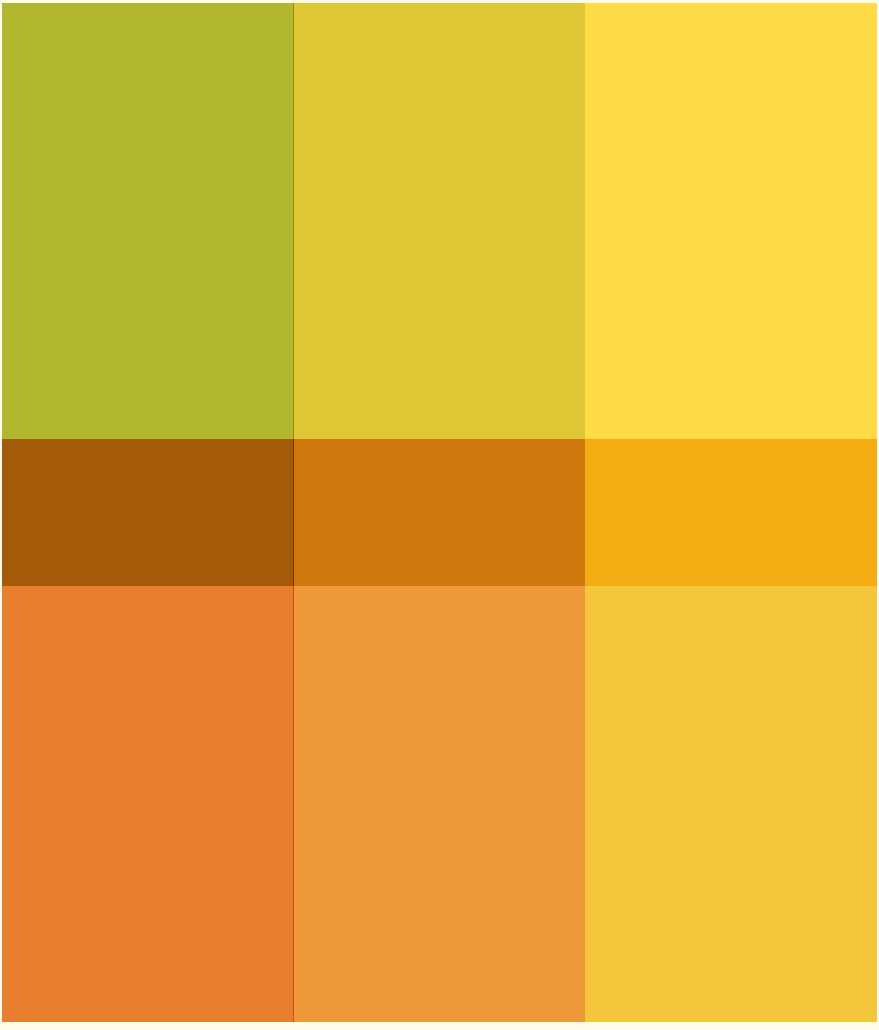
C·E·P·S *Journal*

Center for Educational Policy Studies Journal
Revija Centra za študij edukacijskih strategij

Vol. 10 | No 3 | Year 2020



Revija Centra za študij edukacijskih strategij
Center for Educational Policy Studies Journal
ISSN 2232-2647 (online edition)
ISSN 1855-9719 (printed edition)
Publication frequency: 4 issues per year
Subject: Teacher Education, Educational Science
Publisher: Faculty of Education, University of Ljubljana, Slovenia
Technical editor: Lea Vrečko / **English language editor:** Neville J. Hall / **Slovene language editing:** Tomaž Petek / **Cover and layout design:** Roman Ražman / **Typeset:** Igor Cerar / **Print:** Birografika Bori, d. o. o., Ljubljana /

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The CEPS Journal is an open-access, peer-reviewed journal devoted to publishing research papers in different fields of education, including scientific.

Aims & Scope

The CEPS Journal is an international peer-reviewed journal with an international board. It publishes original empirical and theoretical studies from a wide variety of academic disciplines related to the field of Teacher Education and Educational Sciences; in particular, it will support comparative studies in the field. Regional context is stressed but the journal remains open to researchers and contributors across all European countries and worldwide. There are four issues per year. Issues are focused on specific areas but there is also space for non-focused articles and book reviews.

About the Publisher

The University of Ljubljana is one of the largest universities in the region (see www.uni-lj.si) and its Faculty of Education (see www.pef.uni-lj.si), established in 1947, has the leading role in teacher education and education sciences in Slovenia. It is well positioned in regional and European cooperation programmes in teaching and research. A publishing unit oversees the dissemination of research results and informs the interested public about new trends in the broad area of teacher education and education sciences; to date, numerous monographs and publications have been published, not just in Slovenian but also in English.

In 2001, the Centre for Educational Policy Studies (CEPS; see http://ceps.pef.uni-lj.si) was established within the Faculty of Education to build upon experience acquired in the broad reform of the national educational system during the period of social transition in the 1990s, to upgrade expertise and to strengthen international cooperation. CEPS has established a number of fruitful contacts, both in the region – particularly with similar institutions in the countries of the Western Balkans – and with interested partners in EU member states and worldwide.

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Revija Centra za študij edukacijskih strategij je mednarodno recenzirana revija z mednarodnim uredniškim odborom in s prostim dostopom. Namenjena je objavljanju člankov s področja izobraževanja učiteljev in edukacijskih ved.

Cilji in namen

Revija je namenjena obravnavanju naslednjih področij: poučevanje, učenje, vzgoja in izobraževanje, socialna pedagogika, specialna in rehabilitacijska pedagogika, predšolska pedagogika, edukacijske politike, supervizija, poučevanje slovenskega jezika in književnosti, poučevanje matematike, računalništva, naravoslovja in tehnike, poučevanje družboslovja in humanistike, poučevanje na področju umetnosti, visokošolsko izobraževanje in izobraževanje odraslih. Poseben poudarek bo namenjen izobraževanju učiteljev in spodbujanju njihovega profesionalnega razvoja.

V reviji so objavljeni znanstveni prispevki, in sicer teoretični prispevki in prispevki, v katerih so predstavljeni rezultati kvantitavnih in kvalitativnih empiričnih raziskav. Še posebej poudarjen je pomen komparativnih raziskav.

Revija izide štirikrat letno. Številke so tematsko opredeljene, v njih pa je prostor tudi za netematske prispevke in predstavitve ter recenzije novih publikacij.

The publication of the CEPS Journal in 2019 and 2020 is co-financed by the Slovenian Research Agency within the framework of the Public Tender for the Co-Financing of the Publication of Domestic Scientific Periodicals.

Izdajanje revije v letih 2019 in 2020 sofinancira Javna agencija za raziskovalno dejavnost Republike Slovenije v okviru Javnega razpisa za sofinanciranje izdajanja domačih znanstvenih periodičnih publikacij.

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doi: 10.26529/cepsj.1003

Editorial

The Development of Teacher Research as a Form of Developing Teacher Pedagogical Practice

Although attention to research competence in teacher education curricula has increased, we are still faced with concerns over the lack of research culture in schools and the fact that teachers hardly ever use the results of scientific research to improve their practice (Van der Linden et al., 2015). In the last two decades, researchers have thoroughly studied the concept of research-based teacher education, which has included both training teachers as researchers and teacher educators engaging in integrating research evidence into their teaching. The topic of teacher as researcher – also known as practitioner research – has become an important concept in academic research and it is thus crucial to examine how the debate around this concept has evolved and how this research agenda will advance further.

The idea of teachers engaging in research practice is not entirely new. It was introduced much earlier and various related concepts have been studied in recent decades. In this regard, we have seen the developments in action research as one form of practitioner research. Carr and Kemmis (1986, p. 118) defined action research as a form of self-reflecting enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices as well as their understanding of these practices and the situations in which the practices are carried out. Another great impetus for the development of the "teacher as a researcher" movement was the work of David Schön. His books *The Reflective Practitioner: How Professionals Think in Action* (1983) and *Educating the Reflective Practitioner* (1991) were a great contribution to the notion of teachers acting as reflective practitioners. The discourse of the reflective practitioner emphasises the particular skills needed to reflect constructively upon ongoing experience as a way of improving the quality and effectiveness of one's work.

Since then we have seen the evolution of the reflective practitioner concept into teacher or practitioner research. One important element of the debate around teacher research has been the notion of research literacy or teacher preparation to engage in research practice. Research literacy is understood as the ability to locate, understand, discuss and evaluate different types of research, to communicate accurately about them, and to use findings for academic and professional purposes (Beaudry & Miller, 2016). This implies the need to advance the concept of routine reflection towards more systematic action on the

part of teachers in collecting and interpreting data in order to make sense of their realities and to suggest improvements to practice in an evidence-based manner.

The increasing interest in developing teachers as researchers has in part occurred due to the advancements in defining teacher professionalism, on the one hand, and the permanent changes of classroom realities, on the other. The latter is closely connected to the ever increasing demands on the teaching profession to respond to the complexity of learning, as well as to the various societal phenomena present in todays' societies that in one way or another have a direct impact on what teachers do in school. In this context, teacher education has been responding to these developments in the changing role of teachers in the school setting. In response to the new teacher professionalism and the need for training teachers as researchers, teacher education practice has moved towards the academisation of teacher education by introducing more research skills training and theoretical academic preparation of new teachers.

