysis. *African Journal of Emergency Medicine, 7*(3), 93-99. DOI: 10.1016/j.afjem.2017.08.001

ET2020 Working Group on Schools Policy (2015). *Shaping career-long perspectives on teaching - a guide on policies to improve Initial Teacher Education*. Brussels: European Commission. Retrieved from http://www.cedefop.europa.eu/files/2_13_4_teacher_careers_en.pdf

European Commission (2010). *Developing coherent and system-wide induction programmes for beginning teachers: a handbook for policymakers*. Brussels: European Commission Directorate-General for Education and Culture. Retrieved from http://ec.europa.eu/dgs/education_culture/repository/education/policy/school/doc/handbook0410_en.pdf

European Commission (2012). *Supporting the teaching profession for better learning outcomes*. Strasbourg: European Commission. Retrieved from https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SWD:2012:0374:FIN:EN:PDF

European Commission (2013). *Supporting teacher competence development for better learning outcomes*. Retrieved from http://ec.europa.eu/assets/eac/education/experts-groups/2011-2013/teacher/teachercomp_en.pdf

European Commission (2018). *Boosting teacher quality: pathways to effective policies*. Brussels: European Commission. Retrieved from https://publications.europa.eu/en/publication-detail/-/publication/95e81178-896b-11e8-ac6a-01aa75ed71a1

Evans, L. (2008). Professionalism, professionality and the development of education professionals. *British Journal of Educational Studies, 56*(1), 20-38. DOI: 10.1111/j.1467-8527.2007.003

Feiman-Nemser, S. (2003). What new teachers need to learn? *Educational Leadership, 60*(8), 25-29.

Fenstermacher, G. D., & Richardson, V. (2005). On making determinations of quality in teaching. *Teachers College Record, 107*(1), 186-213. DOI: 10.1111/j.1467-9620.2005.00462.x

Fontana, A., & Frey, J. (1994). The art of science. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 361-376). Thousand Oaks: Sage Publications.

Fontana, A., & Frey, J. (2005). The interview. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research*, (pp. 695-727). Thousand Oaks: Sage Publications.

Forde, C., McPhee, A., McMahon, M., & Patrick, F. (2006). *Professional development, reflection and enquiry*. London: Paul Chapman.

Freidson, E. (2001). *Professionalism: the third logic*. Chicago, IL: The University of Chicago Press.

Frey, J. H., & Fontana, A. (1991). The group interview in social research. *The Social Science Journal, 28*(2), 175-187. DOI: 10.1016/0362-3319(91)90003-M

Furlong, J., Barton, L., Miles, S., Whiting, C., & Whitty, G. (2000). *Teacher education in transition: re-forming professionalism*? Buckingham: Open University Press.

Gall, M. D., Borg, W. R., & Gall, J. P. (2007). *Educational research: an introduction (8th edition)*. Boston: Pearson.

Garai, I., & Vincze, B. (2013). *Az európai tanárképzés a „modellalkotó" és „modellkövető" országok aspektusából vizsgálva. Összegző áttekintés egy tanulmánykötet margójára* [European teacher education from the aspect of model creating and model following countries - summarizing overview]. Budapest: ELTE. Retrieved from http://pedagoguskepzes.elte.hu/images/anyagok/iii1/38_tanarkepzes_margo.pdf

Gemma, W. (2014). *The 6 types of knowledge: from a priori to procedural*. Retrieved from https://blog.udemy.com/types-of-knowledge/

González, J., & Wagenaar, R. (2005). *Tuning educational structures in Europe II. universities' contribution to the Bologna process*. Bilbao: University of Deusto & University of Groningen. Retrieved from http://tuningacademy.org/wp-content/uploads/2014/02/TuningEUII_Final-Report_EN.pdf

Gonzalez, N., Moll, L.C., & Amanti, C. (2013). *Funds of knowledge: theorizing practices in households, communities, and classrooms*. New York: Routledge.

Gordon Győri, J., Halász, G., & Endrődy-Nagy, O. (2017). A pedagógiai tudásépítés kultúrája a Budapesti Japán Iskolában [The culture of pedagogical knowledge creation in the Budapest Japanese School]. *Magyar Pedagógiai, 117*(3), 325-344. DOI: 10.17670/MPed.2017.3.325

Gray, J., & Campbell-Evans, G. (2002). Beginning teachers as teacher-researchers. *Australian Journal of Teacher Education, 27*(1). DOI: 10.14221/ajte.2002v27n1.4

Griffiths, R. (2004). Knowledge production and the research-teaching nexus: the case of the built environment disciplines. *Studies in Higher Education*, 29(6), 709-726. DOI: *10.1080/0307507042000287212*

Guba, E. G. (1990). The alternative paradigm dialog. In E. G. Guba (Ed.), *The paradigm dialog* (pp. 17-30). Newbury Park, CA: Sage.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.

Hagger, H., & McIntyre, D. (2006). *Learning teaching from teachers: realizing the potential of school-based teacher education*. Maidenhead: Open University Press.

Halász, G. (2018). *Kurrikulum-fejlesztés, kurrikulum-szabályozás és kurrikulum-implementáció: alapvető összefüggések és globális trendek* [Curriculum development, curriculum regulation and curriculum implementation: fundamental relationships and global trends]. Unpublished manuscript. Retrieved from http://halaszg.ofi.hu/download/Implementation_study.pdf

Hammerness, K., Darling-Hammond, L., & Bransford, J. (2005). How teachers learn and develop. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: what teachers should learn and be able to do (*pp. 358-389). San Francisco, CA: Wiley & Sons.

Hargreaves, A., & Fullan, M., (2000). Mentoring in the new millennium. *Theory into practice, 39*(1), 50-56. DOI: doi.org/10.1207/s15430421tip3901_8

Hargreaves, A., & Goodson, I. (1996). Teachers' professional lives: aspirations and actualities. In I. Goodson & A. Hargreaves (Eds.), *Teachers' professional lives* (pp. 1-27). London: Falmer

Hargreaves, D. (1999). The knowledge-creating school. *British Journal of Educational Studies, 47*(2), 122-144.

Hargreaves, D. (2000). The production, mediation and use of professional knowledge among teachers and doctors: A comparative analysis. In OECD, *Knowledge management in the learning society* (pp. 219-238). Paris: OECD.

Hartley, D. (2002). Global influences on teacher education in Scotland. *Journal of Education for Teaching, 28*(3), 251-255. DOI: 10.1080/026074702000021304

Hatano, G., & Oura, Y. (2003). Commentary: reconceptualising school learning using insight from expertise research. *Educational Researcher, 32*(8), 26-29. DOI: 10.3102/0013189X03210.3102/0013189X032008026008026

Hattie, J., & Marsh, H. W. (1996). The relationship between research and teaching: A meta-analysis. *Review of Educational Research*, 66(4), 507-42.

Healey, M. (2005). Linking research and teaching: exploring disciplinary spaces and the role of inquiry-based learning. In Barnett, R. (Ed.), *Reshaping the university: New*

relationships between research, scholarship and teaching (pp. 67-78). Maidenhead: McGraw Hill/ Open University Press.

Healey, M., & Jenkins, A. (2009, March). *Linking discipline-based research and teaching through mainstreaming undergraduate research and inquiry*. Retrieved from https://warwick.ac.uk/fac/cross_fac/iatl/cetl/resources/linking_discipline-based_research_and_teaching_through...pdf

Heirdsfield, A. M. (2008). Peer mentoring for first-year teacher education students: the mentors' experience. *Mentoring and tutoring: partnership in learning, 16*(2), 109-124. DOI: 10.1080/13611260801916135

Henderson, B., Meier, D., Perry, G., & Stremmel, A. J. (2012). *The nature of teacher research. Voices of Practitioners*. Retrieved from https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/pubs/Nature%20of%20Teacher%20Research.pdf

Hergert, M. (2009). Student perceptions of the value of internships in business education. *American Journal of Business Education, 2*(8), 9-13. DOI: 10.19030/ajbe.v2i8.4594

Hestnes, H., & Grankvist, R. (2006). Co-*operative partnership in teacher education at the Norwegian University of Science and Technology in Trondheim*. Paper presented at the 31st Annual ATEE Conference, Portorož. Retrieved from http://www.pef.uni-lj.si/atee/978-961-6637-06-0/645-652.pdf

Hoyle, E. (1974). Professionality, professionalism and control in teaching. *London Education Review, 3*(2), 13-19.

Hudson, B. (2008). Didactical design research for teaching as a design profession. In B. Hudson & P. Zgaga (Eds.), *Teacher education policy in Europe: a voice of higher education institutions* (pp. 345-366). Umea: University of Umeå Faculty of Teacher Education.

Hunyadi, Gy. (2010). *Pedagógusképzés a „magyar bolognai rendszerben": A Nemzeti Bologna Bizottság Pedagógusképzési Albizottságának válogatott dokumentumai 2003-2010* [Teacher education in the „Hungarian Bologna system": Selected documents of the National Committee for Bologna, Subcommittee for Teacher Education, 2003-2010]. Budapest: ELTE Eötvös Kiadó.

Jenkins, A., Breen, R., Lindsay, R., & Brew, A. (2003). *Re-shaping higher education: linking teaching and research*. London: SEDA and Routledge.

Kálmán, O., & Rapos, N. (2007). Kellenek-e alapelvek a pedagógusképzés átalakításához? - európai tendenciák [Are principles needed for the transformation of teacher education? - European tendencies]. *Pedagógusképzés,* 5(4), 23-42.

Kemmis, S. (2009). Action research as a practice-based practice. *Educational Action Research, 17*(3), 463–474.

Kennedy, M. (1999). The role of preservice teacher education. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: handbook of policy and practice* (pp. 54-85). San Francisco: Jossey-Bass.

Kennedy, M. M. (2008). *Sorting out teacher quality*. Phi Delta Kappan, 90(1), 59-63. Retrieved from https://msu.edu/user/mkennedy/publications/docs/Teacher%20Quality/PDK/Kennedy%2008%20PDK.pdf

Keyes, C. (1999). *The early childhood teacher's voice in the research community*. Paper presented at the Third Warwick International Early Years Conference: Sharing Research in Early Childhood Education. Coventry UK.

Knowles, M. (1975). *Self-directed learning: a guide for learners and teachers*. New York, NY: Association Press.

Kopp, E., & Kálmán, O. (2015). Nemzetközi tapasztalatok elemzése a tanítási és az összefüggő egyéni gyakorlat terén [Analysis of international experiences on teaching practice]. In N. Rapos, & E. Kopp, *A tanárképzés megújítása* [Renewal of teacher education]. Budapest: ELTE Eötvös Kiadó.

Koster, B., & Dengerink, J. J. (2008). Professional standards for teacher educators: how to deal with complexity, ownership and function (experiences from the Netherlands). *European Journal of Teacher Education, 31*(2, 135-149). DOI: 10.1080/02619760802000115

Kraler, C., & Schratz, M. (2014). *Teacher education at the University of Innsbruck: from best practice to next practice or the struggle for recognition*. Retrieved from: http://homepage.uibk.ac.at/~c62552/papers/EDiTE-WinterSchool-2015_02_02web.pdf

Krauss, S., Brunner, M., Kunter, M., Baumert, J., Blum, W., Neubrand, M., & Jordan, A. (2008). Pedagogical content knowledge and content knowledge of secondary Mathematics teachers. *Journal of Educational Psychology, 100*(3), 716-725. DOI: 10.1037/0022-0663.100.3.716

Lave, J., & Wenger, E. (1991). *Situated learning: legitimate peripheral participation*. Cambridge: University of Cambridge Press

Lavonen, J., Korhonen, T., & Juuti, K. (2015). Finnish teachers' professionalism is built in teacher education and supported by school site. *Hungarian Educational Research Journal, 5*(3), 15-27. DOI: 10.14413/HERJ2015.03.02

Lewin, K. (1946). Action research and minority problems. In G. W. Lewin (Ed.), *Resolving social conflicts* (pp. 201-216). New York: Harper & Row.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Livingstone, D. W. (2001). *Adults' informal learning: definitions, findings, gaps, and future research*. NALL working paper #21. Toronto: Ontario Institute for Studies in Education. Retrieved from https://tspace.library.utoronto.ca/retrieve/4484/21adultsinformallearning.pdf

Lortie, D. C. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.

Loughran, J. (2002). Teacher as researcher: the PAVOT project. In J. Loughran, I. Mitchell & J. Mitchell (Eds.), *Learning from teacher research* (pp. 3-18). New York, NY: Teachers College Press.

Lynch, D. E., & Smith, R. (2006). *Designing the classroom curriculum in the knowledge era*. Brisbane: AACLMP Press.

Lynch, R., Hennessy, J., & Gleason, J. (2013). Acknowledging teacher professionalism in Ireland: the case for a Chartered Teacher initiative. *Irish Educational Studies, 32*(4), 493-510. DOI: 10.1080/03323315.2013.854453

Mahony, P., & Hextall, I. (2000). *Reconstructing teaching*. London: Routledge.

Manchester Metropolitan University (n.d.). *Job shadowing guidelines*. Retrieved from https://www2.mmu.ac.uk/media/mmuacuk/content/documents/human-resources/a-z/guidance-procedures-and-handbooks/Job_Shadowing_Guidelines.pdf

McDiarmid, G. W., & Clevenger-Bright, M. (2008). Rethinking teacher capacity. In M. Cochran-Smith, S. Feiman-Nemser & D. McIntyre (Eds), *Handbook of research on teacher education: enduring questions in changing contexts*. New York/Abingdon: Routledge/Taylor & Francis.

