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## Student Teachers as Future Researchers: How do Hungarian and Austrian Initial Teacher Education Systems Address the issue of Teachers as Researchers?

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Even though initial teacher education is a rather short period in comparison to the other phases of a teacher's career, it has a crucial role in shaping student teachers' career-long activities. Many argue that everyday teaching in a classroom setting is comparable to conducting research, as teachers pursue experimenting with different strategies to teaching and learning, as they reflect on their own as well as their colleagues' work, and as they make decisions about their future steps based on these experiences. This paper aims to reveal how the concept of *teachers as researchers* is addressed in initial teacher education programmes by answering two questions: How is the concept of *teachers as researchers* represented in these programmes? What kind of experiences do student teachers have regarding *practice-oriented research*? The research has a case study design with a comparative aspect, in which one Hungarian and one Austrian institution offering initial teacher education serve as the two cases. Results show that both universities have integrated research into their initial teacher education programmes, but in different ways and to different extents. An important notion is that although various courses that deal with research and/or research methodology and could contribute to the development of student teachers' research competences could be identified, the activities of these courses are somewhat restricted to taking place within the university walls (e.g., discussion of research results), detached from practice. The study is expected to contribute to the understanding of structural similarities and differences in initial teacher education systems in the two countries that may foster or hinder the development of student teachers' development during their school-based teaching practice, with a particular focus on those that are required to conduct practice-oriented research.

**Keywords:** initial teacher education, student teachers, teacher education programmes, teachers as researchers

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## Študentje pedagoških programov kot prihodnji raziskovalci: kako madžarski in avstrijski sistem začetnega izobraževanja učiteljev naslavljata vprašanje učiteljev kot raziskovalcev

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☞ Čeprav je začetno izobraževanje za učiteljski poklic razmeroma kratko obdobje v primerjavi z drugimi fazami učiteljeve kariere, ima osrednjo vlogo v oblikovanju dejavnosti študentov pedagoških programov, ki se bodo odvijale skozi njihovo celotno kariero. Veliko jih trdi, da je v tem, ko učitelji eksperimentirajo z različnimi strategijami poučevanja in učenja, ko reflektirajo o lastnem delu in delu svojih kolegov, ko se na podlagi teh izkušenj odločajo o prihodnjih korakih, vsakdanje poučevanje v razredu primerljivo z izvajanjem raziskave. Ta prispevek skuša z odgovarjanjem na naslednji vprašanji razkriti, kako je koncept *učiteljev kot raziskovalcev* naslovljen v programih začetnega izobraževanja učiteljev: Kako je koncept *učiteljev kot raziskovalcev* zastopan v teh programih? Kakšne izkušnje imajo študentje pedagoških smeri z *na prakso usmerjenim raziskovanjem*? Raziskava ima obliko študije primera s primerjalnim vidikom, pri čemer kot dva primera služita ena madžarska in ena avstrijska ustanova, ki ponujata začetno izobraževanje učiteljev. Izsledki kažejo, da sta obe univerzi vključili raziskovanje v svoje programe začetnega izobraževanja učiteljev, vendar pa sta to storili na različne načine in v različnem obsegu. Pomembno je poudariti, da so, čeprav obstajajo nekateri predmeti, ki obravnavajo raziskovanje in/ali raziskovalno metodologijo in ki bi tako lahko vplivali na razvoj raziskovalnih kompetenc študentov pedagoških programov, dejavnosti teh predmetov precej omejene na izvajanje znotraj univerz (na primer diskusije o izsledkih raziskav) in so torej ločene od prakse. Študija naj bi prispevala k razumevanju strukturnih podobnosti in razlik v sistemih začetnega izobraževanja učiteljev v dveh državah, ki lahko spodbujajo ali zavirajo razvoj študentov pedagoških programov med njihovo pedagoško prakso na šolah, in sicer s posebnim poudarkom na tistih, ki zahtevajo izvajanje raziskovalne prakse.