The question that educators and policymakers therefore rightly ask is: What is a good model of developing teacher as researcher? The framework used for examining the development of teacher as researcher includes the dimensions internal to teachers, the length and quality of the training they are provided, and the school context in which teachers' work is embedded. The answer to the above question is therefore linked to the answers to following sub-questions:

What purpose should teacher research serve?

What are the minimal research skills that teachers need in order to engage in classroom research and how can teachers be best trained for this?

What are good methods of motivating teachers to engage in researching their own practice?

In what ways should school culture support teacher engagement in researching their practice?

This focus issue of the CEPS Journal attempts to contribute to the debate on the teacher as researcher movement in line with the questions raised above. It does so by providing a number of research articles related to the central theme of the issue.

The first article, *Praxis, Pedagogy and Teachers' Professionalism in England*, written by Andrea Raiker, provides an outline of the evolution of teacher professionalism in England and the way current teacher education practices support the advancement of teacher research practices. The article also provides a solid theoretical discussion of the importance and practicalities of developing teacher research.

The second article, *Educational Research Within the Curricula of Initial Teacher Education: The Case of Slovenia* is written by Tina Štemberger. The article is an analysis of teacher education curricula in Slovenia in order to understand the realities of how the concept of research is reflected in the curricula. The research shows that initial teacher education programmes mostly include a course on developing research skills. However, the study highlights the concern that many master's programmes do not include research skills courses and calls for teacher education institutions to address the concept of teacher as researcher in a comprehensive way by recognising it as a form of teacher professional development.

The third article, *Teacher-Researcher Development? Unpacking the Understandings and Approaches in Initial Teacher Education in Kosovo*, is written by Fjolla Kaçaniku. It provides a rich and complex picture of how the teacher research concept is reflected in Kosovo teacher education by analysing teacher education curricula and gathering data from teacher educators and student teachers. The findings support the conclusions: i) the understanding of the teacher-researcher concept within initial teacher education is influenced by teacher educators' field of study as well as programme goals and values, ii) teacher educators and programme values and goals influence the development of teacher-researchers and can adversely impact on future teachers' practical engagement in research, and iii) the conflicting institutional governing variables prompt a fragmented context of teacher-researcher development that emphasises the need for coherence. Thus, the research recommends a more holistic approach to addressing the concept of teacher research within teacher education practices.

The fourth article, *Motivational and Demotivational Factors Affecting a Teacher's Decision on Whether to Do Research*, is written by Andrej Šorgo and Jasmina Heric. Their study involved 325 teachers in an online survey with the aim of understanding the readiness and activity of teachers regarding scientific research. The teachers surveyed predominantly reported that they were prepared to engage in research, although only a quarter of them reported actually having been engaged in research. An intrinsic motivation for research and career goal orientation were reported as the main drivers for teachers to engage in research, while lack of time for research, family life and school culture were considered the main factors that hinder teacher engagement in classroom research.

The fifth article, *Teachers as Embedded Practitioner-Researchers in Innovative Learning Environments*, is written by Wesley Imms, Joanne Blannin, Marian Mahat, Benjamin Cleveland and Julia Morris. Their research was

conducted in the context of Australia and New Zealand, and it emphasises the importance of structured time and processes for teachers in schools in order to engage in research, as well as the need for school leadership to recognise the value of investing this time. In addition, the research emphasises the need to promulgate and disseminate school-based research both inside and outside the school, so that the practice is widely recognised and supported.

The present focus issue is complemented with two articles from the Varia section and two book reviews. The first Varia article is written by Siti Zubaidah, Susriyati Mahanal, Mar'atus Sholihah, Fatia Rosyida and Zenia Lutfi Kurniawati, and is entitled *Using Remap RT (Reading – Concept Mapping – Reciprocal Teaching) Learning Model to Improve Low Ability Students' Achievement in Biology*. The main aim of this study was to investigate the effects of the Remap RT (Reading – Concept Mapping – Reciprocal Teaching) learning model on low-ability students' achievement in biology. The results of the research suggest that Remap RT was effective in improving low-ability students' achievement in biology and is suggested as an adequate teaching strategy.

The second Varia article is written by Edona Berisha Kida and Theodhori Karaj and is entitled *Development of an Albanian Version of the Questionnaire on Teacher-Student Interaction*. The purpose of the article was to adapt an English version of a teacher student questionnaire, creating an Albanian version. The original 64 items of the survey were reduced to 54 items in the Albanian version, which was tested in the Kosovo context to ensure its fitness for purpose.

Žan Korošec reviews a book published by Janez Vogrinc and Blerim Saqipi entitled *Research in Education Sciences. Conceptual and Methodological Perspectives* (Published by Albas in Tirana (Albania), 2019; 112 pp.: ISBN: 978-9928-282-69-9), and Damijan Štefanc reviews a book published by Mojca K. Šebart and Andreja Hočevar entitled *Delusions of preschool education: Does anyone care about the process quality anymore?* Verlag Dr. Kovač (2019; 133 pp.: ISBN: 978-3-339-11112-8).

In conclusion, the five articles related to the focus issue theme of developing teacher as researcher provide a solid basis for examining the concept of teacher research in the necessary breadth and depth. In view of the above, the aim of research-based teacher education – as a broader concept – should not necessarily be seen as being equal to training researchers. Developing teacher as researcher can be viewed as a combination of equipping teachers with research skills, on the one hand, and training them as much as possible in the realities of school, on the other (Mynthe & Rogne, 2015; Niemi & Nevgi, 2014). Hence, teacher research is now seen as a process of engaging teachers in professional

learning and development through reflective and inquiry practice, combined with their classroom-based research activity.

Teacher as researcher and research competence in teacher education programming must now be addressed in the continuum of pre-service and in-service teacher education. Teacher research is much more than knowing about research, and teachers need to be educated and practically exposed to the process of actually doing research during their training. We cannot ignore the fact that it is now time to look at the dimensions of the trustworthiness of teacher research. However, more research and development work needs to take pace first to identify ways in which teachers can be best prepared for the research task and how this role can be best integrated within their duties in the school and the expectations of the teaching profession. Only then will teacher research be able to translate into meaningful professional learning and school development, which need to be experienced, acknowledged and supported by all stakeholders in school.

Blerim Saqipi and Janez Vogrinc

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doi: 10.26529/cepsj.874

Praxis, Pedagogy and Teachers' Professionalism in England

Andrea Raiker[1]

The article considers current teachers' participation in educational research in England and whether Stenhouse's perception that such involvement was necessary to stall the political undermining of democratic teacher professionalism has been addressed. Stenhouse instigated the emergence of the teacher-as-researcher movement, whereby teachers engaged with a process that created knowledge and practice. From 1979, when the Conservative Margaret Thatcher became Prime Minister, the increasing dominance of globalised knowledge economies turned knowledge away from being a process into a product. Teacher and student education became controlled and consumed by increasingly competitive educational institutions. Learning became aimed at assuring the attainment of higher grades to increase the country's economic growth and profit, leading to democratic teacher professionalism being undermined. However, contemporary research by the Organisation for Economic Cooperation and Development has indicated that teacher professionalism should involve teachers in conducting classroom-based individual or collaborative research. In addition, a recent academic inquiry by the British Education Research Association has concluded that teachers as researchers, in both literate and practical terms, will have a positive impact on learner outcomes by developing an education system that has the internal capacity to direct its own progress. At the same time, the Department for Education in England commissioned a two-year study to assess progress towards an evidence-informed teaching system. Taking a systematic literature approach, the present article considers the extent to which current teacher education and practice encourage teacher research as a form of developing pedagogical practice, in other words, praxis, in order to re-establish democratic teacher professionalism in England. It also explores whether there are alternative practices to create the same, or a similar, outcome.

Keywords: pedagogy, praxis, professionalism, critical reflection, research

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Praksa, pedagogika in učiteljska strokovnost v Angliji

Andrea Raiker

Prispevek obravnava trenutno udeležbo učiteljev pri raziskovanju izobraževanja v Angliji in preverja, ali je bilo naslovljeno Stenhousovo dojemanje, da je takšna vpletenost nujna za zadrževanje političnega spodkopavanja demokratične učiteljske strokovnosti. Stenhouse je sprožil nastanek gibanja učitelja kot raziskovalca, s čimer so se učitelji vklopili v proces, ki je ustvaril znanje in prakso. Od leta 1979, ko je konservativka Margaret Thatcher postala premierka, je naraščajoča prevlada globaliziranih ekonomij znanja znanje preusmerila od procesa k produktu. Izobraževanje učiteljev in študentov je postalo nadzorovano in prežeto s strani čedalje konkurenčnejših izobraževalnih ustanov. Cilj znanja je bil zagotoviti doseganje višjih ocen, s katerimi bi se povečala gospodarska rast in dobiček države, kar pa je vodilo v spodkopavanje demokratične učiteljske strokovnosti. Aktualne raziskave Organizacije za gospodarsko sodelovanje in razvoj pa kažejo, da bi morala učiteljeva strokovnost vključevati učitelje v izvajanje individualnih ali skupnih raziskav v učilnici. Poleg tega je nedavna akademska preiskava Britanskega združenja za raziskovanje izobraževanja (angl. British Education Research Association) ugotovila, da bodo učitelji kot raziskovalci v teoretičnem in praktičnem smislu pozitivno vplivali na rezultate učenja z razvojem izobraževalnega sistema, ki ima notranjo zmožnost po usmerjanju lastnega napredka. Hkrati je angleško ministrstvo za izobraževanje naročilo dveletno raziskavo, s katero bodo ocenili napredek v sistemu, ki bi temeljil na informiranju o izsledkih. Prek sistematičnega pregleda literature prispevek obravnava, kako trenutno izobraževanje učiteljev in praksa spodbujata učiteljevo raziskovalno dejavnost kot obliko razvoja pedagoške prakse zaradi ponovne vzpostavitve demokratične učiteljske strokovnosti. Raziskuje tudi, ali obstajajo alternative poti za ustvarjanje enakega ali podobnega rezultata.