McKenzie, P., Santiago, P., Sliwka, P., & Hiroyuki, H. (2005). *Teachers matter: attracting, developing and retaining effective teachers*. Paris: OECD.

McKinsey Report (2007). How the World's Best-Performing School Systems Come out on Top. London: McKinsey & Company.

McLaughlin, M., & Talbert, J. (2001). *Professional communities and the work of high-school teaching.* Chicago: University of Chicago Press.

McMahon, M., Forde, C., & Dickson B. (2015). Reshaping teacher education through the professional continuum. *Educational Review, 67*(2), 158-178, DOI: 10.1080/00131911.2013.846298

Meirink, J.A., Meijer, P.C., & Verloop, N. (2007). A closer look at teachers' individual learning in collaborative settings. *Teachers and Teaching: Theory and Practice, 13*(2), 145-164. DOI: 10.1080/13540600601152496

Menter, I., Hulme, M., Elliot, D., & Lewin, J. (2010). *Literature review on teacher education in the 21st century*. Glasgow: University of Glasgow. Retrieved from https://www2.gov.scot/Resource/Doc/325663/0105011.pdf

Merriam, S., Caffarella, R., & Baumgartner, L. (2006). *Learning in adulthood: a comprehensive guid*e. San Francisco, CA: Jossey-Bass.

Ministry of General Education (2015). *School-based continuing professional development through lesson study: Implementation guidelines*. Retrieved from http://www.moge.gov.zm/?wpfb_dl=68

Ministry of Human Capacities of Hungary (2011). *2011. évi CCIV. törvény a nemzeti felsőoktatásról* [2011. CCIV Law on the National Higher Education]. Retrieved from http://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A1100204.TV

Ministry of Human Capacities of Hungary (2013). *8/2013. (I. 30.) EMMI rendelete a tanári felkészítés közös követelményeiről (8/2013. (I. 30.)* [Regulation of the Ministry of Human Capacities on the Common Requirements of Teacher Preparation]. Retrieved from https://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=a1300008.emm

Morgan, D. L. (2007). Paradigms lost and pragmatism regained: methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research 1*(1), 48-76. DOI: 10.1177/2345678906292462

Morgan, D. L. (2014). Pragmatism as a paradigm for social research. *Qualitative Inquiry, 20*(8), 1045-1053. DOI: 10.1177/1077800413513733

Moses, I. (1990). Teaching, research, and scholarship in different disciplines. *Higher Education, 19*(3), 351-375.

Munby, H., & Russell, T. (1992). Frames of reflection: An introduction. In T. Russell & H. Munby (Eds.), *Teachers and teaching: from classroom to reflection* (pp. 1-8). London: The Falmer Press.

Munby, H., Russell, T., & Martin, A. K. (2001). Teachers' knowledge and how it develops. In V. Richardson (Ed.), *Handbook of research on teaching* (4th ed., pp. 877-904). Washington, DC: American Educational Research Association.

Munthe, E., & Rogne, M. (2015). Research based teacher education. *Teaching and Teacher Education, 46*, 17-24. DOI: 10.1016/j.tate.2014.10.006

Myers, M. D., & Newman, M. (2006). The qualitative interview in IS research: examining the craft. *Information and Organization, 17*(1), 2-26. DOI: 10.1016/j.infoandorg.2006.11.001

Neuman, W. L. (2011). *Social research methods: qualitative and quantitative approaches.* Boston: Allyn & Bacon.

Neuman, W. L. (2014). *Social research methods: qualitative and quantitative approaches (seventh edition)*. Harlow: Pearson Education Limited.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.

OECD (2003). *New challenges for educational research*. Paris: OECD.

OECD (2007). *Evidence in education: linking research and policy*. Paris: OECD.

OECD (2009). *Creating effective teaching and learning environments: First result s from TALIS*. Paris: OECD.

OECD (2016). *Supporting teacher professionalism: Insights from TALIS 2013*. Paris: OECD Publishing. DOI: 10.1787/9789264248601-en

OECD (2017). *Education policy outlook Austria*. Retrieved from http://www.oecd.org/education/Education-Policy-Outlook-Country-Profile-Austria.pdf

Online Etymology Dictionary (n.d.). Retrieved from https://www.etymonline.com/word/research

Onstenk, J., & Blokhuis, F. (2007). Apprenticeship in the Netherlands: connecting school- and work-based learning. *Education and Training, 49*(6), 489-499. DOI: 10.1108/00400910710819136

Palinkas, L., Horwitz, S., Green, C., Wisdom, J., Duan, N., & Hoagwood, K. (2016). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research, 42*(5), 533-544. DOI: 10.1007/s10488-013-0528-y

Patton, M. (1990). *Qualitative evaluation and research methods*. Beverly Hills, CA: Sage.

Patyi, G. (2016). Párhuzamok és különbségek: középiskolai tanárképzés a Lajtán innen és túl a 19. század második felében [Similarities and differences: secondary school teacher education in the second half of the 19th century]. *Képzés és Gyakorlat, 14*(3-4), 257-266. Retrieved from http://epa.oszk.hu/02600/02641/00012/pdf/EPA02641_kepzes_es_gyakorlat_2016-3-4_257-266.pdf

Pesti, Cs., Gordon Győri, J., & Kopp, E. (2018). Student teachers as future researchers: how do Hungarian and Austrian initial teacher education systems address the issue of teachers as researchers? *Center for Educational Policy Studies Journal, 8*(3), 35-57. DOI: 10.26529/cepsj.518

Pesti, Cs., Gordon Győri, J., & Kopp, E. (in press). Ausztria tanárképzési rendszere [Teacher education system in Austria]. *Pedagógusképzés*.

Pesti, Cs., Rapos, N., Nagy, K., & Bohán, M. (2017). Analysis of learning outcome-based teacher training programmes - development experiences in Hungary. *Acta Paedagogica Vilnensia, 2017*(38), 58-76. DOI: https://doi.org/10.15388/ActPaed.2017.38.10791

Pezone, M., & Singer, A. (2003). Education for social change: from Theory to Practice. *Workplace, 10*, 145-151.

Polányi, M. (1966). *The tacit dimension*. Chicago: University of Chicago Press.

Pollard, A. (2005). *Readings for reflective teaching*. London, UK: Continuum.

Pollard, A. (2008). *Reflective teaching: evidence-informed professional practice*. London: Free Range Book Design press.

Ponte, P., Beijard, D., & Ax, J. (2004). Don't wait till the cows come home: action research and initial teacher education in three different countries. *Teachers and Teaching, 10*(6), 591-621. DOI: 10.1080/1354060042000304792

Pukánszky, B. (2013). *Paradigmatikus viták a tanárképzésről Magyarországon* [Paradigmatic discussion about teacher education in Hungary]. Retrieved from http://www.irisro.org/pedagogia2013januar/0701PukanszkyBela.pdf

Putnam, R. T., & Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning? *Educational Researcher, 29*(1), 4-15. DOI: 10.2307/1176586

Raelin, J. A. (1997). A model of work-based learning. *Organization Science, 8*(6), 563-578. DOI: 10.1287/orsc.8.6.563

Raelin, J. A. (2008). *Work-based learning: bridging knowledge and action in the workplace*. San Francisco, CA: John Wiley.

Rapos, N., & Kopp, E. (2015). *A tanárképzés megújítása* [Renewal of teacher education]. Budapest: ELTE Eötvös Kiadó.

Rapos, N., Kopp, E., Lénárd, S., & Szivák, J. (2014). The position of social justice in the teacher education curriculum in Hungary. In Gy. Mészáros & F. Győrfiné Körtvélyesi (Eds.), *Social justice and diversity in teacher education*, Proceedings of the Winter Conference of the Association for Teacher Education in Europe. 15-17 April, 2014 Budapest.

Reason, P., & Bradbury, H. (2001). *Handbook of action research: participative inquiry and practice*. London: Sage.

Rhoton, J., & Stiles, K. E. (2002). Exploring the professional development design process: bringing an abstract framework into practice. *Science Educator, 11*(1), 1-8.

Ritchie, G. (n.d.). *Teacher research*. Retrieved from www.teacherscount.org/topic/topic-ritchie.shtml

Rossman, G. B., & Wilson, B. L. (1985). Combining quantitative and qualitative methods in single large-scale evaluation study. *Evaluation Review, 9*(5), 627-64. DOI: 10.1177/0193841X8500900505

Ryan, G., Toohey, S., & Hughes, C. (1996). The purpose, value and structure of the practicum in higher education: a literature review. *Higher Education, 31*(3), 355-377. DOI: 1007/BF00128437

Rychen, D. S., & Salganik, L. H. (2003). *Key competencies for a successful life and a well-functioning society*. Göttingen: Hogrefe & Huber.

Sachs, J. (2003) *The activist teaching profession*. Buckingham: Open University Press.

Sági, M. (2015). *A pedagógushivatás megerősítésének néhány aspektusa* [Some aspects of the strengthening of the teaching profession]. Budapest: Oktatáskutató és Fejlesztő Intézet. Retrieved from http://ofi.hu/sites/default/files/attachments/1506257_a_pedagogushivatas_megerositesenek_nehany_aspektusa_beliv.pdf

Schön, D. A. (1983). *The reflective practitioner: how professionals think in action*. New York: Basic Books.

Schratz, M. (2018, March 18.). *M. Schratz presenting the Austrian education system* [Video File]. Retrieved from https://www.youtube.com/watch?v=EoUakYJxbJo

Schugurensky, D. (2000). *The forms of informal learning: towards a conceptualization of the field.* Ontario: Centre for the Study of Education and Work.

Seals, G. (2004). Conceptualizing teaching as science: John Dewey in dialogue with the National Research Council. *Educational Theory, 54*(1), 1–26.

Sexton, M. (2007). Evaluating teaching as a profession: implications of a research study for the work of the teaching council. *Irish Educational Studies, 26*(1), 79-105. DOI: 10.1080/03323310601125310

Sheehan, D., Wilkinson, T., & Bowie, E. (2012). Becoming a practitioner: workplace learning during the junior doctor's first year. *Medical Teacher, 34*, 936-945. DOI: 10.3109/0142159X.2012.717184

Shulman, L. S. (1987). *Knowledge and teaching: foundations of the new reform*. Harvard Educational Review, 57, 1-22.

Shulman, S., & Shulman, J. (2004). How and what teachers learn: A shifting perspective. *Journal of Curriculum Studies, 36*(2), 257-271. DOI: 10.1080/0022027032000148298

Simić, N., Bachmann, G., & Stančić, M. (2013). Comparison of teacher education reforms in Serbia and Austria. In M. Despotović, E. Hebib & B. Németh (Eds.), *Contemporary issues of education quality* (pp. 393-408). Belgrade: Faculty of Philosophy, University of Belgrade, Serbia - Institute for Pedagogy and Andragogy, University of Belgrade, Serbia - Faculty of Adult Education and HRD, University of Pécs, Hungary.

Smith, K. (2015). The role of research in teacher education. *Research in Teacher Education, 5*(2), 43-46.

Smith, K., & Sela, O. (2005). Action research as a bridge between pre-service teacher education and in-service professional development. *The European Journal of Teacher Education, 28*(3), 293-311. DOI: 0.1080/02619760500269418

Snoek, M. (2011). Teacher education in the Netherlands: balancing between autonomous institutions and a steering government. In M. V. Zuljan & B. M. Požarnik (Eds.), *European dimensions of teacher education: Similarities and differences* (pp. 53-84). Ljubljana: Faculty of Education; Kranj: The National School of Leadership and Education.

Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Stenhouse, L. (1975). *An introduction to curriculum research and design*. London: Heinemann.

Strauss, A. (1987). *Qualitative analysis for social scientists*. New York: Cambridge University Press.

Stronach, I., Corbin, B., McNamara, O., Stark, S., & Warne, T. (2002). Towards an uncertain politics of professionalism: teacher and nurse identities in flux. *Journal of Education Policy, 27*(2), 109-138. DOI: 10.1080/02680930110100081

Symeonidis, V. (2018). Weaving the threads of a continuum: teacher education in Hungary from the perspective of European developments. *Studia paedagogica, 22*(4), 131-150. DOI: 10.5817/SP2017-4-7

Szabó, Á., Hámori, V., Kimmel, M., Kotschy, B., Móri, Á., Szőke-Milinte, E., & Wőfling, Zs. (2013). *Útmutató a pedagógusok minősítési rendszeréhez* [Guideline to teachers' qualification system]. Budapest: Oktatási Hivatal. Retrieved from https://www.oktatas.hu/pub_bin/dload/unios_projektek/kiadvanyok/utmutato_pedagogusok_minositesi_rendszerehez_v3.pdf

Szondi. I., & Cziráné, K. T. (2012). A tanári életpályamodell egyes elemei [Some components of the teacher career path model]. *Acta Universitatis Szegediensis: acta juridica et politica*, 76, 437-455. Retrieved from http://acta.bibl.u-szeged.hu/34769/1/juridpol_076_437-455.pdf

Tashakkori, A., & Teddlie, C. (2010). *SAGE handbook of mixed methods in social and behavioural research (2nd ed.).* Thousand Oaks, CA: Sage.