**Ključne besede:** začetno izobraževanje učiteljev, študentje pedagoških smeri, programi izobraževanja učiteljev, učitelji kot raziskovalci

## **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 or in-service teachers, researchers, and policymakers should focus on improving the quality of the profession (Eötvös Loránd University EDiTE Team, 2014). Although such an improvement is desirably implemented in collaboration and mutual recognition of actors, in reality, there is a gap between educational research, educational practice, and educational policy making (Commission of the European Communities, 2007; Snoek, 2011). The traditional model of educational research, which is expert-led, peer-reviewed, and in which dissemination is a top-down process, does not decrease the gap between the actors. 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 practitioners (Hargreaves, 1999). Policies in the European Union have turned towards encouraging the cooperation between academics and practitioners in the form of building bridges between the worlds of academia and practice (Eötvös Loránd University EDiTE Team, 2014; OECD, 2003).

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). One long-term solution (or at least mitigation) might be to bring educational research closer to student teachers 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.

## **International discourse on the concept of teachers as researchers**

The strengthening of educational research is a relevant topic, and numerous publications and research programmes have been initiated 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.

A significant number of studies emphasise that teachers admit to conducting no research at all, since they believe that lesson observations, keeping journals, and similar activities cannot be considered to be 'real' research (Keyes, 1999). The general view of teachers not thinking of classroom inquiry as research can be rooted in the notions of research with which they became familiar during their initial teacher education (ITE). 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 ITE, large-scale, nation-wide research projects and programmes were presented to them. However, the education community has recognised the powerful role of teachers as researchers, since the possibility of understanding the complexity of a school community is decidedly increased if practitioners have the skills and opportunities to initiate research activities within their environment (Gray & Campbell-Evans, 2002). 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).

The power of contexts limits the generalizability of educational research 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). There is a need for strengthening the capacity of policymakers and practitioners to use educational research and evidence. Since educational evidence is deeply embedded in its 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). Moreover, educational science can be considered the 'hardest-to-do science' (Berliner, 2002); therefore, student teachers should be aware of its characteristics, both as consumers and producers of new knowledge created by educational research. For example, the power of context is a characteristic that suggests the knowledge needed for interpreting a phenomenon is often held by (local) practitioners.

However, significant knowledge and culture changes are desired in the practice of researchers (by accepting that small-scale, self-defined research projects 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 (e.g., Cain (2015) provided evidence that teachers transformed their propositional knowledge (they were given research findings) into practical knowledge).

The *relationship of research and teaching* in the higher education context is a fiercely debated issue. While some claim university research is conducted at the expense of teaching quality, others argue the opposite, saying that research enriches the quality of teaching (Healey, 2005). Existing evidence is contradictory: for example, while Hattie and Marsh (1996) found no significant relationship between teaching effectiveness and research productivity, Jenkins (2004) argues that there is evidence showing that students prefer learning in a research-based environment (and, consequently, research-based teacher education programmes are desired).

### **Teacher education in Hungary and Austria in light of the Bologna process**

The Bologna process has significantly reshaped the whole higher education scenario, but its influence on teacher education has resulted in interesting and in some cases opposing patterns in its national translations. Looking at the past few years of teacher education in the Hungarian and Austrian contexts, we can see that, despite identifying some similar issues in the national discourse, the implemented reforms regarding the structure of ITE, in a very simplified manner, are conflicting. While it is clearly evident that education, and therefore teacher education, is deeply embedded in the national, cultural contexts, these two cases should be examined comparatively, especially taking into consideration the strong historical relationship between Hungary and Austria that has had an influence on the two countries' development even after the dissolution of the Austro-Hungarian Monarchy in 1918. Moreover, to discuss the concept of *teachers as researchers*, the national ITE systems with a special focus on secondary school teachers' preparation shall be briefly presented here.

#### **Hungarian initial teacher education in light of the Bologna process**

As a result of introducing the Bologna system to the Hungarian higher education context, ITE was raised to the master level. Some of the most significant characteristics of ITE this time were the following: student teachers had to choose one major and one minor discipline, pedagogical-psychological contents were emphasised during the master studies, the one semester long teaching practice

took place at the end of the programme (Pesti, Rapos, Nagy, & Bohán, 2017). The actors, including in-service teachers and teacher educators, fiercely criticised this system due to numerous issues; for example, only a few students became teachers after graduation, and there was an increased credit burden for the pedagogical-psychological preparation (Hunyadi, 2010; Pukánszky, 2013).