Ključne besede: pedagogika, praksa, strokovnost, kritična refleksija, raziskovanje

Introduction

Teacher professionalism is defined by the Organisation for Economic Cooperation and Development (OECD) as the knowledge, skills and practices that teachers must have in order to be educators. This definition is based on a survey of teachers and principals in 34 countries and economies around the world carried out in 2012. Details of the survey's data collection and analysis were presented in the *Teaching and Learning International Survey* (TALIS, 2016), along with its findings on teacher professionalism. A crucial conclusion is that in order for this definition to be achieved, knowledge bases containing the necessary knowledge for teaching (including pre-service and in-service training) should involve autonomy in practitioners' work decision-making. Another significant conclusion is that in order to maintain high standards of teaching, engagement in peer networks is needed so as to provide opportunities for information exchange and support.

Some years ago, in their work integrating Habermas's (1986) conceptions of communicative action with school teacher education, Carr and Kemmis (1986, p. 221) proposed that schoolteachers could "organise themselves as communities of enquirers, organising their own enlightenment". This reflects the OECD's identification of engagement in peer networks, but for something more than just information exchange and support. Enlightenment involves insight, the result of personal and purposeful critical reflection and evaluation. This resonates with research, but relates to problem-solving based on personal experience. Experience can occur haphazardly for individuals; research is based on systematic and controlled data collection, analysis and evaluation that can be open to scrutiny by fellow professionals. Research is not a technical exercise. As Cohen, Manion and Morrison (2005, p. 3) point out in their consideration of educational research, "research is concerned with understanding the world and that is informed by how we view our world(s), what we take understanding to be, and what we see as the purposes of understanding". In other words, collecting empirical data through observation, interview and questionnaires provides a certain practical level of research, structuring it with growing ontological, epistemological and theoretic awareness and understanding results in higher levels of research. This consideration therefore suggests that teacher professionalism should include research that can be done with others but requires an individual awareness and understanding of theory. The OECD acknowledged this in proposing that education policies should consider "supporting teachers in conducting classroom-based individual or collaborative research" (2016, p. 23) in order for this conceptualisation to be achieved.

Awareness and understanding of theory, resulting in particular practice in teaching and learning, also leads to increased mindfulness and perception of pedagogy. However, for many years in the past in England and in Britain as a whole, there has been little academic critical thought regarding the meaning of "pedagogy". As Simon concludes, "dominant educational institutions…have had no concern with theory, its relation to practice with pedagogy" (1981, p. 11). Simon believes that this was because since the nineteenth century, schools have believed that education should be concerned with "character" rather than intellect. Kemmis saw this as producing a technical view of teachers' identities and their teaching, which demeans their practice:

> … a long tradition of splitting facts and values in positivistic science and pseudo-science…threatens to empty practice of its *moral* dimension. This is a price the professional practitioner should not be prepared to pay for the 'certainties' allegedly given by the particularly restricted range of 'evidence' that 'counts' in the evidence-based approach to practice. Practice is just not that simple. (2010, p. 160)

Kemmis goes on to argue strongly and persuasively that the conception of teachers as subject experts and pedagogical technicians should be extended to include conceptions of teachers as being socially, discursively, culturally and historically formed. Through conducting their own research, not only will teachers become more knowledgeable and have a greater understanding of the what, why and how of teaching, they will also know and understand more of the what, why and how of students' learning and how ideologies impact on these. What is more, they will have a greater understanding of the social, discursive, cultural and historical dimensions that have resulted in the current education policy and practice, and will gain the knowledge and evaluative skills to question these dimensions. When Simon was writing in the 1980s, pedagogy in the UK was considered to be didactic, a science of teaching knowledge and understanding of prescriptive content. The present article begins by evaluating whether faculties of education have introduced their students – or trainees as they have been called for decades – to a new epistemology of practice in which the notion of praxis is central. Praxis relates theory to practice, resulting in pedagogies that can be justified by autonomous reflection, not by conforming to external demands. This can lead to a profound change in teachers' understanding of their professional identity, giving them the power to democratise their profession further through taking control, as Lawrence Stenhouse advised and contended. Clearly research impacts on praxis.

In 2014, the British Education Research Association (BERA) published its final report on *Research and the Teaching Profession: Building the Capacity for a Self-Improving Education System*. The report states "The evidence gathered by the inquiry is clear about the positive impact that a research literate and research engaged profession is likely to have on learners' outcomes" (2014, p. 6). The report also calls for "commissioners of education research [to] build teacher engagement into commissioning processes, so that whenever possible teachers are involved in the democratic process of being active agents in research, rather than passive participants" (ibid. 8). This makes a strong case for schools and colleges to become research-rich environments and for teachers to be research literate. The report calls on "policymakers" to follow the Scottish model in which research is embedded within career-long professional learning, and for universities and others to reach out and support those who are engaging in practitioner research to inform strategic improvement.

Coincidently, in August 2014, the Department for Education (DfE) commissioned a two-year study to assess progress towards an evidence-informed teaching system. In the resulting report, published in 2017 as *Evidence-informed teaching: an evaluation of progress in England*, the term "evidence-informed teaching" is used to mean practice that is influenced by robust research evidence. However, a key finding of this research is that:

> Most teachers interviewed did not feel confident in engaging with research directly, or feel able to judge its quality, relying on senior leaders and other organisations like the Sutton Trust and the Education Endowment Foundation (EEF). The exceptions were those undertaking higher level academic study. (2017, pp. 6–7)

This key finding has generated the purpose of the present article: to assess the importance of research in teacher education as necessary in order for teachers to know about and understand pedagogy and praxis so as to maintain and develop high quality teacher professionalism. The article begins by considering whether current teacher education in England encourages teacher research as a form of developing pedagogical practice. It then considers the political context of teacher research since the 1960s, and the recent rise of critical reflection in teacher education and its relation to pedagogical practice. It concludes with an assessment of contemporary praxis, pedagogy and professionalism in England in relation to the OECD, BERA and DfE conclusions.

Pedagogy, research and teacher education in England

As the OECD advocates in TALIS (2016, p. 23), Britain meets the requirement for "teachers to participate in pre-service formal teacher education programmes". This requirement continues in stating that education programmes must "expose teachers to pedagogy and provide opportunities for practice teaching". In England, however, there are problems in educating teachers to be pedagogically informed. Since the 1963 Robbins Report on Higher Education, would-be teachers have entered universities to become qualified with Bachelor of Education degrees (CHE, 1963). For students who already have a degree, they enrol as trainees in a one-year Postgraduate Certificate of Education (PGCE) in either primary or secondary education (Hopkins, 2020). These courses have seminars and lectures on educational theory, policy and pedagogy, but usually only on brief occasions during the one day a week the students spend in their universities during term time; the rest of the week is spent in a series of placements in local schools. Clearly, these trainees do not have much time to learn about educational theory and research. Yet, if successful in their studies and school practice, they will be awarded Qualified Teacher Status (QTS). Students are also able to gain QTS by training as primary teachers at undergraduate level by doing a three-year BA (Hons) in Primary Education. However, whatever the course in non-Russell Group universities (24 research-intensive world-class UK universities), entry qualifications are based on moderate, even low, grades. Currently, such universities are being criticised for making "conditional unconditional" offers to applicants. Although these offers are initially conditional on A-level results (final examinations in secondary schools), they become unconditional if the applicant makes that university their first choice, meaning that s/he does not need to achieve the stated A-level grades (UCAS, 2019). In education faculties, it is difficult for an applicant not to be awarded a place, as there is a shortage of teachers in the UK and the number of pupils is rising (Sibieta, 2020). Therefore, a key aim of education faculties is for trainees to pass. Although there is some time for trainees to learn about educational theory and research for their dissertations, not all trainees will want to do so, nor will they all have the necessary time or regard it as essential to engage with theoretic thought.

There have been and still are concerns raised in certain pre- and post-secondary education institutions that university-based teacher education relies on lecturers who do not have day-to-day connections with schools and colleges (Raiker, 2010b). This results in university lecturers not being sufficiently knowledgeable about what constitutes actually being a teacher in schools, which vary so much in England depending on their location, demographics,

lowering finance and changing policy. Together with concerns about university-educated teacher quality, this resulted in the Labour government moving teacher education into schools through "school-centred initial teacher training" (usually referred to as SCITT) when coming into power in 1997 (Hopkins, 2020). SCITTs consist of a coalition of local schools that sometimes have a relationship with a university, but often do not. Either way, they are able to train teachers and award QTS if their students are successful in completing their programmes. There are now other ways of acquiring QTS, as well. For example, the programme *School Direct* is apprentice-type training whereby schools employ and pay unqualified persons with the aim of awarding them with QTS and employing them if they are successful. Another option is *Teach First*, whereby highly qualified graduates, including those with master's degrees and PhDs, are employed after some initial training and supported by mentors in city schools situated in low socioeconomic locations. With little time spent in education faculties, it is difficult for these trainees to acquire an understanding of pedagogy and to engage with praxis.