Tél, T. (2010). Bologna vagy tanárképzés? Tények és szubjektív megjegyzések a természettudományos tanárképzésről [Bologna or teacher education? Facts and subjective comments on teacher education for natural sciences]. *Fizikai Szemle, 3*, 100-104. Retrieved from http://fizikaiszemle.hu/archivum/fsz1003/TelTamas.pdf

The Teaching Council (2011). *Policy on the continuum of teacher educatio*n. Retrieved from: http://www.teachingcouncil.ie/en/Publications/Teacher-Education/Policy-on-the-Continuum-of-Teacher-Education.pdf.

Toom, A., Kyn*äslahti, H., Krokfors, L., Jyrhämä, R., Byman, R., Stenberg, K., Maaranen, K., & Kansanen, P. (*2010). Experiences of a research-based approach to teacher education: suggestions for future policies. *European Journal of Education , 45*(2), 331-344. DOI: 10.1111/j.1465-3435.2010.01432.x

Ulvik, M. (2014). Student-teachers doing action research in their practicum: why and how? *Educational Action Research, 22*(4), 518-33. DOI: 10.1080/09650792.2014.918901

UNESCO (2017, November 17). Education systems too slow to reform, warns the IBE. Retrieved from http://www.ibe.unesco.org/en/news/education-systems-too-slow-reform-warns-ibe

University of Innsbruck (2014, October 1). Curriculum for the secondary school teacher accreditation programme at the Faculty of Humanities at the University of Innsbruck. Retrieved from https://www.uibk.ac.at/fakultaeten-servicestelle/pruefungsreferate/studienplaene/english-version/la-geiwi_stand-01.10.2014_en.pdf

University of Innsbruck (2017, October 1). Curriculum for the bachelor's programme secondary school teacher training (general education). Retrieved from https://www.uibk.ac.at/studium/anmeldung-zulassung/bachelorstudium/index.html.en

van Manen, M. (1991). *The tact of teaching: the meaning of pedagogical thoughtfulness*. London, Ontario, Canada: The Althouse Press.

Van Noy, M., James, H., & Bedley, C. (2016). *Reconceptualizing learning: a review of the literature on informal learning*. Piscataway, NJ: Education and Employment Research Center, School of Management and Labour Relations, Rutgers, the State University of New Jersey.

Vogt, F., & Rogalla, M. (2009). Developing adaptive teaching competency through coaching. *Teaching and Teacher Education: an International Journal of Research and Studies*, 25(8), 1051-1060. DOI: 10.1016/j.tate.2009.04.002

Watkins, P. (2005). The principal's role in attracting, retaining, and developing new teachers: three strategies for collaboration and support. *The Clearing House, 79*(2), 83-87. DOI: 10.3200/TCHS.79.2.83-87

Wenger, E. (1998). *Communities of practice: learning, meaning and identity*. Cambridge: Cambridge University Press.

Willegems, V., Consuegra, E. Struyven, K., & Engels, N. (2017). *Teachers* and pre-service teachers as partners in collaborative teacher research: a systematic literature review. *Teaching and Teacher Education, 64*, 230-245. DOI: 0.1016/j.tate.2017.02.014

Yin, R. K. (1984). *Case study research: design and methods*. Beverly Hills, Calif: Sage Publications.

Zgaga, P. (2017). European teacher education in the grip of 'academic tribes and territories'. In L. Florian & N. Pantić (Eds.), *Teacher education for the changing demographics of schooling* (pp. 21-37). Cham: Springer.

Appendices

Appendix 1. Code system

1. IDENTIFICATION	
Aim	Record identification
1.1 ID	TEXT
1.2 Institution	/UIVERSITY1 /UNIVERSITY2
1.3 Programme	/UNIVERSITY1 MA /UNIVERSITY1 UNDIVIDED /UNIVERSITY2 BA /UNIVERSITY2 MA /UNIVERSITY2 UNDIVIDED
1.4 Course	TEXT

2. GENERAL INFORMATION	
Aim	To record general course information (e.g., type, field, ECTS, number of lessons, etc.)
2.1 Field	/NOT INDICATED /PEDAGOGY /PSCYCHOLOGY /PEDAGOGY AND /PSYCHOLOGY /SUBJECT PEDAGOGY /PRACTICE /OTHER
2.2 Other field	TEXT
2.3 ECTS	TEXT
2.4 Number of lessons/semester	TEXT
2.5 Type	/NOT INDICATED /LECTURE SEMINAR, INTRODUCTORY SEMINAR /LECTURE AND SEMINAR /PRACTICAL TRAINING COURSE /OTHER
2.6 Proposed semester	TEXT
2.7 Form of assessment	/NOT INDICATED /COLLOQUIUM /PRACTICAL ASSESSMENT /3 GRADED ASSESSMENT /SIGNATURE /OTHER

3. COMPETENCES	
Aim	To record the competences that the courses aim to develop (broken down into knowledge, skills and attitude components) The codes for competences are based on those described in the European Commissions (2013) publication titled *Supporting teacher competence development for better learning outcomes*.
3.1 Where are the competences indicated?	/THE COMPETENCES ARE NOT INDICATED ANYWHERE /THE COMPETENCES ARE INDICATED IN THE COURSE DESCRIPTION /THE COMPETENCES ARE INDICATED IN THE MODULE DESCRIPTION /THE COMPETENCES ARE INDICATED IN THE PROGRAMME DESCRIPTION
3.2. COMPETENCES - KNOWLEDGE	
3.2.1 Subject matter knowledge	/NOT INDICATED /NO /YES
3.3.2 Pedagogical Content Knowledge (PCK)	/NOT INDICATED /NO /YES
3.2.3 Pedagogical knowledge	/NOT INDICATED /NO /YES
3.2.4 Curricular knowledge	/NOT INDICATED /NO /YES
3.2.5 Educational sciences foundation	/NOT INDICATED /NO /YES
3.2.6 Contextual, institutional, organisational aspects of educational policies	/NOT INDICATED /NO /YES
3.2.7 Issues of inclusion and diversity	/NOT INDICATED /NO /YES
3.2.8 Effective use of technologies in learning	/NOT INDICATED /NO /YES
3.2.9 Developmental psychology	/NOT INDICATED /NO /YES
3.2.10 Group processes and dynamics, learning theories, motivational issue	/NOT INDICATED /NO /YES
3.2.11 Evaluation and assessment processes and methods	/NOT INDICATED /NO /YES
3.2.12 Other knowledge (focusing on research related knowledge)	TEXT

3.3. COMPETENCES - SKILLS	
3.3.1 Planning, managing and coordinating teaching	/NOT INDICATED /NO /YES
3.3.2 Using teaching materials and technologies	/NOT INDICATED /NO /YES
3.3.3 Managing students and groups	/NOT INDICATED /NO /YES
3.3.4 Monitoring, adapting and assessing teaching/learning objectives and processes	/NOT INDICATED /NO /YES
3.3.5 Collecting, analysing, interpreting evidence and data (school learning outcomes, external assessments results) for professional decisions and teaching/learning improvement	/NOT INDICATED /NO /YES
3.3.6 Using, developing and creating research knowledge to inform practices	/NOT INDICATED /NO /YES
3.3.7 Collaborating with colleagues, parents and social services	/NOT INDICATED /NO /YES
3.3.8 Negotiation skills (social and political interactions with multiple educational stakeholders, actors and contexts)	/NOT INDICATED /NO /YES
3.3.9 Reflective, metacognitive, interpersonal skills for learning individually and in professional communities	/NOT INDICATED /NO /YES
3.3.10 Adapting to educational contexts characterised by multi-level dynamics with cross-influences	/NOT INDICATED /NO /YES
3.3.11 Other skills	TEXT
3.4. COMPETENCES - ATTITUDES	
3.4.1 Epistemological awareness	/NOT INDICATED /NO /YES
3.4.2 Teaching skills through content	/NOT INDICATED /NO /YES
3.4.3 Transferable skills	/NOT INDICATED /NO /YES
3.4.4 Dispositions to change, flexibility, ongoing learning and professional improvement, including study and research	/NOT INDICATED /NO /YES
3.4.5 Commitment to promoting the learning of all students	/NOT INDICATED /NO /YES
3.4.6 Dispositions to promote students' democratic attitudes and practices, as European citizens (including the appreciation of diversity and multiculturality)	/NOT INDICATED /NO /YES

3.43.7 Critical attitudes toward one's own teaching (examining, discussing, questioning practices)	/NOT INDICATED /NO /YES
3.4.8 Dispositions to team-working, collaboration and networking	/NOT INDICATED /NO /YES
3.4.9 Sense of self-efficacy	/NOT INDICATED /NO /YES
3.4.10 Other disposition	TEXT

4. CONTENT	
Aim	To record the content of the course The content is divided into two sub-modules, where the first one includes 23 components adapted from other researches (OECD, 2016), OFI (Sági, 2015)), and the second one includes 13 components adapted from the list of topics for the final examination of pedagogical-psychological modules.
4.1 Where is the content indicated?	/THE CONTENT IS NOT INDICATED ANYWHERE /THE CONTENT IS INDICATED IN THE COURSE DESCRIPTION /THE CONTENT IS INDICATED IN THE MODULE DESCRIPTION /THE CONTENT IS INDICATED IN THE PROGRAMME DESCRIPTION
4.2 Research Methodology	/NOT INDICATED /NO /YES
4.3 Other content (Y/N)	/NOT INDICATED /NO /YES
4.4 What is the other content?	TEXT

5. COURSE DELIVERABLES	
Aim	To record the deliverables, products students are expected to deliver (e.g., essay, reflective diary, case analysis, observation, etc.)
5.1 Are there course deliverables?	/NO /YES
5.2 Essay	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.3 Active participation in the lessons	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK

	/YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.4 Discussion, debate	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.5 Situational exercise	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.6 Reflection	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.7 Creating a pedagogical dictionary	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.8 Source analysis	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.9 Case analysis	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK

	/YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.10 Observation of pupils/students/teachers	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.11 Observation of lessons	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.12 Practical task (e.g., micro teaching)	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.13 Project	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.14 Visiting an institution	/NOT INDICATED /NO /YES, INDIVIDUAL /YES, PAIRWORK /YES, GROUPWORK /YES, INDIVIDUAL AND PAIRWORK /YES, INDIVIDUAL AND GROUPWORK /YES, PAIRWORK AND GROUPWORK /YES, INDIVIDUAL, PAIRWORK AND GROUPWORK
5.15 Other	TEXT
5.16 Is there a school-based component of the course?	/NO /YES, INDICATED BY LESSON NUMBERS /YES, INDICATED BY TASK/ACTIVITY /OTHER

6. LITERATURE	
Aim	To record obligatory, recommended, and optional literature (indicating foreign language literature, and those published after the year 2000)
6.1 Is there a literature list included in the course description?	/NO /YES
6.1 LITERATURE - MANDATORY	
6.2.1 Number of mandatory literature	TEXT
6.2.2 Number of foreign language literature	TEXT
6.2.3 Number of literature published after 2000	TEXT
6.2 LITERATURE - RECOMMENDED	
6.3.1 Number of recommended literature	TEXT
6.3.2 Number of foreign language literature	TEXT
6.3.3 Number of literature published after 2000	TEXT
6.3 LITERATURE - OPTIONAL	
6.4.1 Number of optional literature	TEXT
6.42 Number of foreign language literature	TEXT
6.4.3 Number of literature published after 2000	TEXT

7. TEACHING-RESEARCH NEXUS	
Aim	To record different aspects of the integration of research into teaching based on the model of teaching-research nexus (Healey & Jenkins, 2009)
7.1. TEACHING-RESEARCH NEXUS – RESEARCH-LED	
7.1.1 Is there any research (results) integrated into the course?	/NOT INDICATED /NO /YES, TO SOME EXTENT /YES, THE WHOLE COURSE IS BASED ON IT
7.1.2 Timely nature of lecturer's research	/NOT INDICATED /CURRENT /PAST /CURRENT AND PAST
7.1.3 Who carried out the research?	/NOT INDICATED /LECTURER /OTHER STAFF FROM THE UNIVERSITY /EXTERNAL /LECTURER AND OTHER UNIVERSITY STAFF /LECTURER AND EXTERNAL /OTHER UNIVERSITY STAFF AND EXTERNAL /LECTURER, OTHER UNIVERSITY STAFF AND EXTERNAL
7.2. TEACHING-RESEARCH NEXUS – RESEARCH-TUTORED	
7.2.1 Do students discuss research?	/NOT INDICATED /NO /YES
7.2.2 Do students write about research?	/NOT INDICATED /NO

	/YES
7.3. TEACHING-RESEARCH NEXUS – RESEARCH-ORIENTED	
7.3.1 Do students learn about research methods?	/NOT INDICATED /NO /YES, RESEARCH METHODS IN GENERAL /YES, EDUCATIONAL RESEARCH METHODS /YES, GENERAL AND EDUCATIONAL RESEARCH METHODS
7.3.2 Qualitative approaches	/NOT INDICATED /NO /YES
7.3.3 Quantitative approaches	/NOT INDICATED /NO /YES
7.3.4 Methods of quality control	/NOT INDICATED /NO /YES
7.3.5 Scientific approaches	/NOT INDICATED /NO /YES
7.3.6 Linking research with models, theories of learning and teaching	/NOT INDICATED /NO /YES
7.4. TEACHING-RESEARCH NEXUS – RESEARCH-BASED	
7.4.1 Do students conduct research?	/NOT INDICATED /NO /YES
7.5 TEACHING-RESEARCH NEXUS – GENERAL IMPRESSIONS	
7.5.1 How are students treated?	/NOT INDICATED /AS AUDIENCE (PASSIVE ROLE, TEACHER FOCUSED) /AS PARTICIPANTS (ACTIVE ROLE, STUDENT FOCUSED) /AS AUDIENCE AND AS PARTICIPANTS
7.5.2 What is emphasised?	/NOT INDICATED /RESEARCH CONTENT /RESEARCH PROCESSES AND PROBLEMS /RESEARCH CONTENT, PROCESSES AND PROBLEMS