Five years later, in 2013 teacher education faced another structural reform (Ministry of Human Capacities of Hungary, 2011): it was restored to the so-called undivided system in which the studies are not divided into bachelor and master studies. In this undivided system (currently active), ITE lasts for 5+1 years (the last year is school-based practice). There were some new characteristics introduced with this structural change that reflect European trends of teacher education, such as an increase in practice time (to two semesters). The introduction of the divided system and then the restoration of the undivided system without the impact analysis of the previous one makes Hungary an intriguing case (Pukánszky, n.d.). One of the most debated issue regarding the undivided system is the 'deposition' of practice (at the end of ITE) and (pedagogical) theory (at the beginning of ITE), which reverses the endeavour to decrease the gap between theory and practice.

### **Austrian initial teacher education in light of the Bologna process**

Recent years have also brought significant changes to the system of ITE in the Austrian context. Since 2013, ITE programmes have been offered in close collaboration with universities and teacher training colleges (Simić, Bachmann, & Stančić, 2013). One of the most debated issues of the Austrian public education system is the choice between academic and vocational-technical tracks at an early age; this feature also used to be reflected in the structure of ITE (teachers for the academic track were prepared for the profession at universities, while teachers for the vocational-technical track at teacher training colleges), but there was an attempt with the reform to mitigate the differences during teacher preparation (universities and teacher training colleges offering joint ITE programmes).

Although there were some new characteristics and components introduced (similarly to Hungary) with the reform, some of the traditional characteristics of teacher education remain present (Schratz & Kraler, 2011); therefore, ITE can be considered:

- discipline-driven (e.g., studying scientific subjects satisfies the concept of a good teacher),
- theory-driven (e.g., the separation of theory and practice for the benefit of theory),

- selection-driven (e.g., only the best teachers and pupils can enter academic secondary schools),
- state-driven (e.g., the teaching profession is considered a priority profession by the state),
- bureaucratic (e.g., problem solutions, changes, developments must fit the administrative structure).

In this new system, since 2015, ITE has been divided into bachelor and master studies. One unique feature is that the bachelor studies last for four years (not for three as for 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.

## Method

As has been presented in the previous chapters, in the international discourse, the concepts of *teachers as researchers* are significant and highly debated, but there is little research on it in the Hungarian and the Austrian contexts; moreover, most of the international studies focus on the university staff, and not the student teachers' perspective (Munthe & Rogne, 2015). In addition to this, looking at the cases of two institutions from Hungary and Austria in a comparative manner is highly interesting, since there are controversial processes/reforms in process in the two countries' ITE systems: while Hungary, restored the so-called undivided system after implementing the Bologna system in its teacher education, Austria has just recently introduced a structural change that makes its ITE system conform to the Bologna process. The two countries have a common historical-cultural background (Austro-Hungarian Empire) and, regarding their education and teacher education systems, they follow different traditions; however, as Member States of the European Union, they take part in international discourse and follow international trends to different extents.

Therefore, the present paper aims to reveal how the concept of *teachers as researchers* is addressed in ITE programmes. The study is guided by the following research questions:

1. How is the concept of *teachers as researchers* represented in ITE programmes in the participating two universities from Hungary and Austria?
2. What kind of experiences do student teachers of ITE programmes have regarding *practice-oriented research* in the participating two universities from Hungary and Austria?

The research has a case study design with a comparative aspect, in which one Hungarian and one Austrian institution offering ITE serve as the two cases. Although the two universities are located in different types of settlements (one in a capital city, the other one in a statutory city, i.e. one that acts as a district administrative authority), both are universities with long traditions, and they currently play significant roles in teacher education in their regions. Moreover, both universities contribute to research on education and teacher education; therefore, from the perspective of our research topic, they can be considered to be good cases to study the concept of teachers as researchers.