The lack of knowledge and understanding of educational theory and research practice does not impact greatly on trainees' potential to gain QTS. The role of the teacher in England is determined by the *Teachers' Standards* (DfE, 2012), which define the minimum level of specified competences to be achieved to be awarded QTS, a benchmark that can be subsequently used for future continuing professional development (CPD) and teacher professionalism. The eight teaching standards and three statements defining personal and professional conduct, examined in practice by the government's Office of Standards in Education (OfSTED), are given in Table 1 below:

Table 1
The role of the teacher

PART 1	**Teaching; a teacher must:**
	– set high expectations which inspire, motivate and challenge pupils;
	– promote good progress and outcomes of pupils;
	– demonstrate good subject and curriculum knowledge;
	– plan and teach well-structured lessons;
	– adapt teaching to respond to the strengths and need of all pupils;
	– make accurate and productive use of assessment;
	– manage behaviour effectively to ensure a good and safe learning environment;
	– fulfil wider professional responsibilities.

PART 2	**Personal and professional conduct:**
	– teachers uphold public trust in the profession and maintain high standards of ethics and behaviour, within and outside school;
	– teachers must have proper and professional regard for the ethos, policies and practices of the school in which they teach, and maintain high standards in their own attendance and punctuality;
	– teachers must have an understanding of, and always act within, the statutory frameworks which set out their professional duties and responsibilities.

Note. Adapted from Teachers' Standards, 2012.

In the past two decades, however, schools in the compulsory state sector have been given the option of leaving local authority control and their budgets to become "academies", which gain their finances directly from the DfE (thus being directly under its control) and can choose their own balanced and broadly based curriculum on the basis of the 2002 Education Act (DfE, 2002). Furthermore, academies and "free schools" – educational institutions established on the initiative of parents, teachers, businesses or organisations in the local community (subject to approval by the Secretary of State for Education) – do not have to employ teachers with QTS status, although they do have to conform to OfSTED criteria, which are based on the *Teachers Standards*. As can be seen, the words "research", "pedagogy", "educational theory" and "praxis" do not appear in the *Teachers' Standards*. The word "professional" does, however, appear several times, including in the title of Part 2. It is clear that the pedagogical approach of teachers in England, controlled by OfSTED, is expected to comply with political thinking and thus be didactic. This defines current teacher professionalism and explains its relationship to research. The conclusions of the OECD and BERA that research should be integrated into teaching practice and CPD are clearly not being implemented; nor is the DfE's conclusion that practice should be supported by robust research evidence: its research report states that "For teachers, evidence-informed teaching usually meant drawing on research evidence (directly or as translated by school leaders) to integrate and trial in their own practice, rather than directly applying research findings" (2017, p. 6). The impact of this on student attainment will be considered below. However, this has not always been the case, and change might be forthcoming. As the next section indicates, in England, Kemmis's conception of teachers being subject experts and pedagogical technicians should be extended to include conceptions of them being socially, discursively, culturally and historically formed, and to take into account the political determination of the time.

The political context of teacher research in England

In the 1960s, teacher professionalism became graduate education with dissertations involving research that included courses on philosophy. The 1960s were a period of experimentation, with Local Education Authorities working with universities and schools. An example is the *Secondary Humanities Curriculum* project (Bramwell, 1976), aspects of which are still in evidence today in the form of dialogic teaching and the use of philosophy for children to explore problematic social and emotional issues. These progressive educational practices gave children a great deal of choice and freedom over what and when they learnt in school. Teachers had the choice and freedom to teach what they wanted to teach in a manner and to a timescale that suited them. Choice and freedom, i.e., autonomy, are key aspects of democracy. This prompted the emergence of the "teacher as researcher" movement, partly because teachers had the time and opportunities to carry out research, and partly because educationalists such as Lawrence Stenhouse and John Elliot rightly perceived the signs of a political reaction to the progressive educational practices that threatened democratic teacher professionalism. Progressive education had powerful detractors. Earl, Watson, Levin, Leithwood, Fullan and Torrence (2003) termed the 1960s and early 1970s the era of "uninformed professionalism". A series of five "Black Papers", written by right-wing educationalists and published between 1969 and 1977, attack what the authors saw as the excess of progressive education and indiscipline in schools. The William Tyndale affair of 1975, when radically child-centred methods were introduced by the William Tyndale Junior School's headteacher, resulting in protests against the methods by parents and staff, prompted the press to distribute rumours of anarchy in the English education system. As a result, in 1976, the Labour Prime Minister James Callaghan launched his "Big Debate" on education in a speech given at Oxford University's Ruskin College. This was the beginning of the end for teacher and teacher educator autonomy in England (and Wales). In the 1970s, Kemmis's (2010) views on teachers' individual personalities and pedagogy being socially, discursively, culturally and historically influenced by external values and norms became dominated by neoliberal emphases on teacher education ensuring "professional" conditioned compliance. This approach did not – and still does not – encourage democratic practice.

At the same time, there was an international focus on achievement in language and mathematics, raising concerns about teaching and learning methods in these subjects. In the UK, particular emphasis was placed on identifying the causes of what was perceived as a "long tail of under-achievement"

in basic literacy and mathematical skills. Stenhouse continued to publicise his belief that it is not politicians, but "teachers who, in the end, will change the world of school by understanding it" (1981, p. 46) and that teacher professionalism should be developed by involvement in studying the work of teaching and actively teaching it, not passively leaving it to university academics. UK Departments of Education were nonetheless given the task of determining the causes of under-achievement in basic literacy and mathematics. The research they produced was, however, widely criticised, particularly in terms of its credibility and usefulness (Hillage, Pearson, Anderson, & Tampkin, 1998). Foremost amongst the critics was the renowned British educationalist Professor David Hargreaves. Hargreaves had been evaluating the quality of educational research produced by academics in universities at the time, and had identified not only a lack of rigour, but also a dearth of originality and a lack of dissemination of findings in order to inform and develop teachers' practice. He suggested that there was an "urgent need for better professional knowledge about the management of schools and effective teaching and learning" (Hargreaves, 1999, p. 122). He continued by remarking that "One alternative is to treat practitioners themselves as the main (but not only) source for the creation of professional knowledge" (1999, p. 125). Stenhouse, Hargreaves and others proposed that teachers should be the subjects and users of educational research, and should generate educational knowledge on teaching and learning for a wider public audience. Furthermore, they maintained that involvement in research would restore a sense of democratic professionalism and power in teachers, in the sense of having a "voice" and being able to act through informed and evaluated choice.

However, politicians neither listened to their voice, nor recognised their choice. At the DfE, Margaret Thatcher's *Education Act* signalled the end of university control of education. Theory in teaching, the key to pedagogical development and praxis, was not so much neglected as banished following a right-wing campaign against the belief that teaching required theoretical underpinning. With the *Education Reform Act* of 1988 prescribing the curriculum, and the 1994 *Education Act* establishing the Teacher Training Agency to control teacher-training supply, funding and content, teacher and school education became manifestations of government ideology. According to Ball (2003, p. 216), "performativity is a technology, culture and mode of regulation that employs judgments, comparisons and displays as means of incentive, control, attrition and change…[representing] the worth, quality or value of an individual or organisation". Levels of performativity were overseen and maintained by a new regulatory body, the Office of Standards in Education (OfSTED). The quality assurance/audit-driven approach established by Thatcher of prescribed curricula and assessment, league

tables and inspection of schools and teacher training providers was not tempered by the ascendency of the Labour Party in 1997. Tony Blair's rhetoric of putting emphasis on education and of "raising the bar and closing the gap" was researched by Thompson, Hall and Jones (2010) during the final year of his government. They concluded their research by stating:

> We showed that the policy mantra of raising the bar AND closing the gap is an ideological construct which sutures together these two goals in conceived policy space, then mandates a technology of targets and tests. This translates into everyday educational practices geared to the transmogrification of students into data, and their teachers into alchemists, in the perceived space of contemporary English schooling. (2010, p. 653)

The deprofessionalisation of teaching resulted in performance management, increased monitoring and appraisal systems, and curricula prescription tied to testing. This did not provide environments in which the OECD's criterion of supporting teachers in conducting classroom-based individual or collaborative research was easy to establish. Managed by hierarchical administrators, teacher autonomy and responsibility had been replaced by standardisation of work practices and accountability.

Professor David Hargreaves was, however, held in high regard by Blair's government. His influence was such that the Teacher Training Agency, the Department for Education and Skills, and the National Union of Teachers produced initiatives that included the establishment of Best Practice Research Scholarships (BPRS) for teachers' CPD. According to Furlong and Salisbury (2005), during the years 2000–2003, approximately 1,000 scholarships worth up to 3,000 British pounds each were awarded to practising schoolteachers to take part in university-mentored classroom-focused action research. The stipulated approach of action research when applied to education is concerned with critical praxis and its impact on pedagogical practice. It involves "changing individuals on the one hand and on the other, the culture of the groups, institutions and societies to which they belong" (Kemmis & McTaggart, 1992, p. 16). Furthermore, action research is "a form of collective self-reflective inquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices" (Kemmis & McTaggart, 1992, p. 5). This clearly resonates with the OECD's conclusions from their TALIS work that teacher professionalism is based on autonomy and engagement with peers in order to stimulate positive change.