8. RESEARCH-RELATED ACTIVITIES	
Aim	To record research-related course activities (e.g., observations, interviews, dealing with literature, etc.)
8.1 Is there any research-related activity (in its broadest sense) in the course description?	/NOT INDICATED /NO /YES
8.2 RESEARCH-RELATED ACTIVITIES – WHAT ARE THESE ACTIVITIES?	
8.2.1 Discussion	/NOT INDICATED /NO /YES
8.2.2 Reflection	/NOT INDICATED /NO

	/YES
8.2.3 Observation	/NOT INDICATED /NO /YES
8.2.4 Familiarize themselves with the school as a research field	/NOT INDICATED /NO /YES
8.2.5 Writing research plan - questions	/NOT INDICATED /NO /YES
8.2.6 Conducting interviews	/NOT INDICATED /NO /YES
8.2.7 Dealing with literature	/NOT INDICATED /NO /YES
8.2.8 Comparative analysis of pupils	/NOT INDICATED /NO /YES
8.2.9 Measure something in the classroom	/NOT INDICATED /NO /YES
8.2.10 Other	TEXT
8.3. RESEARCH-RELATED ACTIVITIES – GENERAL IMPRESSIONS	
8.3.1 Is this activity connected to pupils/school?	/NOT INDICATED /NO /YES
8. 3.2 Do they conduct it individually, pairs or groups?	/NOT INDICATED /INDIVIDUALLY /IN PAIRS /IN GROUPS /INDIVIDUALLY AND IN PAIRS /INDIVIDUALLY AND IN GROUPS /IN PAIRS AND GROUPS /INDIVIDUALLY, IN PAIRS AND GROUPS
8.3.3 Is there a product of the activity?	/NOT INDICATED /NO /YES
8.3.4 What is the product?	TEXT

Appendix 2. Interview consent form

Interview Consent Form

Research project title: The evolution of teacher education programs in different countries with a special focus on the role of practicum in developing teacher competences in teacher education programs

Researcher: Csilla Pesti, ELTE Budapest

Supervisor: János Győri, ELTE Budapest

Co-supervisors: Erika Kopp, ELTE Budapest, Christian Kraler, UIBK Innsbruck

The interview will take 40-50 minutes. We do not anticipate that there are any risks associated with your participation, but you have the right to stop the interview or withdraw from the research at any time.

Thank you for agreeing to be interviewed as part of the above research project. Ethical procedures for academic research require that interviewees agree to be interviewed and how the information contained in their interview will be used. This consent form is necessary for us to ensure that you understand the purpose of your involvement and that you agree to the conditions of your participation. Would you, therefore, listen to the information about the project provided by the interviewer and then sign this form to certify that you approve the following:

- the interview will be recorded, and a transcript will be produced
- you will be sent the transcript and given the opportunity to correct any factual errors
- Csilla Pesti will analyse the transcript of the interview
- access to the interview transcript will be limited to Csilla Pesti and academic colleagues and researchers with whom she might collaborate as part of the research process
- any summary interview content, or direct quotations from the interview, that is made available through academic publication or other academic outlets will be anonymised so that you cannot be identified, and care will be taken to ensure that other information in the interview that could identify yourself is not revealed
- the actual recording will be destroyed after the transcript is produced
- any variation of the conditions above will only occur with your further explicit approval

Participants name: _____

Signature: _____

Date: _____

Contact Information

If you have any further questions or concerns about this study, please contact:

Name of the researcher: Csilla Pesti

E-mail: csilla.pesti@ppk.elte.hu

Appendix 3. Interview guideline

Interview Guide

Date:

Start/End:

Interviewer:

Profile of the interviewee:

Colour code:

- **Question**
- **Prompts and probes**
- ***Linking text***

Welcome ...

Brief intro to the project ...

Why are we doing this interview? ...

Consent to participate in and record the interview ...

STUDIES

Q1: Can you please say a few words about your studies?

Q1.1: What kind/type of teacher education programme are you in?

Q1.2: What are your disciplines?

Q1.3: What year are you in?

GENERAL PRACTICE EXPERIENCE

As far as I know, you have started/completed your school-based teaching practice.

Q2: According to your opinion, what is the goal or role of school-based teaching practice?

Q3: Can you identify the most valuable learning experiences during your practice?

Q4: What are/were some of the teaching-related problems during your practice?

Q4.1: How did you solve them?

Q5: What are some aspects of the teaching practice that could be improved?

Q5.1: Do you have any suggestion how to do it?

RESEARCH EXPERIENCE

Q6: What do you think of when you hear the word research?

Q7: What kind of research activities are/were you involved during your practice?

Q7.1: Please describe how these go/went.

Q7.2: Who is/was involved in these research activities?

Q8: How do/did these research activities contribute to your growth as a teacher?

Q8.1: What did you learn from them?

Q9: Do you think that research could help your work as a teacher in the future?

Q9.1: If yes, in what sense? (Consuming or producing research)

RESEARCH COMPETENCE

Q10: What kind of competences do you need to have in order to conduct research?

Q10.1: Knowledge?

Q10.2: Skills?

Q10.3: Attitude?

Q11: How do/did the practice help you in developing these competences?

Q11.1: Do/Did you have any research-related tasks during the practice?

Q11.2: Do/Did you have university courses regarding research methodology?

Appendix 4. Illustration of the data analysis

FLOW CHART OF DATA ANALYSIS (DATA COLLECTED BY INTERVIEWS AND GROUP INTERVIEWS)

1. INTERVIEWS

1.1 Codebook (Austria)

Having the interviews transcribed and coded following the three different steps of coding as Strauss (1987) suggests, the following codes have emerged (the number indicates their occurrence):

1 RESEARCH	0
1.1 topic of research projects	9
1.2 rationale	6
1.3 personal motivation to conduct research	2
1.4 research in a broader context	5
1.5 aim of the research	3
1.6 participants in the research	13
1.7 scale of research	3
1.8 research methods	14
1.9 justification of the method	1
1.10 stakeholders in the research project	12
1.11 doubts about the research project	1
1.12 description of the research project	12
1.13 research results	1
1.14 contribution of research to teaching	16
1.15 what research is	6
1.16 problems while doing research	2
1.17 conflict of roles	2
1.18 critiques regarding the research project	11
1.19 teachers' research activities	5
1.20 transfer from other research experience	5
1.21 qualitative-quantitative gap	2
1.22 research group	2
1.23 learning about research - courses	5
1.24 connection of research to the thesis	3
1.25 research competence	5
2 OTHER	**0**
2.1 opinion about the teaching profession	3
2.2 other teaching experience	4
2.3 personal experience about teaching	1
2.4 opinion about teachers	2
2.5 other personal story	1
2.6 other research experience	4
2.7 plans for the future	2

3 STUDIES	0
3.1 description	1
3.2 state of studies at the moment	7
3.3 studied subjects/disciplines	6
3.4 finish studies	2
3.5 activities in TE programmes	7
3.6 deficiency in TE programmes	11
3.7 workload	4
3.8 quit the program	1
3.9 university professors	3
3.10 opinion about the department for TE	6
3.11 reason to enrol in TE program	2
4 PRACTICE	**0**
4.1 general description	6
4.2 description of the school	11
4.3 activities in practice	51
4.4 activities - outside of the school	2
4.5 teaching method	2
4.6 description of activities	28
4.7 stakeholders in practice	27
4.8 amount of teaching	5
4.9 not enough teaching	4
4.10 opinion about the practice	16
4.11 importance of practice	14
4.12 missed learning opportunity	2
4.13 theory vs practice	9
4.14 critiques regarding the practice	9
4.15 mentor teacher	9
4.16 problem situation school	4
4.17 problem sit. at school - solution	2
4.18 preparation for teaching	4
4.19 relation of the two subjects	1
4.20 following courses	4
4.21 description of the subjects	1
4.22 attitudes in practice	1
4.23 transition (student role - teacher role)	3

1.2 Themes based on the codes (Austria)

Themes were created by arranging the data into conceptual categories and then creating themes.

Theme 1: Studies

Personal opinion about teaching and motivation to become a teacher

The story of student teachers. Chronological presentation of events

Different aspects of the ITE programmes

University professors

Theme 2: School-based teaching practice

The story of school-based teaching practice from student teachers' point of view

Importance of practice

Practice school

Actors in practice

Confrontation with the world of work

Theme 3: Research experience during the school-based teaching practice

Preparation to conduct research

Educational relevance of the research topics

Methodological considerations

Actors involved in the research project

1.3 Codebook (Hungary)

Having the interviews transcribed and coded following the three different steps of coding as Strauss (1987) suggests, the following codes have emerged (the number indicates their occurrence):

1 RESEARCH	0
1.1 topic of research projects	3
1.2 rationale	1
1.3 aim of the research	1
1.4 participants in the research	2
1.5 scale of research	1
1.6 research methods	4
1.7 stakeholders in the research project	1
1.8 description of the research project	2
1.9 contribution of research to teaching	4
1.10 problems while doing research	2
1.11 teachers' research activities	3
1.12 research group	2
1.13 research competence	5
1.14 association	4
1.15 connection to thesis	2
1.16 use of research in the future	2
1.17 being a research subject	1
1.18 preparation to do research	4
2 OTHER	**0**
2.1 other teaching experience	3

4 PRACTICE	0
4.1 description of the school	5
4.2 activities in practice	8
4.3 stakeholders in practice	6
4.4 not enough teaching	4
4.5 opinion about the practice	1
4.6 importance of practice	4
4.7 missed learning opportunity	2
4.8 theory vs practice	7
4.9 critiques regarding the practice	10
4.10 mentor teacher	7
4.11 problem situation school	3
4.12 problem situations at school - solution	1
4.13 preparation for teaching	5
4.14 description of the subjects	1
4.15 transition (student role - teacher role)	2
4.16 development	2
4.17 learnt during the practice	7
4.18 previous experience as a pupil	1
4.19 knowing the pupils	1
4.20 writing dissertation during practice	1

2.2 personal experience about teaching	1
3 STUDIES	**0**
3.1 description	2
3.2 state of studies at the moment	4
3.3 studied subjects/disciplines	2
3.4 finish studies	1

1.4 Themes based on the codes (Hungary)

Themes were created by arranging the data into conceptual categories and then creating themes.

Theme 1: School-based teaching practice

The practice school

Student teachers' activities during the practice

Student teachers' learning during the practice

Stakeholders

Theory vs practice

Theme 2: Research experience during the school-based teaching practice

Preparation to do research

Student teachers' research-related activities

Methodological considerations

Research in the school context

2. GROUP INTERVIEWS

2.1 Codebook (Austria)

Having the interviews transcribed and coded following the three different steps of coding as Strauss (1987) suggests, the following codes have emerged (the number indicates their occurrence):

1 learning through research	2	30 relevance of educational research	4
2 educational research in thesis	1	31 discuss educational research	3
3 solving problems with research	2	32 missed learning opportunity	4
4 resistance to conduct research	5	33 doing research with uni. staff	3
5 collaboration	3	34 university staff's research	22
6 non-research-related ways of solving problems	1	35 thesis topic	7
7 good teacher	1	36 uni. courses that have integ. research	1
8 importance of research	2	37 preparation for research	12
9 teachers doing research	2	38 timing of the research	1
10 methodological preference	2	39 university preparation for conducting research	10
11 influence of one discipline on research attitude	4	40 description of the research process	8
12 previous research experience	3	41 subjects of research	4

13 research for innovative teaching	1
14 integrating own research interest into teaching	2
15 manner of conducting research	1
16 methodology	1
17 qualitative-quantitative	3
18 pupils doing research	2
19 scale of research	4
20 connecting the two subjects with research	1
21 students' perception of research	3
22 students' feelings about research	2
23 putting research in a broader context	2
24 empowering practitioners to do research	1
25 involvement in a university research project	4
26 challenges of doing research	8
27 theory-practice gap	8
28 reading educational research	5
29 goal of the research	9

42 support while conducting research	5
43 challenges while conducting research	6
43.1 school hindering research	12
44 university expectations	1
45 data collection method	14
46 choosing a research topic	8
47 learnt from the project	4
48 results of a research project	8
49 description of the research project	10
50 motivation to do research	9
51 association game - research	8
52 school-university project	1
53 teaching experience from before	1
53.1 tutoring pupils	2
54 pupils doing research	2
55 work with groups outside of school	1
56 non-teaching related activity	4

2.2 Themes based on the codes (Austria)

Themes were created by arranging the data into conceptual categories and then creating themes.