A mixed method approach seemed to be the most suitable for answering the research questions, in which data were collected through document analysis (for answering the 1<sup>st</sup> question) and interviews (for answering the 2<sup>nd</sup> question).

### **Document analysis**

In order to set the stage for exploring the nature of research integration into teaching, and to ensure a more detailed understanding of student teachers' points of view, an essential step is to see how (educational) research is represented in ITE programmes. 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 based on a literature review and a previous study on teacher education programmes (Pesti, Rapos, Nagy, & Bohán, 2017).

The sample consists of the pedagogical-psychological module's course descriptions included in the ITE programmes within two universities in Hungary and Austria. The institutions' ITE programmes prepare students for teaching general subjects on ISCED levels 2 and 3. The unit of analysis is the course description and, in total, 31 course descriptions (18 provided by the Hungarian university, and 13 by the Austrian) were coded in the spreadsheet. Despite the fact that the degree of elaboration of the course descriptions varied significantly (some provide only very basic information, while others are deeply detailed), we 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 programme developers to include it in the description). The data collected in such a manner is suitable for quantitative data analysis, for which IDM SPSS 21 was used.



## Interviews

To ensure a deeper understanding of the studied issue, giving voice to student teachers seemed to be essential. Since there is little empirical evidence about the specific focus of the research, we decided to start exploring the topic by conducting interviews with the participants; therefore, the purpose of the interviews is mostly of an exploratory nature.

Student teachers enrolled in the perspective universities' ITE programmes formed the sample. Without exception, they were adults voluntarily participating in the research, and each of the interviewees had already been on school-based teaching practice. In total, six interviews were conducted (three at each university).

A qualitative content analysis on the transcripts using MaxQDA 18 software was conducted. When the qualitative analysis is done, the raw data is arranged into conceptual categories, and themes or concepts are created. As Neuman (2014) 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. We followed Strauss' (1987) differentiation of three types of coding; therefore, we reviewed the data three times, each time with a different type of coding:

1. Open coding: we located themes and came up with initial codes.
2. Axial coding: we began axial coding with an organised set of initial codes, the aim was to organise them and identify the axis of key concepts, but we also kept an open eye for additional codes or new ideas that might emerge.
3. Selective coding: this phase involved scanning all the data and previous codes in a selective manner (looking for cases to illustrate themes).

Having the interview transcriptions coded, we formed categories by grouping related codes; finally, we formulated sub-themes as an attempt to express underlying meanings in two or more categories (Erlingsson & Brysiewicz, 2017).

## Results of the document analysis of initial teacher education programmes

### The case of the Austrian university

In the Austrian university's programme, more specifically in the module for teacher preparation, there were 13 course descriptions, divided into five sub-modules. Within the context of the focus of this study, it is important to highlight one of the sub-module titles, since it has the word 'research' in it ('Learning, Teaching and Research'). This implies that research in relation to learning and teaching is considered to be a significant issue by the programme developers.

Most of the 13 courses are of a pedagogical nature, but there are two courses (15.4%) that explicitly deal with research methodology (these two courses are entirely based on research). Moreover, these courses also focus on student teachers' research activities and aim to provide support. However, looking at this result from the opposite perspective, this also means that there are two courses in which student teachers learn about research methodology, more specifically about qualitative and quantitative approaches, methods of quality control, scientific approaches, and ways of linking research with concepts, models, theories of learning and teaching.

Examining the type of the courses, we can see that the seminar type is the most common (46.2%), followed by lectures (30.8%), and practice (23.1%). Student teachers are treated as participants in 61.5% of the courses, and not as an audience. The analysis of the various student activities as explained in the course descriptions has revealed that most of the courses in which students are treated as participants incorporate activities that have some relevance to the development of research competence (Figure 1). However, the two most dominant activities (discussion and reflection) mostly take place within the walls of the university, and only the observation (16.7%) and the familiarisation with the school as a research field (8.3%) are directly connected to the practice school, to the pupils. There is no information indicated regarding whether student teachers conduct these activities (especially the latter two) individually, in pairs or in groups.