When the BPRS scheme came to an end in 2003, Furlong and Salisbury's

(2005) evaluation of its last year revealed both positive and negative results. Their evaluation was based on case studies in 20 schools and an examination of the aims, purposes and methodologies of 100 research proposals. Furlong and Salisbury's findings were that the principle purpose of teacher research was not to contribute to the public stock of knowledge, as is the case for academic researchers, but to improve the pedagogy of the teachers' schools. This is, in fact, what Stenhouse, Hargreaves and others had maintained was the purpose of teacher research back in the 1990s. Indeed, Furlong and Stirling discovered that engagement with the research process, primarily undertaken as action research projects, had a significant impact on participants' CPD in terms of their understanding of what, how and why practice impacted on their teaching, their pupils' learning, parents' perceptions of their schools, and their colleagues' practice. This reflects Kemmis and McTaggart's (1998) argument on the purpose of action research projects in education. However, Furlong and Stirling found that in only a small number of projects were the research methods, methodology and data analysis considered to be robust in terms of academic research.

Despite the end of the BPRS scheme in 2003, practising teachers are still being introduced to research through Masters in Education programmes (Raiker, 2011). Unlike in many countries in Europe, achieving a master's degree is not related to initial teacher education (ITE) and qualified teacher status. Before enrolling in a master's course, teachers are expected to have experience of teaching and learning, and to understand what teacher professionalism means in terms of norms, values and government inspection through OfSTED. However, although most teachers are not involved in 180 credit master's degrees and their associated research, special educational needs and disability (SEND) teachers are required to study two 30-credit units focused on SEND aims, objectives and practice in order to be appointed to SEND roles. An issue now for any teacher engaging in master's courses is that the profession is more time-consuming than it was in the days of the BPRS and similar initiatives. To undertake a master's course involves reading widely about other professionals' research and practice, understanding that social, cultural, political and historical contexts underpin the complexity of educational theory, and being aware of the need to discuss, reflect, critically analyse and evaluate (Raiker, 2010a). Above all, teachers understand that it means the necessity for communicative action arising out of the knowledge and understanding gained, taking place in the public sphere of their schools. In England, Masters in Education courses – and not ITE courses – have the key role in the development of teachers as researchers. This is confirmed by a DfE research report (2017) that states that the few teachers who were confident in carrying out their own research and

introducing its findings into their practice had undertaken higher level academic study. This suggests that if students' attainment in schools and education faculties rises without emphasising research in ITE, then education curricula must include an alternative element (or elements) that relates to pedagogy and praxis and increases the quality of teachers' professionalism.

There must, however, be teachers who engage with research. Both primary and secondary research involve raising knowledge and understanding beyond individual thought and experience. As Cohen, Manion and Morrison (2005) maintain, it is important that educators have an understanding of the world, of the purposes of this understanding, and of how citizens' worlds are viewed in relation to education. This provides insight into theory and philosophy. Master's students have to undertake a dissertation that requires primary as well as secondary research. It is here, in the dissertation process, that they become teacher researchers with the express aim of improving not only their own practice, but the practice throughout their schools, and it is here that teacher educators' lack of knowledge and practice in educational research can result in students becoming confused, losing direction and failing to achieve their potential. Research by the author (Raiker, 2010b) into the dissertation process identified, amongst other findings, that supervisors' knowledge and practice of the educational research process – in other words, their personal experience in carrying out educational research themselves and writing academically about it – had a direct impact on both the confidence of their students to carry out primary and secondary research, and their dissertation grades. Teacher educators need to be researchers in the field of education so that they have the appropriate understandings of the social, cultural, political and historical influences on teacher identity, professionalism and pedagogy to impart to their students through discursive teaching.

The rise of critical reflection in teacher education

Despite the difficulties limiting trainees and teachers engaging with research due to government policies and their growing control over teacher and school education, thus curtailing the autonomy of teachers and teacher educators, there has been increasing emphasis on supporting questioning and engaging with dialogic at all levels of education through critical reflection. Questioning to encourage learners to give voice to their thinking was identified as a key finding of research carried out by Clarke, McCallum and Lopez-Charles (2001) as well as the work undertaken by the *Assessment Reform Group* (2003) at the time when the BPRS scheme came to an end. This research, commissioned by

the Labour Government, was in response to the realisation that by the time a pupil failed a summative assessment, regarded as assessment *of* learning, it was too late to take action. The purpose of assessment *for* learning is to raise achievement by identifying issues as early as possible and addressing them through appropriate interventions. It was recognised that rather than produce shadows of themselves, learners constructed their own views of the world based on reasons that would have meaning for them. This constructive view of learning means there is a recognition that pupils in schools and teacher trainees have an understanding of what they do and do not know. They, too, must therefore be brought into the assessment process. As a facet of educating for democracy, the educator and the learner both give feedback on the assessment, with the educator, as a pedagogue, taking the lead on what is required in order to meet the learning objective. It is the learner's responsibility to achieve the learning objective. Both assessment *for* and *of* learning are now contained in the *Teachers' Standards* under the heading *Make accurate and productive use of assessment*.

This brings to mind the reflection on educational research by Cohen et al. (2005, p. 3) that "research is concerned with understanding the world and that is informed by how we view our world(s), what we take understanding to be, and what we see as the purposes of understanding". As is discussed above, however, research involves systematic and controlled data collection, analysis and evaluation. This is where teacher trainees' involvement with reflection takes them to the realm of educational research, identified through the author's research into theoretical perspectives arising through educational practice (Raiker, 2010a). Analysis of 174 trainee records submitted with their dissertations, three two-hour dissertation support sessions, and structured interviews with six trainees and six supervisors revealed that reflection was a key element in the dissertation process. Reflection was identified as thinking about knowledge with or without purpose. Clearly, teachers assessing *for* learning have a purpose, as do trainees intent on giving dissertations that will pass, not fail! Having perceived this fundamental definition, the author identified and related a further four key academic skills predicated upon reflection:

- analysis: the application of critical, rational, logical and purposeful reflection to deconstructed knowledge;
- evaluation: the making of judgements on the outcomes of critical, rational, logical and purposeful reflection on deconstructed knowledge;
- synthesis: the fusion of outcomes of evaluation into new knowledge, broadening and/or deepening the knowledge base;
- creativity: the unique restructuring of an individual's mental connections

to gain new insights through the application of reflective skills on subject knowledge and understanding.

It can be argued that reflection through reflective skills connects three key areas of teacher professionalism: knowledge and understanding of a subject, pedagogy, and work experience. If knowledge and understanding of those three areas and of the reflective skills is sufficient, the distinctiveness of pedagogical practice will be revealed in terms of content, context, criticality, complexity and creativity, i.e., originality. This resonates with research practice and is praxis: there is a connection to theory. Reflection has been present in initial teacher education courses in England since the 1990s, based on the theoretical work of John Dewey, Donald Schön, Jack Mezerow and others. The aim of reflection courses concerns understanding the role of critical reflection practice in ITE, recognition of reflective practice models, identifying difficulties in ensuring that reflection leads to learning, and the development of strategies to ensure reflection supporting learning development. A common practice involves reflective journal writing, allowing trainees to construct their own understanding of the critical nature of the classroom environment, which is necessary to provide a context for the learning of children and trainees. In order for critical reflection to become part of teachers' practice, it is therefore considered important that teacher trainers and educators are themselves critically reflective practitioners, and that they make reflection an ongoing part of their courses and sessions.

The Teaching Agency (TA), established in 2011 by the Conservative/Liberal Democrat coalition government led by David Cameron and Nick Clegg, has been and still is responsible for ensuring the supply of high-quality teachers and training, and for teacher regulation. The TA considers professional development as consisting of reflective activity designed to improve an individual's attributes, knowledge and understanding, and skills. It supports individual needs and improves professional practice. However, "reflective activity" takes place in an education system controlled by government through imposed standards, inspection and competition stimulated by the publication of league tables. The outcome is that higher education courses for teachers in England, focused on improving professional practice through "reflective activity", become aligned with, and conform to, government neoliberalist ideology. Being a government agency, the TA's role is to encourage improvements through conformity. This does not resonate with improvement construed as the deepening of personal insight into the epistemological and ontological underpinnings of pedagogy, which are the bases of understanding and creativity.

Nevertheless, there is clearly a connection between research and reflection. It can be argued that all English educators have the knowledge and understanding to autonomously question their pedagogical practice by developing relationships with their students, be they trainees or pupils. This confirms Part 1 of the *Teachers' Standards* and involves data collection, both quantitative and qualitative, of individual students so that assessment *for* and *of* learning can take place – both for that individual as well as for the age and ability ranges in a school and schools – in a faculty for education and faculties. This has resulted in raising the UK and England's positioning in the Programme for International Student Assessment (PISA), which can be regarded as an example of assessment *of* learning. PISA examines the knowledge of 15-year-old pupils in reading, mathematics and science, and assesses what they can do with their knowledge. In the 2015 (OECD, 2016) survey of 70 countries, the UK attained the 15th position in science, 21st in reading and 27th in mathematics. In the 2018 (OECD, 2019) survey of 78 countries, the UK had risen to 14th position in science, 14th in reading and 17th in mathematics. Critical reflection appears to have had a positive effect on pupil learning due to its emphasis on assessment *for* learning.

Conclusions

As noted above, the English conception of teachers' professional development, as expressed in the *Teachers' Standards*, does not include the terms "pedagogy" or "theory". The conclusion can be drawn that the TA does not consider knowledge, understanding and creation of theory to promote pedagogical change as being important in improving practice. Due to this approach, the one-year postgraduate course that prospective primary and secondary teachers undertake to achieve QTS contains little theory.