Theme 1. Research from student teachers' point of view

students' perception of research

students' feelings about research

challenges of doing research

goal of research

the relevance of educational research

solving problems with research

resistance to conduct research

non-research-related ways of solving problems

importance of research

Theme 2. Preparation for conducting research

previous research experience

preparation for research

university preparation for conducting research

Theme 3. Methodological considerations

collaboration

methodological preference

the manner of conducting research

methodology

qualitative-quantitative

scale of research

missed learning opportunity

data collection method

Theme 4. University's influence on research

involvement in a university research project

doing research with uni. staff

university courses that have integrated research

university staff's research

the timing of the research

university expectations

Theme 5. School's influence on research

pupils doing research

school hindering research

school-university project

Theme 6. Student teachers' learning through research

theory-practice gap

learning through research

influence of one discipline on research attitude

connecting the two subjects with research

reading educational research

discuss educational research

support while conducting research

challenges during conducting

research

motivation to do research

association game - research

Missed learning opportunity

Theme 7. Educational relevance of research conducted by student teachers

research for innovative teaching

integrating own research interest into teaching

putting research in a broader context

thesis topic

description of the research process

subjects of research

choosing a research topic

results of the research project

description of the research project

teachers doing research

2.3 Codebook (Hungary)

Having the interviews transcribed and coded following the three different steps of coding as Strauss (1987) suggests, the following codes have emerged (the number indicates their occurrence):

1 learning through research	2
2 professional development	2
3 educational research in thesis	3
4 solving problems with research	2
5 resistance to conduct research	8
8 good teacher	9
9 importance of research	1
10 teachers doing research	2
11 methodological preference	1
13 previous research experience	3
14 research for innovative teaching	1
15 integrating own research int. into teaching	1
18 qualitative-quantitative	4
19 pupils doing research	2
21 connecting the two subjects with research	1
26 involvement in a university research project	1
28 theory-practice gap	1
30 goal of the research	2

34 doing research with uni. staff	3
35 university staff's research	9
36 thesis topic	2
37 uni. courses that have integ. research	5
38 preparation for research	2
39 timing of the research	1
40 uni. prep. for conducting research	11
42 subjects of research	1
43 support while conducting research	3
44 challenges while conducting research	1
45 university expectations	1
46 data collection method	3
47 choosing a research topic	2
49 results of a research project	1
50 description of the research project	2
51 motivation to do research	1
52 association game - research	14

2.4 Themes based on the codes (Hungary)

Themes were created by arranging the data into conceptual categories and then creating themes.

Theme 1. Research from student teachers' point of view

goal of research

solving problems with research

resistance to conduct research

importance of research

Theme 2. Preparation for conducting research

previous research experience

preparation for research

university preparation for conducting research

Theme 3. Methodological considerations

collaboration

methodological preference

qualitative-quantitative

data collection method

Theme 4. University's influence on research

involvement in a university research project

doing research with uni. staff

university courses that have integrated research

university staff's research

the timing of the research

university expectations

Theme 5. Student teachers' learning through research

theory-practice gap

learning through research

connecting the two subjects with research

support while conducting research

challenges during conducting

research

motivation to do research

association game - research

professional development

Theme 6. Educational relevance of research conducted by student teachers

research for innovative teaching

integrating own research interest into teaching

thesis topic

subjects of research

choosing a research topic

results of the research project

description of the research project

teachers doing research

Appendix 5. Group interview guideline

Group interview guide

Date:

Start:

End:

Venue:

Interviewer:

The number of participants:

Colour code:

- **Question**
- **Prompts and probes**
- ***Linking text***

Welcome ...

Brief intro to the project ...

Why are we doing this interview? ...

Consent to participate in and record the interview ...

GENERAL PRACTICE EXPERIENCE

Q1: What is the role of the school-based teaching practice?

Q1.1: What is its importance?

Q1.2: What makes the practice a good experience?

Q1.3: What makes the practice a bad experience?

RESEARCH EXPERIENCE

Q2: What do you think of when you hear the word „research"?

Q3: Do you think that research could help your work as a teacher in the future?

Q3.1: If yes, in what sense? (Consuming or producing research)

RESEARCH-LEARNING NEXUS I

Q4: Have your lecturers integrate their own research findings into their lectures?

Q4.1: What have you learnt from your professors about their own research?

Q4.2: How could you use it during your practice?

Q5: Have you learnt about research methods and techniques?

Q5.1: Where and how did you learn about research methods and techniques?

Q6: Have you undertaken your own projects, individually or in teams?

Q6.1: Please describe your own research projects (preparation, activities, participants, challenges)

Q7: Have you assisted the staff in their research?

Q7.1: Where you involved in your professors' research?

Q7.2: If yes, how did it go? How could you use this in your practice?

Q8: Have you gained experience in research and consultancy through work-based learning?

Q8.1: What kind of research did you do within the classroom?

Appendix 6. Document Analysis – ITE, HU case, MA: Frequencies

2.1 Field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pedagogy	9	50,0	50,0	50,0
	Pedagogy and psychology	2	11,1	11,1	61,1
	Psychology	7	38,9	38,9	100,0
	Total	18	100,0	100,0	

2.2 Other field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	100,0	100,0	100,0

2.3 ECTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	27,8	27,8	27,8
	2	13	72,2	72,2	100,0
	Total	18	100,0	100,0	

2.4 Number of lessons/semester

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15	1	5,6	5,6	5,6
	30	17	94,4	94,4	100,0
	Total	18	100,0	100,0	

2.5 Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lecture	6	33,3	33,3	33,3
	Practical training course	12	66,7	66,7	100,0
	Total	18	100,0	100,0	

2.6 Proposed semester

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	44,4	44,4	44,4
	2	4	22,2	22,2	66,7
	3	3	16,7	16,7	83,3
	4	2	11,1	11,1	94,4
	5	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

2.7 Form of assessment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3 graded assessment	2	11,1	11,1	11,1
	Colloquium	6	33,3	33,3	44,4
	Practical assessment	10	55,6	55,6	100,0
	Total	18	100,0	100,0	

3.0 Where are the competences indicated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The competences are indicated in the course description	18	100,0	100,0	100,0

3.1.12 Other knowledge (focusing on research related knowledge)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	83,3	83,3	83,3
	Has knowledge about methods of inquiry for revealing the reality of schools	1	5,6	5,6	88,9
	Has knowledge about recent scientific results regarding cognitive processes and their development	1	5,6	5,6	94,4
	Has knowledge about the methods of getting to know pupils/students	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

3.2.4 Monitoring, adapting and assessing teaching/learning objectives and processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	100,0	100,0	100,0

3.2.5 Collecting, analysing, interpreting evidence and data (school learning outcomes, external assessments results) for professional decisions and teaching/learning improvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	100,0	100,0	100,0

3.2.6 Using, developing and creating research knowledge to inform practices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	88,9	88,9	88,9
	Yes	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

3.2.7 Collaborating with colleagues, parents and social services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	88,9	88,9	88,9
	Yes	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

3.2.8 Negotiation skills (social and political interactions with multiple educational stakeholders, actors and contexts)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	100,0	100,0	100,0

3.2.9 Reflective, metacognitive, interpersonal skills for learning individually and in professional communities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	15	83,3	83,3	83,3
	Yes	3	16,7	16,7	100,0
	Total	18	100,0	100,0	

3.2.11 Other skills

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	0	14	77,8	77,8	77,8
	Is able to interpret national and local measurement results	1	5,6	5,6	83,3
	Is able to orientate in professional literature	1	5,6	5,6	88,9
	Is able to read and analyse theoretical and empirical research papers related to educational sociology	1	5,6	5,6	94,4
	Is able to recognize and analyse problems	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

3.3.4 Dispositions to change, flexibility, ongoing learning and professional improvement, including study and research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	100,0	100,0	100,0

3.3.7 Critical attitudes toward one's own teaching (examining, discussing, questioning practices)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	94,4	94,4	94,4
	Yes	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

3.3.8 Dispositions to team-working, collaboration and networking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	100,0	100,0	100,0

3.3.10 Other disposition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	100,0	100,0	100,0
	Total	18	100,0	100,0	

4.0 Where is the content indicated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The content is indicated in the course description	18	100,0	100,0	100,0

4.2.12 Research Methodology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	27,8	27,8	27,8
	Not indicated	12	66,7	66,7	94,4
	Yes	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

4.3.1 Other content (Y/N)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	27,8	27,8	27,8
	Not indicated	10	55,6	55,6	83,3
	Yes	3	16,7	16,7	100,0
	Total	18	100,0	100,0	

4.3.2 What is the other content?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	83,3	83,3	83,3
	Innovative, researcher teacher	1	5,6	5,6	88,9
	Reflection on elements of the teaching-learning process and pedagogical situations Analysis of relevant topics and emerging problems with the reflective technique	1	5,6	5,6	94,4
	Sociometry	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

5.0 Are there course deliverables?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	44,4	44,4	44,4
	Yes	10	55,6	55,6	100,0
	Total	18	100,0	100,0	

5.1 Essay

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	50,0	50,0	50,0
	Not indicated	8	44,4	44,4	94,4
	Yes, individual	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

5.2 Active participation in the lessons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	22,2	22,2	22,2
	Not indicated	8	44,4	44,4	66,7
	Yes, groupwork	1	5,6	5,6	72,2
	Yes, individual	4	22,2	22,2	94,4
	Yes, pair work	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

5.3 Discussion, debate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	33,3	33,3	33,3
	Not indicated	8	44,4	44,4	77,8
	Yes, groupwork	2	11,1	11,1	88,9
	Yes, individual, pair work and group work	1	5,6	5,6	94,4
	Yes, pair work and groupwork	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

5.4 Situational exercise

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	50,0	50,0	50,0
	Not indicated	8	44,4	44,4	94,4
	Yes, pair work	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

5.5 Reflection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	33,3	33,3	33,3
	Not indicated	8	44,4	44,4	77,8
	Yes, individual	4	22,2	22,2	100,0
	Total	18	100,0	100,0	

5.6 Creating a pedagogical dictionary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	55,6	55,6	55,6
	Not indicated	8	44,4	44,4	100,0
	Total	18	100,0	100,0	

5.7 Source analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	50,0	50,0	50,0
	Not indicated	8	44,4	44,4	94,4
	Yes, individual	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

5.8 Case analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	44,4	44,4	44,4
	Not indicated	8	44,4	44,4	88,9
	Yes, individual	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

5.9 Observation of pupils/students/teachers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	44,4	44,4	44,4
	Not indicated	8	44,4	44,4	88,9
	Yes, individual	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

5.10 Observation of lessons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	50,0	50,0	50,0
	Not indicated	8	44,4	44,4	94,4
	Yes, individual	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

5.11 Practical task (e.g., micro teaching)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	44,4	44,4	44,4
	Not indicated	8	44,4	44,4	88,9
	Yes, individual and pair work	1	5,6	5,6	94,4
	Yes, pair work	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

5.12 Project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	38,9	38,9	38,9
	Not indicated	8	44,4	44,4	83,3
	Yes, groupwork	1	5,6	5,6	88,9
	Yes, individual	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

5.13 Visiting an institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	50,0	50,0	50,0
	Not indicated	8	44,4	44,4	94,4
	Yes, pair work and groupwork	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

5.14 Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	16	88,9	88,9	88,9
	mini research project	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

5.15 Is there a school-based component of the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	77,8	77,8	77,8
	Yes, indicated by lesson numbers	2	11,1	11,1	88,9
	Yes, indicated by task/activity	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

6.0 Is there a literature list included in the course description?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	11,1	11,1	11,1
	Yes	16	88,9	88,9	100,0
	Total	18	100,0	100,0	

6.1.1 Number of mandatory literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	22,2	22,2	22,2
	3	1	5,6	5,6	27,8
	4	2	11,1	11,1	38,9
	5	4	22,2	22,2	61,1
	6	4	22,2	22,2	83,3
	7	1	5,6	5,6	88,9
	8	1	5,6	5,6	94,4
	21	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

6.1.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	100,0	100,0	100,0

6.1.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	22,2	22,2	22,2
	1	1	5,6	5,6	27,8
	2	3	16,7	16,7	44,4
	3	3	16,7	16,7	61,1
	4	3	16,7	16,7	77,8
	5	2	11,1	11,1	88,9
	6	1	5,6	5,6	94,4
	21	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

6.2.1 Number of recommended literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	13	72,2	72,2	72,2
	2	1	5,6	5,6	77,8
	4	1	5,6	5,6	83,3
	5	1	5,6	5,6	88,9
	8	1	5,6	5,6	94,4
	11	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

6.2.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	100,0	100,0	100,0

6.2.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	13	72,2	72,2	72,2
	2	2	11,1	11,1	83,3
	4	1	5,6	5,6	88,9
	5	1	5,6	5,6	94,4
	10	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

6.3.1 Number of optional literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	100,0	100,0	100,0

6.3.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	100,0	100,0	100,0

6.3.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	100,0	100,0	100,0

7.1.1 Is there any research (results) integrated into the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	18	100,0	100,0	100,0

7.1.2 Timely nature of lecturer's research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	18	100,0	100,0	100,0

7.1.3 Who carried out the research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	18	100,0	100,0	100,0

7.2.1 Do students discuss research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	100,0	100,0	100,0

7.2.2 Do students write about research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	94,4	94,4	94,4
	Yes	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

7.3.1 Do students learn about research methods?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	88,9	88,9	88,9
	Yes, educational research methods	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