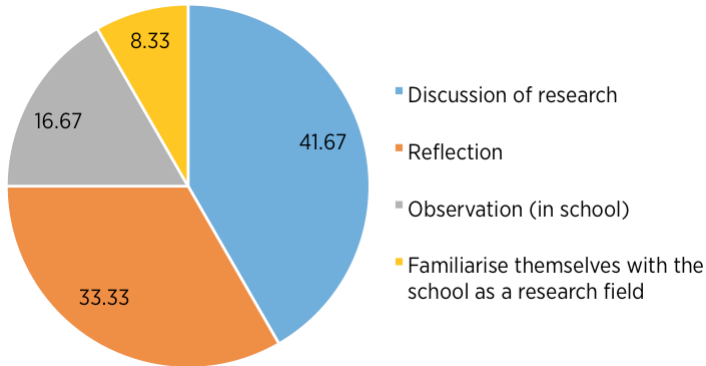


Figure 1. Percentage of student activities in course descriptions (Austrian case).

Content-wise, although to a different extent, 30.8% of the courses identify research-related topics. Examining the nature of these topics showed that the research process and problems are emphasised over the research content.

### The case of the Hungarian university

The ITE programme provided by the Hungarian university includes 18 courses in its educational module. In contrast to the Austrian case, the titles of the sub-modules have no reference to educational research. However, one of the sub-modules is titled 'Social relationships', implying that the teaching profession reaches beyond the school walls. The courses are pedagogical (38.9%), psychological (50.0%), pedagogical and psychological (5.6%), ICT-related (5.6%); none explicitly identifies the field of research methodology.

Similarly to the Austrian case, the seminar type is the most common (55.6%), followed by the lectures (33.3%), practice (5.6%), and portfolio (5.6%) courses. Student teachers are treated as the audience in 66.7% of the courses, and as participants in 33.3%. Further analysis of the student activities in the course descriptions has led to a rich list; however, the two most dominant activities (discussion on research and reflection) still occur within the walls of the university (Figure 2.). In 16.7% of these activities, it is explicitly indicated that the activity is directly connected to pupils and/or schools. Only one of the course descriptions refer to the possibility of conducting the student activities in pairs or groups.

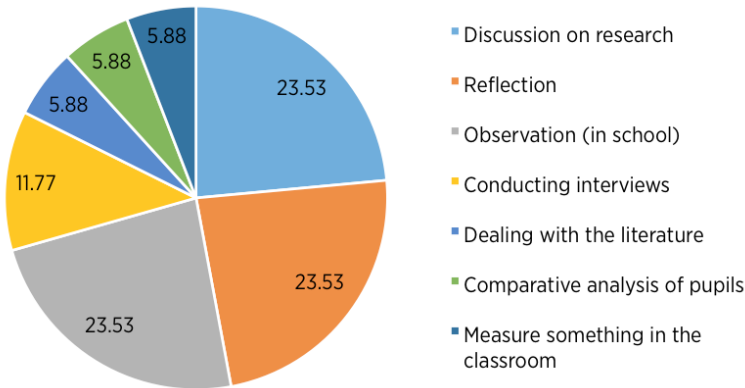


Figure 2. Percentage of student activities in course descriptions (Hungarian case).

Content-wise, although to a different extent, 22.2% of the courses identify research-related topics. Examining the nature of these topics showed that the research content is emphasised over the research process and problems.

### Results of the interviews with student teachers in Austria and Hungary

It is relevant to point out that the preliminary analysis of transcripts showed that the interviewed student teachers (students) in both cases had shared similar experiences and issues; therefore, the codes identified in all of the interviews (not regarding the country) were handled in one collection, and the categories and themes that emerged in this manner guide this chapter where some of the most relevant findings are presented.

Three main themes have emerged:

- studies,
- school-based teaching practice,
- and research experience during the school-based teaching practice.

Since the third theme proved to be the most relevant for the present paper, we focus on presenting its sub-themes. However, to truly understand student teachers' research experience during school-based teaching practice some of the most significant findings of the first and second themes are also presented briefly. Each section of this chapter follows the same presentation of results: firstly, we introduce the similarities, which is followed by the differences between the two cases.