If the DfE wants to take into account the OECD's proposal that education policies should consider "supporting teachers in conducting classroom-based individual or collaborative research" (2016, p. 23) in order to achieve an evidence-informed teaching system influenced by robust research evidence, there would need to be fundamental changes in teacher education.

The DfE would need to acknowledge that the one-year postgraduate course is not long enough for meaningful engagement with educational theory. Knowledge and understanding of such theory take time to develop through relating the role of theory to practice, and thus teaching through praxis; this is fundamental to continuing professional development. Furthermore, those who want to become teachers would need to have higher standards to be admitted into teacher training. There needs to be change. At the time of writing,

however, there are no indications that the decades-old education policy of separating theory and practice, and constructing courses focused on the latter, will alter. This is not because teachers and teacher educators are against theory; as the DfE's research report (2017) reveals, teachers want to know more about research and theory, but are constrained by time, workload, and lack of financial and school leadership support. According to the research data analysis and evaluation, most teachers value research evidence. While some teachers did not see the value of external research, most did. This is due to the value placed on it by senior leaders and, crucially, because of the need for such evidence to be focused on problems and practice. However, the growing number of children and the declining number of teachers in England mean such changes cannot take place at the moment.

The conclusion is, therefore, that the limited inclusion of theory in ITE courses will cause master's, SEND and doctoral programmes to become increasingly important in ensuring the survival and generation of educational theory. This is supported by the fact that recent governments have not given any indication of an intention to reverse the cutting of funding for teacher-as-researcher projects such as the BPRS scheme in the late 1990s and early 2000s. BPRS holders worked with university-based academics so that the essential goals of improving knowledge of subject, practice and educational theory, as well as understanding of research methodologies in education, were achieved. There is nothing similar in existence today. The DfE's qualitative research (2017) indicated that teachers and school leaders (particularly those working in SCITTs) are more likely to look towards specialist organisations and academics to carry out research. This is despite BERA's conclusion that in England and in the UK as a whole, teachers' research and their experiences of being involved in carrying out research would result in self-improvement, both for individual educators and their schools. This would be progress towards re-establishing democratic professional development. However, educational theory and research methodology in university Masters in Education courses currently have to deal with students having basic related knowledge, or none at all, due to the lack of theoretical and research content in ITE and school experience. As the DfE research (2017) concludes, teachers' awareness and understanding of educational theory and research methodology is established through SEND, master's and doctoral courses at universities, not by teachers being researchers in schools.

Trainees currently nonetheless engage with critical reflection in their courses. Whereas the number of teachers taking part in SEND, master's and doctoral studies is limited, virtually all teacher trainees learn about critical reflection and act upon it in their school practice. This means that newly qualified

teachers work individually and collectively towards a sense of agency, thus promoting peer networks, as recommended by the OECD, and encouraging democratic teacher professionalism. It also results in the emergence of explicit tacit knowledge that can encourage practitioners to link their existing knowledge to research and theory in their field. This resonates with the meaning of praxis. Above all, critical reflection impacts on trainees as well as teachers in analysing, evaluating and, if concluded, changing their pedagogies in a variety of contexts, both theoretically and in practice. This is praxis in action. As discussed above, the UK's positioning in PISA assessments is improving. Critical reflection is working. The quality of teacher professionalism is therefore increasing for the majority of practitioners. As with educational research, critical reflection can be regarded as an aspect of individual teachers' professionalism and their pedagogical understanding. This meets the OECD's criterion for teacher professionalism that knowledge bases containing the necessary information for teaching (including pre-service and in-service training) should involve autonomy in practitioners' work decision-making.

The overall conclusion on this assessment of the importance of research in teacher education being necessary in order for teachers to know about and understand pedagogy and praxis so as to maintain high-quality teacher professionalism, is that this is the case. However, although the encouragement of integrating educational theory and research methodology into ITE is not currently possible, progressing praxis through pedagogical practice *via* critical reflection is having a positive effect on pupil achievement. Stenhouse and Hargreaves would approve of critical reflection in the current English education system, as it enables teacher professionalism to become more autonomous and thus democratic through a sentient social commitment of teachers to the greater good of their vocation.

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doi: 10.26529/cepsj.871

Educational Research Within the Curricula of Initial Teacher Education: The Case of Slovenia

Tina Štemberger[1]

Professional learning is a continuum starting in initial teacher education and persisting throughout the teacher's career. Initial teacher education programmes should therefore prepare prospective teachers for professional learning via research. There is, however, little knowledge about how initial teacher education programmes educate students about this important subject. The aim of this study was to identify how initial teacher education programmes in Slovenia address the question of empowering prospective teachers with research competence. We analysed all of the initial teacher education programme curricula and established that: (i) overall, more than half of the initial teacher education programmes do not include acquiring research competence as an aim of their study programmes; (ii) the majority of bachelor initial teacher education programmes include courses aimed at gaining research competence, but half of the master's initial teacher programmes do not provide any courses related to research; and (iii) there is a variety of European Credit Transfer and Accumulation System weightings for educational research courses across initial teacher education programmes in Slovenia.

Keywords: initial teacher education, research competence, educational research

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Pedagoško raziskovanje v programih začetnega izobraževanja učiteljev v Sloveniji

Tina Štemberger

Učiteljev poklicni razvoj se začne v okviru začetnega izobraževanja in se nadaljuje skozi celotno profesionalno pot. Programi začetnega izobraževanja naj bi zato prihodnje učitelje opolnomočili za profesionalno učenje prek raziskovanja, vendar pa je to področje šibko raziskano in zato slabše poznano. Cilj te študije je bil ugotoviti, kako programi začetnega izobraževanja naslavljajo raziskovalno kompetenco. Na podlagi analize vseh programov začetnega izobraževanja v Sloveniji je bilo ugotovljeno: i) da v splošnem več kot polovica teh programov ne vključuje raziskovalne kompetence kot učnega izida; ii) da večina dodiplomskih študijskih programov vključuje predmete, v okviru katerih naj bi študentje pridobili raziskovalno kompetenco, hkrati pa kar polovica magistrskih študijskih programov takšnega predmeta ne predpisuje; iii) da je predmetom, ki razvijajo raziskovalno kompetenco, namenjenih zelo različno število kreditnih točk.

Ključne besede: začetno izobraževanje učiteljev, raziskovalna kompetenca, pedagoško raziskovanje

Introduction

In modern societies, which are characterised by constant and rapid change, the roles of teachers are becoming increasingly demanding, thus giving rise to a need to enable teachers to cope with the complexity of these demands and needs (OECD, 2009). Teachers should therefore be given the opportunity to gain a variety of competences, including those of knowledge development, research and critical thinking (EC, 2013; EU, 2009). It should, however, be stressed that the idea of encouraging teachers to conduct their own research is not new (Hammersley, 1993). Stenhouse (1975), for instance, argued that assumptions and habits acquired in the past constrain us, and that teachers should understand teaching as a process in which they learn how to improve their skills and capacities. Consequently, Stenhouse introduced teacher research as a concept for the professional development of teachers (Devetak & Vogrinc, 2014) and as an important element of promoting teachers' professional development (Moutafidou, Melliou, & Georgopoulou, 2012). Similarly, Valenčič Zuljan and Vogrinc (2010, p. 457) argue that teachers' competence in innovation and research is one of the fundamental conditions for significant changes in educational practice as a response to changes within society. Teachers should, through research, investigate the impact of interventions or explore the positive and negative effects of educational practice (BERA, 2014). In addition, Kanasanen (2014) stressed the role of research in integrating theory and practice, which are intrinsically connected and can be implemented by means of practitioner research and/or evidence-based practice. Admiraal, Smit and Zwart (2014, p. 1) claim that "teacher research is a way to bridge the gap between theory and teaching practice", which refers to: implementing research results in practice, using practice as a source of research problems, and cooperation between researchers and practitioners. Teachers' involvement in research (also known as practitioner research) is defined as a process in which teachers evaluate and reflect on their own teaching practice, its impact and the processes associated with teaching, using the appropriate methodology of educational research (Seberova, 2010).

The British Educational Research Association's Action and Research Centre (BERA-RSA, 2014) has prepared a report on teacher education in the United Kingdom identifying four main areas in which research can contribute to teacher education: (i) the content of initial teacher education (ITE) programmes should be derived from research-based knowledge, (ii) the structure and delivery of ITE programmes should consider research findings with regard to the role of research in ITE programmes, (iii) teachers and teacher

educators should be competent in both conducting research and using research findings, and (iv) teachers and teacher educators should be researchers of their own practice.

BERA (BERA-RSA, 2014) stresses that both schools and faculties delivering ITE programmes need to become research-rich environments in which teachers and researchers work in partnership rather than conducting their work as completely separate entities. The report also emphasises that research-rich schools and universities or colleges offering initial teacher education programmes are the hallmark of high-performing education systems, and that teachers and teacher educators need to engage in research to keep abreast of the latest advances in their academic field and to progress in education. In order to do so, they need to be properly equipped to engage in research, which means having the capacity, motivation, confidence and opportunity to do so. Teacher research competence needs to be sustained during initial teacher education programmes and throughout teachers' professional careers, thus leading to an understanding of research as a normal element of teaching and learning.

In summary, by conducting research, teachers research their own practice, on the basis of which they evaluate and improve their own work, which is an important element of their professional development. They also combine theory and practice, which can ultimately lead to significant changes in educational research and practice.