7.3.2 Qualitative approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	11,1	11,1	11,1
	Not indicated	16	88,9	88,9	100,0
	Total	18	100,0	100,0	

7.3.3 Quantitative approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	5,6	5,6	5,6
	Not indicated	16	88,9	88,9	94,4
	Yes	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

7.3.4 Methods of quality control

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	11,1	11,1	11,1
	Not indicated	16	88,9	88,9	100,0
	Total	18	100,0	100,0	

7.3.5 Scientific approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	11,1	11,1	11,1
	Not indicated	16	88,9	88,9	100,0
	Total	18	100,0	100,0	

7.3.6 Linking research with models, theories of learning and teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	11,1	11,1	11,1
	Not indicated	16	88,9	88,9	100,0
	Total	18	100,0	100,0	

7.4.1 Do students conduct research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	77,8	77,8	77,8
	Yes	4	22,2	22,2	100,0
	Total	18	100,0	100,0	

7.5.1 How are students treated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	As audience (passive role, teacher focused)	8	44,4	44,4	44,4
	As audience and as participants	6	33,3	33,3	77,8
	As participants (active role, student focused)	4	22,2	22,2	100,0
	Total	18	100,0	100,0	

7.5.2 What is emphasised?

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	14	77,8	77,8	77,8
	Research content, processes and problems	2	11,1	11,1	88,9
	Research processes and problems	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

8.1 Is there any research-related activity (in its broadest sense) in the course description?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	38,9	38,9	38,9
	Not indicated	2	11,1	11,1	50,0
	Yes	9	50,0	50,0	100,0
	Total	18	100,0	100,0	

8.2.1 Discussion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	27,8	27,8	27,8
	Not indicated	9	50,0	50,0	77,8
	Yes	4	22,2	22,2	100,0
	Total	18	100,0	100,0	

8.2.2 Reflection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	22,2	22,2	22,2
	Not indicated	9	50,0	50,0	72,2
	Yes	5	27,8	27,8	100,0
	Total	18	100,0	100,0	

8.2.3 Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	33,3	33,3	33,3
	Not indicated	9	50,0	50,0	83,3
	Yes	3	16,7	16,7	100,0
	Total	18	100,0	100,0	

8.2.4 Familiarize themselves with the school as a research field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	44,4	44,4	44,4
	Not indicated	9	50,0	50,0	94,4
	Yes	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

8.2.5 Writing research plan - questions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	50,0	50,0	50,0
	Not indicated	9	50,0	50,0	100,0
	Total	18	100,0	100,0	

8.2.6 Conducting interviews

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	44,4	44,4	44,4
	Not indicated	9	50,0	50,0	94,4
	Yes	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

8.2.7 Dealing with literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	44,4	44,4	44,4
	Not indicated	9	50,0	50,0	94,4
	Yes	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

8.2.8 Comparative analysis of pupils

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	50,0	50,0	50,0
	Not indicated	9	50,0	50,0	100,0
	Total	18	100,0	100,0	

8.2.9 Measure something in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	44,4	44,4	44,4
	Not indicated	9	50,0	50,0	94,4
	Yes	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

8.2.10 Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	38,9	38,9	38,9
	Not indicated	9	50,0	50,0	88,9
	Yes	2	11,1	11,1	100,0
	Total	18	100,0	100,0	

8.3 Is this activity connected to pupils/school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	12	66,7	66,7	66,7
	Not indicated	2	11,1	11,1	77,8
	Yes	4	22,2	22,2	100,0
	Total	18	100,0	100,0	

8.4 Do they conduct it individually, pairs or groups?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Individually	4	22,2	22,2	22,2
	Not indicated	14	77,8	77,8	100,0
	Total	18	100,0	100,0	

8.5 Is there a product of the activity?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	11,1	11,1	11,1
	Not indicated	12	66,7	66,7	77,8
	Yes	4	22,2	22,2	100,0
	Total	18	100,0	100,0	

8.6 What is the product?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	14	77,8	77,8	77,8
	A paper presenting the research results	1	5,6	5,6	83,3
	Case study of one pupil	1	5,6	5,6	88,9
	Essay	1	5,6	5,6	94,4
	Presentation of the mini research	1	5,6	5,6	100,0
	Total	18	100,0	100,0	

Appendix 7. Document Analysis – ITE, HU case, undivided: Frequencies

2.1 Field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	1	5,9	5,9	5,9
	Pedagogy	6	35,3	35,3	41,2
	Pedagogy and psychology	1	5,9	5,9	47,1
	Practice	1	5,9	5,9	52,9
	Psychology	8	47,1	47,1	100,0
	Total	17	100,0	100,0	

2.2 Other field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	16	94,1	100,0	100,0
Missing	System	1	5,9		
Total		17	100,0		

2.3 ECTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	29,4	29,4	29,4
	2	10	58,8	58,8	88,2
	3	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

2.4 Number of lessons/semester

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15	4	23,5	23,5	23,5
	30	11	64,7	64,7	88,2
	40	1	5,9	5,9	94,1
	45	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

2.5 Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lecture	6	35,3	35,3	35,3
	Practical training course	1	5,9	5,9	41,2
	Seminar, introductory seminar	10	58,8	58,8	100,0
	Total	17	100,0	100,0	

2.6 Proposed semester

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	5,9	5,9	5,9
	11	2	11,8	11,8	17,6
	12	1	5,9	5,9	23,5
	2	2	11,8	11,8	35,3
	3	4	23,5	23,5	58,8
	4	3	17,6	17,6	76,5
	5	3	17,6	17,6	94,1
	6	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

2.7 Form of assessment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3 graded assessment	3	17,6	17,6	17,6
	Colloquium	6	35,3	35,3	52,9
	Practical assessment	8	47,1	47,1	100,0
	Total	17	100,0	100,0	

3.0 Where are the competences indicated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The competences are indicated in the course description	17	100,0	100,0	100,0

3.1.12 Other knowledge (focusing on research related knowledge)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	8	47,1	47,1	47,1
	Has knowledge about methods of inquiry for the revealing group and peer relations	4	23,5	23,5	70,6
	Has knowledge about the methods of getting to know pupils/students	3	17,6	17,6	88,2
	Has knowledge about the methods of getting to know pupils/students Has knowledge about methods of inquiry for the revealing group and peer relations Has knowledge about the role of reflective thinking	1	5,9	5,9	94,1
	Has knowledge about the role of reflective thinking	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

3.2.4 Monitoring, adapting and assessing teaching/learning objectives and processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

3.2.5 Collecting, analysing, interpreting evidence and data (school learning outcomes, external assessments results) for professional decisions and teaching/learning improvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	13	76,5	76,5	76,5
	Yes	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

3.2.6 Using, developing and creating research knowledge to inform practices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	94,1	94,1	94,1
	Yes	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

3.2.7 Collaborating with colleagues, parents and social services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	52,9	52,9	52,9
	Yes	8	47,1	47,1	100,0
	Total	17	100,0	100,0	

3.2.8 Negotiation skills (social and political interactions with multiple educational stakeholders, actors and contexts)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	94,1	94,1	94,1
	Yes	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

3.2.9 Reflective, metacognitive, interpersonal skills for learning individually and in professional communities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	64,7	64,7	64,7
	Yes	6	35,3	35,3	100,0
	Total	17	100,0	100,0	

3.2.11 Other skills

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	88,2	88,2	88,2
	Is able to identify and use professional literature when solving practice-related problems	1	5,9	5,9	94,1
	Is well-informed in the pedagogical and subject-specific literature Is able to analyse and interpret the research and development results of these areas	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

3.3.4 Dispositions to change, flexibility, ongoing learning and professional improvement, including study and research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	12	70,6	70,6	70,6
	Yes	5	29,4	29,4	100,0
	Total	17	100,0	100,0	

3.3.7 Critical attitudes toward one's own teaching (examining, discussing, questioning practices)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	12	70,6	70,6	70,6
	Yes	5	29,4	29,4	100,0
	Total	17	100,0	100,0	

3.3.8 Dispositions to team-working, collaboration and networking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	64,7	64,7	64,7
	Yes	6	35,3	35,3	100,0
	Total	17	100,0	100,0	

3.3.10 Other disposition

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	0	14	82,4	82,4	82,4
	Inequalities and fairness in the light of national and international measurements Pedagogical evaluation and evidence-based learning support methods	1	5,9	5,9	88,2
	Is open to cognition and gaining experience	1	5,9	5,9	94,1
	Total	17	100,0	100,0	

4.0 Where is the content indicated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The content is indicated in the course description	17	100,0	100,0	100,0

4.2.12 Research Methodology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

4.3.1 Other content (Y/N)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	35,3	35,3	35,3
	Yes	11	64,7	64,7	100,0
	Total	17	100,0	100,0	

4.3.2 What is the other content?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	6	35,3	35,3	
	Change management, communication theory, organization theory	1	5,9	5,9	
	Cognitive processes, attention, memory, thinking, intelligence, creativity	1	5,9	5,9	
	Communication theory	1	5,9	5,9	
	Feelings	1	5,9	5,9	
	Informatics	1	5,9	5,9	
	Moral development	1	5,9	5,9	
	Organization theory, communication theory	1	5,9	5,9	
	Portfolio	1	5,9	5,9	
	Rights	1	5,9	5,9	
	Thinking processes	1	5,9	5,9	
	Views	1	5,9	5,9	
	A gyermek megismerésének módszerei, keretei, etikai szempontjai, nehézségei. A módszerek közül kiemelten a megfigyelésre (célok, eszközök, szempontok stb.) vonatkozóan. Egyéb a pedagógiai munka során alkalmazható módszerek megismerése (pl. családlátogatás)	1	5,9	5,9	
	Total	17	100,0	100,0	

5.0 Are there course deliverables?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	29,4	29,4	29,4
	Yes	12	70,6	70,6	100,0
	Total	17	100,0	100,0	

5.1 Essay

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	41,2	41,2	41,2
	Not indicated	5	29,4	29,4	70,6
	Yes, individual	4	23,5	23,5	94,1
	Yes, pair work	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.2 Active participation on the lessons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	41,2	41,2	41,2
	Not indicated	5	29,4	29,4	70,6
	Yes, individual, pair work and group work	5	29,4	29,4	100,0
	Total	17	100,0	100,0	

5.3 Discussion, debate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	29,4	29,4	29,4
	Not indicated	5	29,4	29,4	58,8
	Yes, groupwork	1	5,9	5,9	64,7
	Yes, individual	2	11,8	11,8	76,5
	Yes, pair work and group work	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

5.4 Situational exercise

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	47,1	47,1	47,1
	Not indicated	5	29,4	29,4	76,5
	Yes, individual	1	5,9	5,9	82,4
	Yes, individual, pair work and group work	1	5,9	5,9	88,2
	Yes, pair work	1	5,9	5,9	94,1
	Yes, pair work and group work	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.5 Reflection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	29,4	29,4	29,4
	Not indicated	5	29,4	29,4	58,8
	Yes, individual	4	23,5	23,5	82,4
	Yes, individual and pair work	2	11,8	11,8	94,1
	Yes, pair work and group work	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.6 Creating a pedagogical dictionary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	64,7	64,7	64,7
	Not indicated	5	29,4	29,4	94,1
	Yes, individual	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.7 Source analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	64,7	64,7	64,7
	Not indicated	5	29,4	29,4	94,1
	Yes, individual	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.8 Case analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	52,9	52,9	52,9
	Not indicated	5	29,4	29,4	82,4
	Yes, individual	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

5.9 Observation of pupils/students/teachers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	47,1	47,1	47,1
	Not indicated	5	29,4	29,4	76,5
	Yes, individual	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

5.10 Observation of lessons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	58,8	58,8	58,8
	Not indicated	5	29,4	29,4	88,2
	Yes, individual	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

5.11 Practical task (e.g., micro teaching)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	58,8	58,8	58,8
	Not indicated	5	29,4	29,4	88,2
	Yes, groupwork	1	5,9	5,9	94,1
	Yes, individual	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.12 Project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	64,7	64,7	64,7
	Not indicated	5	29,4	29,4	94,1
	Yes, groupwork	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.13 Visiting an institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	12	70,6	70,6	70,6
	Not indicated	5	29,4	29,4	100,0
	Total	17	100,0	100,0	

5.14 Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	12	70,6	70,6	70,6
	The development plan, Organizational analysis of a school	1	5,9	5,9	76,5
	Development plan, reflection	1	5,9	5,9	82,4
	Interview	1	5,9	5,9	88,2
	Lecture topics, mandatory literature and its application in problem solution	1	5,9	5,9	94,1
	Online test, development of online learning environment	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.15 Is there a school-based component of the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	12	70,6	70,6	70,6
	Yes, indicated by lesson numbers	1	5,9	5,9	76,5
	Yes, indicated by task/activity	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

6.0 Is there a literature list included in the course description?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	11,8	11,8	11,8
	Yes	15	88,2	88,2	100,0
	Total	17	100,0	100,0	

6.1.1 Number of mandatory literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	11,8	11,8	11,8
	1	3	17,6	17,6	29,4
	2	3	17,6	17,6	47,1
	3	1	5,9	5,9	52,9
	4	4	23,5	23,5	76,5
	5	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

6.1.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.1.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	11,8	11,8	11,8
	1	3	17,6	17,6	29,4
	2	3	17,6	17,6	47,1
	3	1	5,9	5,9	52,9
	4	4	23,5	23,5	76,5
	5	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