### **First theme: Studies – Personal opinion about teaching and motivation to become a teacher**

Since the interviewees from both cases are close to finishing their studies, they already have a strong opinion whether they want to be teachers after graduation, or rather do something within their chosen disciplinary fields. This decision (pursuing the teaching profession or choosing a disciplinary profession) can affect the way students experience their practice, since those dedicated to a teaching career realise that the practice and the related tasks prepare them for the profession. Moreover, this decision also has some implications for the manner in which students conduct the various activities during their school-based teaching practice, including those that are research-related (in case a student plans to pursue the teaching profession, his/her research topic might be more relevant to his/her own practice; therefore it contributes to the student's development as a teacher). An interviewee from the Austrian case summarised it as follows:

[...] because I know that I want to teach, I want to be at school, 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. They are not that motivated during practice either; they don't do much at the school, they just want to meet the minimum requirements. (Interviewee 1)

### **Second theme: School-based teaching practice – Encounter with the world of work**

The practice can be considered as the first encounter with the world of work – although students have spent much time in schools as pupils, in most of the cases the practice is the first time that they try out themselves as teachers in a school environment. Therefore, the outcome of this experience has an influencing effect at least at the beginning of their professional career as teachers.

An issue that the students face during their 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), and all the difficulties accompanying this endeavour. Some interviewees from both cases explained that many times they fail to uncover these connections on their own, and they did not get adequate support to do so. However, a student from the Hungarian case explained that s/he thought the activities conducted during the practice, including a research project, contributed to the development of his/her competences.

### **Third theme: Research experience during the school-based teaching practice**

#### *Preparation to conduct research*

The interviewees from both cases enlisted some ways of the possibilities to learn about educational research in order to enable them to conduct their own individual research projects during the practice (e.g., attending research-related courses at the university and transferring research competence gained during other research experience) which are not necessarily focusing on education.

Students are expected to participate in various activities during their practice; for example, in the Austrian context students are also expected to conduct a small-scale research project. They are allowed to decide on the topic of the research and, in the framework of a university course, they receive support from a university professor throughout this period. However, this course is designed to support students in their whole practical experience; therefore the time available for discussing the research project is limited and usually insufficient. In particular, they did not have many research-related courses at the university in which they could have learnt about social science research, trends in educational research, methods, and other relevant topics.

Some of the interviewees from the Austrian case explained that they were involved as group members in various research projects conducted at their departments (which were natural science departments in both cases). They described this involvement as a valuable experience, because they could transfer some of the research competence gained during disciplinary research into their own educational research projects. However, it is important to emphasise that only a small number of students have the chance to join research groups at the university; therefore, this way of preparation for conducting educational, practice-oriented research is more accidental than systematic.

Interviewees from the Hungarian case did not refer to their involvement in research projects conducted at their disciplinary departments, and although the university offers some research methodology-related courses, the students do not feel these are adequate in preparing them for conducting research on their own:

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. (Interviewee 2)

### *The educational relevance of the research topics*

Further analysis of the interview transcripts has revealed that students from both cases usually fail to see how the research projects conducted during their practice could contribute to their development as teachers. However, when the topic of the research has clear educational relevance and the students succeed in reflecting on their experience while conducting research, they admit that it may contribute to their development as teachers.

As described above, in the Austrian context, students 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 students, has some educational relevance and direct implications to the teaching practice. One may question if students 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.

The interviewees from the Hungarian case emphasised that they had conducted a small-scale research project during their school-based teaching practice, and this served as the empirical part of their dissertation; therefore, they considered it to be a meaningful activity. An interviewee explained that s/he conducted her research over a period of one semester (questionnaire at the beginning of the semester, implementation of new teaching methods during practice, questionnaire at the end of the semester), and found that this activity and the research results:

[...] contributed to my transition from a student to a teacher, because I dealt with a pedagogical topic in my research. I see now that the method is suitable for increasing student motivation and for developing various competences. (Interviewee 4)

### *Methodological considerations*

The way students think about research, in general, could influence the whole 'conducting small-scale educational research' experience during their practice. When asked what research is, the interviewees from both cases tended to stick to a purely scientific description of it borrowed from one of their studied disciplines, in many cases from a natural science field.