The Role of Research in Initial Teacher Education

In order to empower and inspire prospective teachers to commit to research, it is very important that they are made aware that conducting research on educational practice is one approach to establishing and ensuring the quality of such practice, and that they recognise research as an important factor in their professional development. It is therefore crucial that student teachers develop a basic understanding of research and gain some practical experience in it, with the aim of developing an understanding of the concept of practitioner research (Saquipi & Vogrinc, 2016). The importance of equipping teachers with research competence has also been recognised by the OECD (2011), which has suggested that undergraduate research is a means of addressing the challenge of developing the necessary competences for a demanding profession. Undergraduate research within ITE programmes should thus enable (prospective) teachers to become innovators and researches. This requires teacher education that helps teachers to become innovators and researchers in education, laying a solid

foundation for continuous learning and professional development (Darling-Hammond & Bransford, 2005).

Winch, Oancea and Orchard (2015) argue that teacher education must enable a positive relationship between educational research, on the one hand, and teaching knowledge and practice, on the other. In contrast to understanding the teaching profession as a craft, understanding teaching as a research-based profession emphasises the fact that professional knowledge and practice are complementary elements of the profession and professional development. Teaching requires practical knowledge and skills, a knowledge and understanding of concepts and conceptual frameworks in education, and an ability to critically analyse and interpret existing knowledge based on reflection on one's own practice within the framework of broader research findings (Krokfors et al., 2011). Winch, Oancea and Orchard (2015) emphasise that in principle, research can be enriched and can enrich teacher professional knowledge, but that the question of how to build this relationship into teacher education programmes remains a considerable practical challenge. As Smith (2015) argues, policymakers and teacher educators often use the term *research-based,* which is defined on the following basis (Krokfors et al., 2011): (i) the structure of ITE programmes is based on a detailed analysis of education, (ii) all teaching is research-based, (iii) student teachers engage in activities in which they practise reasoning, decision making and explanation with regard to various pedagogical issues, and (iv) the acquisition of research competence is one of the goals of ITE programmes. However, student teachers are often consumers of research and are seldom expected to be producers of research (Smith, 2015).

Gomez (2013), Munthe and Rogne (2014) argue that the role of research in initial teacher education is still unclear. The understanding of what initial teacher education research is and the methods for involving students in undergraduate research vary between disciplines, colleges and universities. Munthe and Rogne (2014) stress that undergraduate research is a means to qualify prospective teachers for professional learning and innovation; however, there is still little knowledge about how ITE programmes address research for students. ITE programmes are formed based on different organisational structures that are historically, culturally and socially produced, as well as dependent on political streams. Furthermore, the structure, conceptualisation and operationalisation of the programmes differ by country (Craig, 2016).

In the context of the role of research in ITE, Flores (2016) reported that analyses of ITE curriculum plans illustrate a diversity of ways of including research in teacher education programmes, as well as ways of integrating it into practice and coursework. Overall, in Europe and elsewhere, research

components vary: in some cases they are not present, while in others they are not explicit in the ITE curriculum, as the decision to develop student teachers' competence is made by higher education institutions; in yet other cases, an explicit curriculum unit on research methods is included.

Flores (2016) strongly suggests further developments in improving the research dimension within the ITE curriculum in a more explicit and articulated way, according to the following two main aims: (i) a concept of professional development that underpins student teachers' involvement in research projects, thus enabling them to gain experience in research, and (ii) the training of prospective teachers in research methods.

Models of Including Research in Initial Teacher Education

It is clear that the main objective of ITE programmes is not to educate researchers or teacher-researchers, but to impart an attitude towards teaching (Toom et al., 2010). The authors claim that research-based teacher education develops autonomous teachers who are able to make theory-based decisions and to use and produce research. The decision of (not) providing a research-based ITE programme depends on various historical, social, cultural, political and conceptual factors (Munthe & Rogne, 2015). One important factor is considered to be the degree to which higher education institutions (HEIs) delivering ITE are involved in research for which their faculty members possess genuine experience and training. This also affects accreditation standards. Healey and Jenkins (2009) presented a model of four key factors that need to be present in an ITE programme if the programme is to recognise the role of undergraduate research.

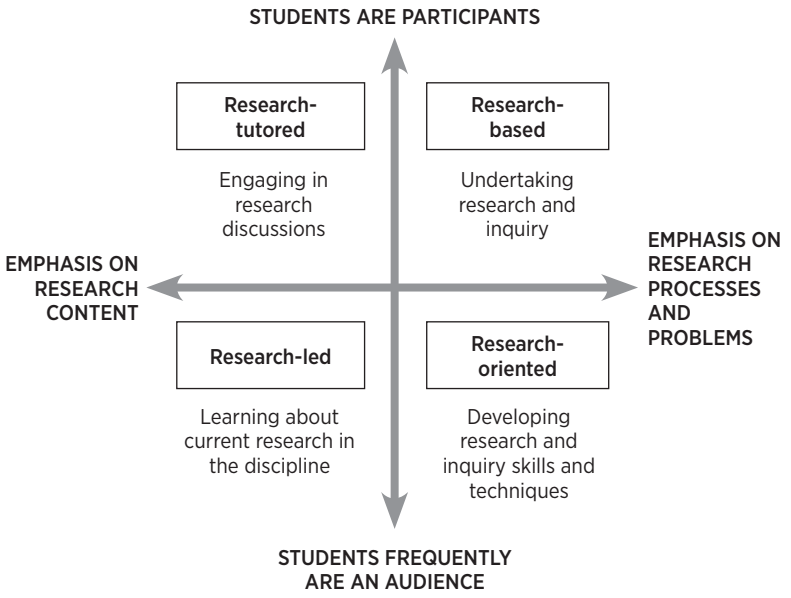

Figure 1. The nature of undergraduate research. Adapted from Healey & Jenkins, 2009, p. 7.

In the model above (Figure 1), four areas for research in education are presented: research-tutored, research-based, research-led and research-oriented. These areas are separated by two axes, indicating that ITE programmes can either be more focused on research content or on research processes and problems, and that student teachers can be seen either as the audience or as active participants in research. The research-tutored approach means that students are active agents of research and are usually engaged in activities such as writing and discussing research papers. Another area in which students are active in research is the research-based area, where students engage in research-based learning. On the other hand, there are two areas where students are often the audience. The research-led area means that student teachers learn about current research on the relevant issues within the discipline. Within the research-oriented area, student teachers develop research and inquiry competence.

The model provides four areas for research in education, all of which are considered to be part of research-based teacher education. All four areas are valid, and they should all be present in research-based teacher education. In general, research-based teacher education means that students carry out research in their courses independently and with an open outcome, thus enabling them to internalise and practise research approaches and methods, including

the skills of formulating precise questions and processing and monitoring the research process.

Saqipi & Vogrinc (2016, p. 111) outlined the following framework for developing research competence within ITE:

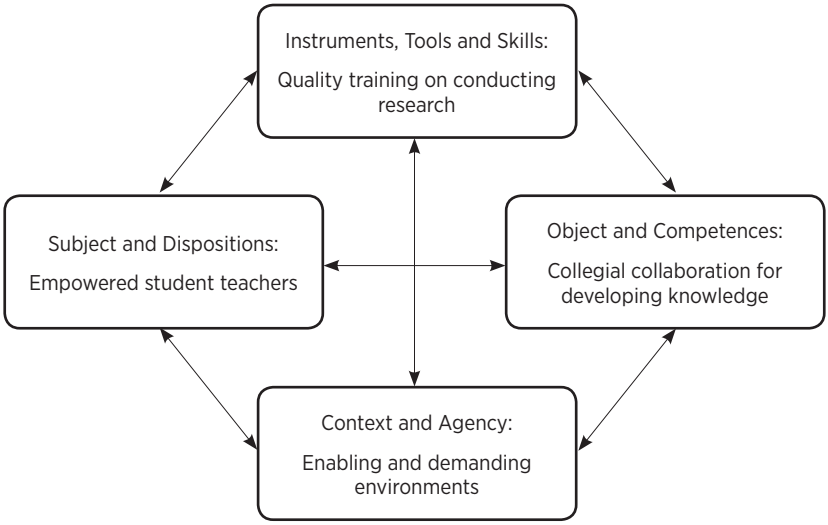

Figure 2. Framework for developing student teachers' research competence. Adapted from Saqipi & Vogrinc, 2016, p. 111.

The model encompasses the need to ensure competent student teachers who become both committed to and skilled in carrying out educational research through cooperating with other student teachers and by being confronted with a demanding work environment (Saquipi & Vogrinc, 2016). Both models (Healey & Jenkins, 2009; Saquipi & Vogrinc, 2016) highlight the importance of ITE programmes in developing student teachers' research competence, and they both point out the importance of empowering student teachers to perform their own research and/or develop their own knowledge together with other students.