6.2.1 Number of recommended literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	5,9	5,9	5,9
	2	1	5,9	5,9	11,8
	3	1	5,9	5,9	17,6
	4	4	23,5	23,5	41,2
	5	3	17,6	17,6	58,8
	6	1	5,9	5,9	64,7
	7	2	11,8	11,8	76,5
	11	2	11,8	11,8	88,2
	12	1	5,9	5,9	94,1
	14	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

6.2.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	88,2	88,2	88,2
	2	1	5,9	5,9	94,1
	5	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

6.2.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	23,5	23,5	23,5
	2	1	5,9	5,9	29,4
	4	2	11,8	11,8	41,2
	5	5	29,4	29,4	70,6
	6	2	11,8	11,8	82,4
	9	1	5,9	5,9	88,2
	10	1	5,9	5,9	94,1
	12	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

6.3.1 Number of optional literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.3.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.3.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

7.1.1 Is there any research (results) integrated into the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	17	100,0	100,0	100,0

7.1.2 Timely nature of lecturer's research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	17	100,0	100,0	100,0

7.1.3 Who carried out the research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	17	100,0	100,0	100,0

7.2.1 Do students discuss research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

7.2.2 Do students write about research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	15	88,2	88,2	88,2
	Yes	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

7.3.1 Do students learn about research methods?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

7.3.2 Qualitative approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	17	100,0	100,0	100,0

7.3.3 Quantitative approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	17	100,0	100,0	100,0

7.3.4 Methods of quality control

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	17	100,0	100,0	100,0

7.3.5 Scientific approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	17	100,0	100,0	100,0

7.3.6 Linking research with models, theories of learning and teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	17	100,0	100,0	100,0

7.4.1 Do students conduct research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	15	88,2	88,2	88,2
	Yes	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

7.5.1 How are students treated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	As audience	11	64,7	64,7	64,7
	As participants	6	35,3	35,3	100,0
	Total	17	100,0	100,0	

7.5.2 What is emphasised?

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	13	76,5	76,5	76,5
	Research content	3	17,6	17,6	94,1
	Research content, processes and problems	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

8.1 Is there any research-related activity (in its broadest sense) in the course description?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	58,8	58,8	58,8
	Yes	7	41,2	41,2	100,0
	Total	17	100,0	100,0	

8.2.1 Discussion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	17,6	17,6	17,6
	Not indicated	10	58,8	58,8	76,5
	Yes	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

8.2.2 Reflection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	17,6	17,6	17,6
	Not indicated	10	58,8	58,8	76,5
	Yes	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

8.2.3 Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	17,6	17,6	17,6
	Not indicated	10	58,8	58,8	76,5
	Yes	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

8.2.4 Familiarize themselves with the school as a research field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	41,2	41,2	41,2
	Not indicated	10	58,8	58,8	100,0
	Total	17	100,0	100,0	

8.2.5 Writing research plan - questions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	41,2	41,2	41,2
	Not indicated	10	58,8	58,8	100,0
	Total	17	100,0	100,0	

8.2.6 Conducting interviews

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	29,4	29,4	29,4
	Not indicated	10	58,8	58,8	88,2
	Yes	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

8.2.7 Dealing with literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	35,3	35,3	35,3
	Not indicated	10	58,8	58,8	94,1
	Yes	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

8.2.8 Comparative analysis of pupils

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	35,3	35,3	35,3
	Not indicated	10	58,8	58,8	94,1
	Yes	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

8.2.9 Measure something in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	35,3	35,3	35,3
	Not indicated	10	58,8	58,8	94,1
	Yes	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

8.2.10 Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	41,2	41,2	41,2
	Not indicated	10	58,8	58,8	100,0
	Total	17	100,0	100,0	

8.3 Is this activity connected to pupils/school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

8.4 Do they conduct it individually, pairs or groups?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Individually and in pairs	1	5,9	5,9	5,9
	Not indicated	16	94,1	94,1	100,0
	Total	17	100,0	100,0	

8.5 Is there a product of the activity?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

8.6 What is the product?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	14	82,4	82,4	82,4
	Essay	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

Appendix 8. Document Analysis – Comparison of ITE programmes in Hungary

	Previous programme (MA)	Current programme (undivided)
General		
Number of course descriptions	18	17
Length of studies	5 semesters	12 semesters
ECTS of the pedagogical-psychological module	40	28
Background information		
Field	50% pedagogical 38,9% psychological 11,1% pedagogical-psychological	35,3% pedagogical 47,1% psychological 11,8% pedagogical-psychological
Type	66,7% seminars 33,3% lectures	58,8% seminars 35,3% lectures 5,9% practical training course
Distribution of courses over the study programme	the first semester is mostly course-based (44,4% of the courses are planned for the first semester), and a decreasing tendency of course numbers implies that the emphasis is being put on practicum	the major part of the pedagogical-psychological module's courses (58,8%) are planned for the first and second year during those semesters when student teachers conduct their practicum, the number of courses from the pedagogical-psychological module is decreased: from the 7th to the 10th semesters there is no pedagogical-psychological course planned, and in the 11th and 12th semesters (the last year) there are 3 courses planned
Forms of assessment	55,6% practical assessment 33,3% colloquium 11,1% graded assessment	47,1% practical assessment 35,3% colloquium 16,7% graded assessment
Competences (focusing on research-related ones)		
Where are the competences included?	on the level of course descriptions	on the level of course descriptions
Course descriptions that included at least one knowledge component related to research	16,7% knowledge	52,9%
Course descriptions that included at least one skill component related to research	38,9% skills	82,3%
Course descriptions that included at least one attitude component related to research	5,6% attitude	58,8%
Content		
Course descriptions that included research-related content	16,7%	5,9% (but the evidence-based approach is mentioned on the programme level and is applicable to all courses)
Course deliverables		
Course descriptions that indicated deliverables	55,6%	70,6%

Type of deliverables	5,6% essay 22,2% reflection 16,7% source/case analysis 16,7% observation (pupils, teacher, lessons) 11,1% mini research project	29,4% essay 41,5% reflection 23,5% source/case analysis 35,3% observation (pupils, teacher, lessons) 5,9% organizational analysis of a school 5,9% interview 5,9% application of literature in problem solution
Literature		
Mandatory literature	77,8%	88,2%
Recommended literature	27,8%	100,0%
Time of publication	Mostly after 2000	Mostly after 2000
Language of publication	only Hungarian	dominantly Hungarian, only a very few foreign languages
Teaching-research nexus		
Student teachers write about research	5,6%	not indicated
Student teachers discuss research	not indicated	17,6%
Student teachers learn about research methods	11,1%	not indicated
Student teachers conduct research	22,2%	11,8%
Research-related activities of student teachers		
Reflection	27,8%	23,5%
Observation	16,7%	23,5%
Familiarize themselves with the school as a research field	5,6%	not indicated
Conduct interviews	5,6%	11,8%
Deal with literature	5,6%	5,9%
Measure something in the classroom	5,6%	5,9%
Comparative analysis of pupils	not indicated	5,9%

Appendix 9. Document Analysis – ITE, AT case, undivided: Frequencies

2.1 Field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pedagogy	11	100,0	100,0	100,0

2.2 Other field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

2.3 ECTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2,0	4	36,4	36,4	36,4
	3,0	3	27,3	27,3	63,6
	4,0	1	9,1	9,1	72,7
	5,0	3	27,3	27,3	100,0
	Total	11	100,0	100,0	

2.4 Number of lessons/semester

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	4	36,4	36,4	36,4
	3	3	27,3	27,3	63,6
	4	1	9,1	9,1	72,7
	5	3	27,3	27,3	100,0
	Total	11	100,0	100,0	

2.5 Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lecture	5	45,5	45,5	45,5
	Practical training course	4	36,4	36,4	81,8
	Seminar (introductory, orientation, general)	2	18,2	18,2	100,0
	Total	11	100,0	100,0	

2.6 Proposed semester

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

2.7 Form of assessment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

3.0 Where are the competences indicated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The competences are indicated in the programme description	11	100,0	100,0	100,0

3.1.12 Other knowledge (focusing on research related knowledge)

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	Has knowledge about discovery learning, learning by experimentation, learning by the formation of hypotheses and problem-solving, learning by a change of action and reflection	11	100,0	100,0	100,0

3.2.4 Monitoring, adapting and assessing teaching/learning objectives and processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	100,0	100,0	100,0

3.2.5 Collecting, analysing, interpreting evidence and data (school learning outcomes, external assessments results) for professional decisions and teaching/learning improvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

3.2.6 Using, developing and creating research knowledge to inform practices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

3.2.7 Collaborating with colleagues, parents and social services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	100,0	100,0	100,0

3.2.8 Negotiation skills (social and political interactions with multiple educational stakeholders, actors and contexts)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

3.2.9 Reflective, metacognitive, interpersonal skills for learning individually and in professional communities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	100,0	100,0	100,0

3.2.11 Other skills

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	Capability to increase pupils' awareness with intriguing exercises, to assist pupils' self-reviews of their learning outcomes	11	100,0	100,0	100,0

3.3.4 Dispositions to change, flexibility, ongoing learning and professional improvement, including study and research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

3.3.7 Critical attitudes toward one's own teaching (examining, discussing, questioning practices)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	100,0	100,0	100,0

3.3.8 Dispositions to team-working, collaboration and networking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	100,0	100,0	100,0

3.3.10 Other disposition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

4.0 Where is the content indicated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The content is indicated in the course description	11	100,0	100,0	100,0

4.2.12 Research Methodology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	81,8	81,8	81,8
	Yes	2	18,2	18,2	100,0
	Total	11	100,0	100,0	

4.3.1 Other content (Y/N)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	45,5	45,5	45,5
	Yes	6	54,5	54,5	100,0
	Total	11	100,0	100,0	

4.3.2 What is the other content?

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	0	5	45,5	45,5	45,5
	Class and teaching observations	1	9,1	9,1	54,5
	Discourse analysis	1	9,1	9,1	63,6
	Teaching analysis	2	18,2	18,2	81,8
	Teaching observation Analysis of examples (of teaching observation and planning)	1	9,1	9,1	90,9
	Teaching observation Data acquisition (interview, questionnaire, etc.)	1	9,1	9,1	100,0
	Total	11	100,0	100,0	

5.0 Are there course deliverables?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	100,0	100,0	100,0

5.1 Essay

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

5.2 Active participation in the lessons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	100,0	100,0	100,0

5.3 Discussion, debate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

5.4 Situational exercise

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

5.5 Reflection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	72,7	72,7	72,7
	Yes	3	27,3	27,3	100,0
	Total	11	100,0	100,0	

5.6 Creating a pedagogical dictionary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

5.7 Source analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

5.8 Case analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

5.9 Observation of pupils/students/teachers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

5.10 Observation of lessons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	45,5	45,5	45,5
	Yes	6	54,5	54,5	100,0
	Total	11	100,0	100,0	

5.11 Practical task (e.g., micro teaching)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	72,7	72,7	72,7
	Yes	3	27,3	27,3	100,0
	Total	11	100,0	100,0	

5.12 Project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	63,6	63,6	63,6
	Yes	4	36,4	36,4	100,0
	Total	11	100,0	100,0	

5.13 Visiting an institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	72,7	72,7	72,7
	Yes	3	27,3	27,3	100,0
	Total	11	100,0	100,0	

5.14 Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	9	81,8	81,8	81,8
	Data acquisition (interview, questionnaire, etc.)	1	9,1	9,1	90,9
	Theory-based reflection	1	9,1	9,1	100,0
	Total	11	100,0	100,0	

5.15 Is there a school-based component of the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	54,5	54,5	54,5
	Yes, indicated by lesson numbers	4	36,4	36,4	90,9
	Yes, indicated by task/activity	1	9,1	9,1	100,0
	Total	11	100,0	100,0	

6.0 Is there a literature list included in the course description?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

6.1.1 Number of mandatory literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

6.1.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

6.1.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

6.2.1 Number of recommended literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

6.2.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

6.2.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

6.3.1 Number of optional literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

6.3.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

6.3.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

7.1.1 Is there any research (results) integrated into the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	10	90,9	90,9	90,9
	Yes, to some extend	1	9,1	9,1	100,0
	Total	11	100,0	100,0	

7.1.2 Timely nature of lecturer's research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

7.1.3 Who carried out the research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

7.2.1 Do students discuss research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	90,9	90,9	90,9
	Yes	1	9,1	9,1	100,0
	Total	11	100,0	100,0	

7.2.2 Do students write about research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

7.3.1 Do students learn about research methods?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	100,0	100,0	100,0

7.3.2 Qualitative approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

7.3.3 Quantitative approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

7.3.4 Methods of quality control

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

7.3.5 Scientific approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

7.3.6 Linking research with models, theories of learning and teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

7.4.1 Do students conduct research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

7.5.1 How are students treated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	As participants (active role, student focused)	1	9,1	9,1	9,1
	Not indicated	10	90,9	90,9	100,0
	Total	11	100,0	100,0	

7.5.2 What is emphasised?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

8.1 Is there any research-related activity (in its broadest sense) in the course description?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	4	36,4	36,4	36,4
	Yes	7	63,6	63,6	100,0
	Total	11	100,0	100,0	

8.2.1 Discussion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	63,6	63,6	63,6
	Not indicated	4	36,4	36,4	100,0
	Total	11	100,0	100,0	