Regarding the Austrian case, for methodological considerations, the educational background of the students also plays an influencing role on their attitude towards educational research in general, and the research project conducted during the practice in particular. Students are encouraged to use qualitative approaches in their research projects. However, there seem to be numerous issues with this:

- no preparation for conducting qualitative research at the university,
- qualitative research is not considered to be 'real research' by students with a natural science background,
- 'bad blood' between the university departments also affects the way students think about educational research (since they spend more time in their disciplinary departments),
- students fail to see the importance of educational research because in many cases these are small-scale projects with small samples and no intention (or possibility) for generalisation or theory creation.

Although some of the issues mentioned in the previous paragraph might be true in the Hungarian context as well, the interviewees did not emphasise them. In general, in the case of these student teachers, the disciplinary background did not come out as such an influencing factor regarding their thinking about research as in the Austrian case.

Among the methods for data collection, the interviewees from both cases cited interviews, questionnaires, and observations as the most common methods, and the participants were usually their pupils and/or mentor teachers. Although students are not restricted to working exclusively with these methods and participants, they tend to 'play it safe' and stick to these. Additionally, 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, etc.).

#### *Actors involved in the research project*

In both cases, students usually conduct their research projects individually. However, one interviewee from the Austrian case mentioned that he collaborated with his peer, and the design of the research, as well as the data collection, were implemented in joint efforts. These kinds of collaboration between students are accidental; it is not offered to 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, in both cases, 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 was revealed that the interviewees did not consider their research results to be interesting or relevant for other stakeholders (not even for their mentor teachers, or fellow student teachers).

### Summary of results

Although the paper aims to present the results in a comparative manner, the data collected from interviews conducted with student teachers did not reveal significant differences between the two cases. However, some nuances could be observed, and Table 1 summarises the significant findings (similarities and differences) regarding the two cases.

Table 1

*Summary of the significant findings (similarities and differences) regarding the two cases*

Sub-themes	Austria	Hungary
<b>Student teachers have a strong opinion about whether they want to be teachers after graduation</b>	They do have a strong opinion regarding their future plans; however, in some cases enrolling in the ITE programme is just a Plan B.	They do have a strong opinion regarding their future plans, and the interviewees without exception plan to work as teachers in the future
<b>Establishing a connection between theory and practice</b>	Interviewees reported some difficulties in connecting theory to practice, even though there are some courses offered at the university that are supposed to support them during their school-based teaching practice.	As the school-based teaching practice takes part in the last phase of ITE, the interviewees were eager to experience the previously learnt theories and methods to test the hypothesis of their research projects in real life.
<b>Preparation to conduct research</b>	The interviewees identified two major ways of preparation to conduct research: attending research-related courses at the university (not adequate, focusing on disciplinary and not educational research, focusing on reviewing the literature, no practical implications) transferring research competence gained during other research experience which is not necessarily focusing on education (this happens in an ad-hoc way, only a limited number of students is 'lucky enough' to gain research experience this way).	The interviewees mainly reported a shortage of preparation to conduct research. Some research-related courses offered by the university are mentioned though, but their practical implications were not clear. Moreover, student teachers did not mention the possibility of being involved in the activities of research groups at the university.

Sub-themes	Austria	Hungary
<b>Educational relevance of the research topics</b>	The interviewees faced challenges with seeing the educational relevance of their research topics. In many instances, they explained this with the research project being qualitative and/or with a small sample size.	The interviewees conducted small-scale research projects during their school-based teaching practice, and this served as the empirical part of their dissertation.
<b>Methodological considerations</b>	The educational background, the disciplines of the interviewees, play an important role (students of natural sciences tend to not to see the relevance of educational and/or qualitative research). The data collection methods are mostly restricted to interviews, questionnaires, and observations.	The chosen disciplinary fields of student teachers did not have a strong influence on their attitude towards educational and/or qualitative research. The data collection methods are mostly restricted to interviews, questionnaires, and observations.
<b>Actors involved in the research project</b>	The research projects were mostly conducted individually, with the exception of one interviewee (s/he conducted it in collaboration with a peer). The student teachers did not mention any stakeholders other than the pupils and their mentor teachers.	The research projects were conducted individually, no reference to possible collaborations. The student teachers did not mention any stakeholders other than the pupils and their mentor teachers.