8.2.2 Reflection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	45,5	45,5	45,5
	Not indicated	4	36,4	36,4	81,8
	Yes	2	18,2	18,2	100,0
	Total	11	100,0	100,0	

8.2.3 Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	9,1	9,1	9,1
	Not indicated	4	36,4	36,4	45,5
	Yes	6	54,5	54,5	100,0
	Total	11	100,0	100,0	

8.2.4 Familiarize themselves with the school as a research field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	54,5	54,5	54,5
	Not indicated	4	36,4	36,4	90,9
	Yes	1	9,1	9,1	100,0
	Total	11	100,0	100,0	

8.2.5 Writing research plan - questions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	45,5	45,5	45,5
	Not indicated	4	36,4	36,4	81,8
	Yes	2	18,2	18,2	100,0
	Total	11	100,0	100,0	

8.2.6 Conducting interviews

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	54,5	54,5	54,5
	Not indicated	4	36,4	36,4	90,9
	Yes	1	9,1	9,1	100,0
	Total	11	100,0	100,0	

8.2.7 Dealing with literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	63,6	63,6	63,6
	Not indicated	4	36,4	36,4	100,0
	Total	11	100,0	100,0	

8.2.8 Comparative analysis of pupils

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	63,6	63,6	63,6
	Not indicated	4	36,4	36,4	100,0
	Total	11	100,0	100,0	

8.2.9 Measure something in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	63,6	63,6	63,6
	Not indicated	4	36,4	36,4	100,0
	Total	11	100,0	100,0	

8.2.10 Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	54,5	54,5	54,5
	Not indicated	4	36,4	36,4	90,9
	Yes	1	9,1	9,1	100,0
	Total	11	100,0	100,0	

8.3 Is this activity connected to pupils/school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	9	81,8	81,8	81,8
	Yes	2	18,2	18,2	100,0
	Total	11	100,0	100,0	

8.4 Do they conduct it individually, pairs or groups?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

8.5 Is there a product of the activity?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	11	100,0	100,0	100,0

8.6 What is the product?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	100,0	100,0	100,0

Appendix 10. Document Analysis – ITE, AT case, BA and MA together: Frequencies

2.1 Field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	2	11,8	11,8	11,8
	Pedagogy	11	64,7	64,7	76,5
	Pedagogy and psychology	2	11,8	11,8	88,2
	Practice	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

2.2 Other field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	88,2	88,2	88,2
	Research methodology	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

2.3 ECTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,5	1	5,9	5,9	5,9
	2,0	9	52,9	52,9	58,8
	2,5	1	5,9	5,9	64,7
	3,0	1	5,9	5,9	70,6
	3,5	3	17,6	17,6	88,2
	7,0	1	5,9	5,9	94,1
	7,5	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

2.4 Number of lessons/semester

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	13	76,5	76,5	76,5
	2	3	17,6	17,6	94,1
	3	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

2.5 Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lecture	5	29,4	29,4	29,4
	Practical training course	4	23,5	23,5	52,9
	Seminar	8	47,1	47,1	100,0
	Total	17	100,0	100,0	

2.6 Proposed semester

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	17,6	17,6	17,6
	2	2	11,8	11,8	29,4
	3	6	35,3	35,3	64,7
	4	2	11,8	11,8	76,5
	5	1	5,9	5,9	82,4
	6	1	5,9	5,9	88,2
	7	1	5,9	5,9	94,1
	8	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

2.7 Form of assessment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	17	100,0	100,0	100,0

3.0 Where are the competences indicated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The competences are indicated in the programme description	17	100,0	100,0	100,0

3.1.12 Other knowledge (focusing on research related knowledge)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

3.2.4 Monitoring, adapting and assessing teaching/learning objectives and processes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

3.2.5 Collecting, analysing, interpreting evidence and data (school learning outcomes, external assessments results) for professional decisions and teaching/learning improvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	100,0	100,0	100,0

3.2.6 Using, developing and creating research knowledge to inform practices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	100,0	100,0	100,0

3.2.7 Collaborating with colleagues, parents and social services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	100,0	100,0	100,0

3.2.8 Negotiation skills (social and political interactions with multiple educational stakeholders, actors and contexts)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	100,0	100,0	100,0

3.2.9 Reflective, metacognitive, interpersonal skills for learning individually and in professional communities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	100,0	100,0	100,0

3.2.11 Other skills

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	They are able to reflect and analyse the results on the basis of theory and to generate new findings or theoretical approaches and options for action. They are able to refer to science/arts and reflective practice to each other.	17	100,0	100,0	100,0

3.3.4 Dispositions to change, flexibility, ongoing learning and professional improvement, including study and research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

3.3.7 Critical attitudes toward one's own teaching (examining, discussing, questioning practices)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

3.3.8 Dispositions to team-working, collaboration and networking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

3.3.10 Other disposition

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	are aware of the preliminary nature of scientific findings.	17	100,0	100,0	100,0

4.0 Where is the content indicated?

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	The content is indicated in the course description	17	100,0	100,0	100,0

4.2.12 Research Methodology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	13	76,5	76,5	76,5
	Yes	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

4.3.1 Other content (Y/N)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	11	64,7	64,7	64,7
	Yes	6	35,3	35,3	100,0
	Total	17	100,0	100,0	

4.3.2 What is the other content?

		Freq.	Percent	Valid Percent	Cumulative Percent
Valid	0	11	64,7	64,7	64,7
	Classroom observation	1	5,9	5,9	70,6
	In-depth dealing with findings of learning and teaching research School research and the current national and international educational research Discussion of the insights from individual	1	5,9	5,9	76,5
	Professions and educational research School and teaching research Teaching and learning research	1	5,9	5,9	82,4
	Reflection Teaching observation First empirical approaches to the research field school	1	5,9	5,9	88,2
	School development as a field of research	1	5,9	5,9	94,1
	Theory-based reflection Fundamentals of teaching observation	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.0 Are there course deliverables?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	100,0	100,0	100,0

5.1 Essay

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

5.2 Active participation in the lessons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	100,0	100,0	100,0

5.3 Discussion, debate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	15	88,2	88,2	88,2
	Yes	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

5.4 Situational exercise

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

5.5 Reflection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	12	70,6	70,6	70,6
	Yes	5	29,4	29,4	100,0
	Total	17	100,0	100,0	

5.6 Creating a pedagogical dictionary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

5.7 Source analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

5.8 Case analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

5.9 Observation of pupils/students/teachers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

5.10 Observation of lessons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

5.11 Practical task (e.g., micro teaching)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

5.12 Project

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	94,1	94,1	94,1
	Yes	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.13 Visiting an institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	94,1	94,1	94,1
	Yes	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.14 Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	88,2	88,2	88,2
	Research project	1	5,9	5,9	94,1
	Research results	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

5.15 Is there a school-based component of the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	15	88,2	88,2	88,2
	Yes, indicated by task/activity	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

6.0 Is there a literature list included in the course description?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	17	100,0	100,0	100,0

6.1.1 Number of mandatory literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.1.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.1.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.2.1 Number of recommended literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.2.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.2.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.3.1 Number of optional literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.3.2 Number of foreign language literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

6.3.3 Number of literature published after 2000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	100,0	100,0	100,0

7.1.1 Is there any research (results) integrated into the course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	13	76,5	76,5	76,5
	Yes, the whole course is based on it	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

7.1.2 Timely nature of lecturer's research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Current	4	23,5	23,5	23,5
	Not indicated	13	76,5	76,5	100,0
	Total	17	100,0	100,0	

7.1.3 Who carried out the research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	14	82,4	82,4	82,4
	Student teachers	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

7.2.1 Do students discuss research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	58,8	58,8	58,8
	Yes	7	41,2	41,2	100,0
	Total	17	100,0	100,0	

7.2.2 Do students write about research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	94,1	94,1	94,1
	Yes	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

7.3.1 Do students learn about research methods?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	82,4	82,4	82,4
	Yes, educational research methods	1	5,9	5,9	88,2
	Yes, general and educational research methods	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

7.3.2 Qualitative approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

7.3.3 Quantitative approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

7.3.4 Methods of quality control

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	5,9	5,9	5,9
	Not indicated	14	82,4	82,4	88,2
	Yes	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

7.3.5 Scientific approaches

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

7.3.6 Linking research with models, theories of learning and teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

7.4.1 Do students conduct research?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

7.5.1 How are students treated?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	As audience (passive role, teacher focused)	5	29,4	29,4	29,4
	As audience and as participants	1	5,9	5,9	35,3
	As participants (active role, student focused)	8	47,1	47,1	82,4
	Not indicated	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

7.5.2 What is emphasised?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	13	76,5	76,5	76,5
	Research content	1	5,9	5,9	82,4
	Research content, processes and problems	1	5,9	5,9	88,2
	Research processes and problems	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

8.1 Is there any research-related activity (in its broadest sense) in the course description?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	41,2	41,2	41,2
	Yes	10	58,8	58,8	100,0
	Total	17	100,0	100,0	

8.2.1 Discussion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	35,3	35,3	35,3
	Not indicated	7	41,2	41,2	76,5
	Yes	4	23,5	23,5	100,0
	Total	17	100,0	100,0	

8.2.2 Reflection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	29,4	29,4	29,4
	Not indicated	7	41,2	41,2	70,6
	Yes	5	29,4	29,4	100,0
	Total	17	100,0	100,0	

8.2.3 Observation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	47,1	47,1	47,1
	Not indicated	7	41,2	41,2	88,2
	Yes	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

8.2.4 Familiarize themselves with the school as a research field

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	41,2	41,2	41,2
	Not indicated	7	41,2	41,2	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

8.2.5 Writing research plan - questions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	52,9	52,9	52,9
	Not indicated	7	41,2	41,2	94,1
	Yes	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

8.2.6 Conducting interviews

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	58,8	58,8	58,8
	Not indicated	7	41,2	41,2	100,0
	Total	17	100,0	100,0	

8.2.7 Dealing with literature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	58,8	58,8	58,8
	Not indicated	7	41,2	41,2	100,0
	Total	17	100,0	100,0	

8.2.8 Comparative analysis of pupils

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	58,8	58,8	58,8
	Not indicated	7	41,2	41,2	100,0
	Total	17	100,0	100,0	

8.2.9 Measure something in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	58,8	58,8	58,8
	Not indicated	7	41,2	41,2	100,0
	Total	17	100,0	100,0	

8.2.10 Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Conception, planning and implementation of an own research project	1	5,9	5,9	5,9
	No	9	52,9	52,9	58,8
	Not indicated	7	41,2	41,2	100,0
	Total	17	100,0	100,0	

8.3 Is this activity connected to pupils/school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	82,4	82,4	82,4
	Yes	3	17,6	17,6	100,0
	Total	17	100,0	100,0	

8.4 Do they conduct it individually, pairs or groups?

		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Not indicated	17	100,0	100,0	100,0

8.5 Is there a product of the activity?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not indicated	15	88,2	88,2	88,2
	Yes	2	11,8	11,8	100,0
	Total	17	100,0	100,0	

8.6 What is the product?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	88,2	88,2	88,2
	Presentation, research results	1	5,9	5,9	94,1
	Research project	1	5,9	5,9	100,0
	Total	17	100,0	100,0	

Appendix 11. Document Analysis – Comparison of ITE programmes in Austria

	Previous programme	Current programme
General		
Number of course descriptions	11	17
Length of studies	9 semesters	8+4 semesters (BA+MA)
ECTS of the pedagogical module	40	28,4 (23,5+5)
Background information		
Field	100% pedagogical	94,1% pedagogical 5,9% research methodology
Type	36,4% practical training courses 45,5% lectures 18,2% seminars	47,1% seminars 29,7% lectures 23,5% practical training course
Forms of assessment	not indicated in the course descriptions, but there is general information about the forms of assessment on the programme level	not indicated in the course descriptions, but there is general information about the forms of assessment on the programme level
Competences (focusing on research-related ones)		
Where are the competences included?	on the programme level	on the programme level
Content		
Course descriptions that included research-related content	54,5%	52,9%
Course deliverables		
Course descriptions that indicated deliverables	63,64	47,1%
Type of deliverables	27,3% reflection 9,1% theory-based reflection 54,5% observation (pupils, teacher, lessons) 9,1% data acquisition	29,4% reflection 17,6% observation (pupils, teacher, lessons) 5,9% research project 5,9% research results
Literature		
Mandatory literature	no mandatory list of literature in the course descriptions, nor in the programme	no mandatory list of literature in the course descriptions, nor in the programme
Teaching-research nexus		
Research results integrated into the course	9,1%	23,5%
Student teachers discuss research	9,1%	41,2%
Student teachers write about research	not indicated	5,9%
Student teachers learn about research methods	not indicated	17,6%
Student teachers conduct research	not indicated	17,6%
Research-related activities of student teachers		
Reflection	18,2%	29,4%
Observation	54,5%	11,8%
Familiarize themselves with the school as a research field	9,1%	17,6%
Conduct interviews	9,1%	not indicated

Writing research plan	18,2%	5,9%
Data acquisition	9,1%	5,9%
Miscellaneous		
Elective course	Research Workshop School Development covering the following topics: - Instruction and participation in teaching preparation - Implementation and evaluation of school development and assistance projects - Dealing with basic research questions - Development and presentation of project results	N/A