### *Discussion, limitations, and conclusions*

The Bologna process has reshaped the entire higher education scenario Europe-wide but, in many cases, its influence on teacher education can be considered unique. The universitisation of teacher education was accompanied by the requirement of submitting theses (often of an empirical nature) prepared by student teachers; therefore, research, in one way or another, appears in ITE programmes.

Both ITE programmes provided by the Hungarian and Austrian universities address educational, practice-oriented research (so there are intentions to prepare student teachers for being consumers and producers of research), but in different manners. In the Austrian programme, research is visible on the module level, as one of the sub-module titles is 'Learning, Teaching and Research'. Although there are some courses that are entirely based on research, according to the course description, with the aim of focusing on student teachers' research-related activities and providing support, these courses represented a small portion of the curriculum (only 15.4% out of all the courses can be considered research-based). Most of the courses address students as participants (and not as the audience), and the activities in these courses may contribute to the development of research competence. However, these activities are more related to the university (e.g., discussion, reflection) than to the schools (e.g., observations). Further analysis of the course descriptions revealed that the research process and problems (theory) are emphasised over the research content (practice).

Meanwhile, the Hungarian ITE programme indicates in its module-level titles that the teaching profession reaches beyond the school walls (with a module titled ‘Social relationships’), but there is no explicit reference in course titles to research methodology. Research methodology is more visible in the way student activities are described in the course descriptions: while activities occurring within the university walls (e.g., discussion, reflection) are dominant in this case as well, there are explicit indications that these activities are directly connected to pupils and/or schools (e.g., observations, data collection for the empirical part of MA thesis), to previous practical experience; 22.2% of the courses identify research-related topics, and further analysis showed that research content is emphasised over the research process and problems.

Although the present study forms an integral part of and, by being a pilot, contributes in a great deal to broader doctoral research titled *The evolution of teacher education programmes in different countries with a special focus on the role of practice in developing teacher competences*, there are some limitations:

- due to language barriers, the language of the interviews conducted in Austria was English;
- the small sample size and the sampling method are not adequate for making general conclusions.

Despite the limitations, the analysis of interviews raised a few issues that could both be further studied and relevant for those involved in the development process of ITE programmes:

- Why don't student teachers conduct research-related activities in pairs and/or in groups?
- When student teachers decide on a research topic (for a small-scale project or for their thesis) are the needs of the practice school taken into consideration?
- How could activities of reflection meaningfully support student teachers in their preparation?
- What are the different ways of collaboration between disciplinary departments, educational departments, and practice schools that would support student teachers in conducting practice-oriented research projects during their school-based teaching practice?

Bakkenes, Vermunt, and Wubbels (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. 1). In preparing students for facing the new challenges of the information age and the

knowledge society, knowledge creation in schools becomes significant, including the need for teachers to redefine their (teaching) skills (Hargreaves, 1999). These are just a few of the expectations that teachers should meet, and although ITE might not equip student teachers with all the knowledge and skills they may need in their everyday practice (both due to the relatively short period of ITE and especially of school-based practices, as well as due to the continuously changing living and learning environment), ITE arguably has a vital role in laying the groundwork and setting the direction for student teachers (ET2020 Working Group on Schools Policy, 2015). Developing future teachers' specific competences by better integration of research into ITE programmes means that student teachers will become consumers and producers of educational, practice-oriented research, as well as active participants in relevant educational discourse in which other stakeholders (such as academic researchers and policymakers) are involved. Moreover, being sensitised regarding educational, practice-oriented research, student teachers will enter the world of work with the ability to transform their everyday, classroom practices in the ever-changing social and cultural context with the aim of recognising and reacting to the newly emerging challenges and needs.

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