Initial Teacher Education in Slovenia

According to the Rules on Training Teachers and Other Professionals in Primary Education (2015), the Rules on Training Teachers and Other Professionals in Comprehensive Education (2015) and the Rules on Training Teachers and Other Professionals in Vocational Education (2012), primary and

secondary school teachers in Slovenia must obtain a master's level of formal education, but they can choose different educational paths to acquire the appropriate qualification. Future teachers can engage in ITE programmes and concurrent programmes that are usually offered by faculties of education and certain other multidisciplinary faculties (e.g., the Faculty of Arts, the Faculty of Mathematics, etc.). Future generalist teachers (which refers to teachers qualified to teach grades 1–5 of primary school) study at faculties of education. These faculties also perform some programmes for subject specialist teachers, who are qualified to teach grades 6–9 of primary school. The majority of subject specialist teachers are trained at multidisciplinary faculties and qualified for teaching in secondary schools and grades 6–9 of primary school. By attending these concurrent programmes, teachers acquire specific subject knowledge, teaching-related skills and teaching experience (through a system of school placement). The other alternative is a consecutive programme in which teacher candidates can first acquire a non-pedagogical degree from one of a range of faculties and then attend a one-year programme designed to empower them with pedagogical competences. This programme, pedagogical-andragogic education (PAE), consists of 60 European Credit Transfer and Accumulation System (ECTS) credits and focuses on pedagogy, general didactics, subject-specific didactics, developmental and educational psychology, educational research, and practical work with students. Candidates can take the programme at faculties of education, the Faculty of Arts and the Faculty of Mathematics. This path is only an option for subject specialist teachers and is not intended for generalist teachers, who are only educated at faculties of education.

Until recently, ITE programmes in Slovenia were prepared based on the Standards for Accreditation of Initial Teacher Education Programmes (2011). These standards specified the scope of pedagogical training within the ITE study programme. ITE programmes had to include pedagogical-psychological knowledge, which encompassed psychology, pedagogics, didactics, andragogy, educational research, and humanities and social sciences knowledge, including philosophy, sociology and anthropology, as well as courses or special didactics related to the study of the primary discipline and at least 15 credits of school placement. However, the Standards were dropped in 2018 and there are currently no valid standards on which new ITE programmes must be based. In the process of accreditation, the programmes are evaluated by a group of at least three trained and licenced experts assigned by the Slovenian Quality Assurance Agency for Higher Education (SQAA). For the purposes of accreditation, the composition and content of the study programme and the concept of its delivery are examined (SQAA, 2018). Prior to final accreditation, the SQAA

acquires the opinion of the Ministry of Education, Science and Sport (Eurydice, 2019). Each study programme consists of various elements, including the aims of the programme, the proposed competences, and the courses that would be taught within the study programme. The courses are also weighed in terms of the ECTS, which represents learning based on defined outcomes and their associated workload. Typically, 60 ECTS credits are the equivalent of a full year of study, and the credits are broken down into several smaller units. The first cycle (undergraduate) degree usually consists of either 180 or 240 ECTS credits, and the second cycle (postgraduate) degree is equal to 90 or 120 ECTS credits (European Commission, n. d.). The curriculum of each study programme represents an important basis for delivering the programme, but it also reflects the conceptualisation of the programme and the importance given to the various fields within each study programme, as well as referring to the question of recognising educational research as an (important) element of ITE programmes.

Research Problem and Aims

Derived from (i) recognition of the importance of undergraduate research (OECD, 2011) as a means of addressing the challenge of developing the necessary competence, (ii) the fact that there is still little knowledge about how ITE programmes address research for students, and (iii) the question of how the conceptualisation and operationalisation of teacher research can be further advanced to better serve the current contexts and realities of national and transnational policy contexts (Saqipi & Vogrinc, 2019), the present study was undertaken with the aim of providing a systematic insight into the research components within ITE in Slovenia. According Flores (2016), insight into research components within ITE curriculum plans is the starting point for further developments in improving the research dimension in the training of future teachers.

Following this main aim, the following research questions were designed:

a) Is the research component reported in the proposed competences of the programme and how is articulated?
b) Is the course educational research included in the ITE programme and what content is proposed in the syllabi?
c) How is the educational research course (or courses) embedded in the ITE programme and evaluated by means of the ECTS?

Method

The aim of the study was addressed using mixed-methods research. A parallel mixed-methods design was used, which is a type of design in which "the researcher converges and merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem" (Creswell, 2014, p. 15). According to Mayring (2001), as cited in Mažgon (2008), a mixed-methods study can be conducted on five different levels,[2] and one of them, the data level, was used in the present study. The data level of integrating quantitative and qualitative research proposes qualitative analysis as a basis for the formation of categories. Once the categories are formulated, they are analysed statistically, mainly within the framework of descriptive statistics (e.g., frequencies and/or percentages).

The data collection was based on purposefully selected (Creswell, 2014, p. 189) documents, i.e., ITE programme curricula and syllabi of educational research courses, as it was determined that these data would correspond to the aims of the study. The documents were collected for all 13 faculties in Slovenia, which offer a total of 19 bachelor ITE programmes and 78 master's ITE programmes (Ministry of Education, Science and Sports of the Republic Slovenia, 2018). It is important to stress that only curricula and syllabi available on the official websites of all of the faculties delivering ITE programmes were taken into consideration.

Data analysis was carried out in accordance with the aims of the research. In order to determine whether the competence of educational research is included in each individual ITE programme, we first analysed the listed competences of each ITE programme, also with regard to whether the curriculum of a bachelor or master's ITE programme was being considered. The results of this part of the analysis are presented in Table 1, which contains the frequencies and percentages of ITE programmes according to two variables: (i) the reported research competence (or its absence), and (ii) the level of the ITE programme. We also tried to formulate some common elements of each research competence and present how the competence can be articulated in general for bachelor and master's programmes.

The curricula of ITE programmes were also reviewed and analysed with the aim of identifying whether an educational research course (or courses) is included in each individual ITE programme, taking into account the level of ITE programme. The results are presented in Table 2, in which frequencies and

2 Mayring (2001, as cited in Mažgon, 2008, p. 51–54) defined five different levels of integrating quantitative and qualitative research: the technical level, the data level, the level of individuals, the model level, and the level of common research logic.

percentages are included according to the inclusion (or exclusion) of an educational research course and the level of the ITE programme. Furthermore, we analysed the content of the syllabi of the educational research course(s). Since the syllabi differ substantially in articulating the relevant content – some contain very detailed descriptions, while others focus on certain main concepts (albeit encompassing many sub-concepts) – we were not able to conduct precise systematic analyses, so we aimed instead to detect the most common elements of the content.

With the aim of determining how educational research courses are embedded in the ITE programme (evaluated by means of the ECTS), we looked for information about the credit loadings of the educational research course(s) within each ITE programme. In cases where there were multiple courses, we summed the credits of two, or in some cases even more, courses within the programme. The results are presented in Table 3, which shows the different ECTS loadings according to the level of the ITE programme.

Results

We first present the results of the analysis aimed at identifying whether research competence is proposed as one of the competences student teachers should acquire during ITE. We then focus on the results showing the presence of courses related to educational research. Finally, we present how educational research is embedded in ITE programmes in the sense of ECTS credits.

Research competences as reported in the proposed ITE competences

Table 1
Research components within the proposed ITE competences

	Research competences reported		Research competences not reported		Total	
	f	f %	f	f %	f	f %
Bachelor	13	13.4	6	6.2	19	19.6
Master's	32	32.9	46	47.4	78	80.4
Total	**45**	**46.6**	**52**	**53.6**	**97**	**100**

Overall, the results in Table 1 show that students are expected to acquire research competence in less than half (46.6%) of all bachelor and master's ITE programmes. Closer analysis shows that the acquisition of research competence

is one of the aims in about two thirds (13 out of 19) of bachelor ITE programmes and in less than half of master's ITE programmes. Based on these results, we can conclude that in more than half of ITE programmes, student teachers are not expected to gain research competence, a result that is even more evident in master's ITE programmes.

As well as aiming to identify whether the programme envisages research competence, the research competence analysis also sought to determine how this competence is articulated. According to the proposed competences, it was determined that in bachelor programmes, students are mainly expected to develop the ability to carry out educational research based on the ability to use research methodology, methods, data gathering and processes, along with the ability to present and interpret results. In master's programmes, students are expected to develop the ability to use research in support of professional development by researching one's personal practices, performing self-evaluation studies, thinking critically about one's work, and developing one's own practice.

The analysis indicates that there are still many student teachers who are not provided with either the opportunity or the obligation to acquire research competence. This is one of the most important competences, as it enables future teachers to develop critical thinking, leading to the critical scrutiny of their own practice and to professional development.

Educational research as a compulsory course within ITE

With the aim of identifying whether a course (or courses) related to educational research is part of each of the ITE programmes taught in Slovenia, we analysed all of the available curricula descriptions. The analysis showed that there are various names for the courses aimed at empowering future teachers with research competence, e.g., Educational Research, Educational Methodology, Scientific Research Methodology, Research of the Educational Process, Research of Educational Practice, and An Introduction to Educational Research. In general, the results show that more than half of ITE programmes include educational research as a compulsory course. Specifically, Educational Research, as a compulsory course, is an element of the majority of bachelor ITE programmes, whereas only half of all master's ITE programmes (remembering that a master's level degree is required) include this course.

Table 2
Educational research as a compulsory course within ITE

	Educational Research Course		No Educational Research Course		Total	
	f	f %	f	f %	f	f %
Bachelor	18	18.6	1	1.4	19	19.6
Master's	39	40.2	39	40.2	78	80.4
Total	**57**	**58.8**	**40**	**41.2**	**97**	**100**

The analysis also showed that courses related to educational research are included in all bachelor and master's ITE programmes delivered at all three faculties of education in Slovenia, but in less than half of ITE programmes at all three faculties of arts (which also deliver some ITE programmes). The percentage of ITE programmes containing a course (or courses) related to educational research is even smaller at other faculties, and at some faculties there is no research-related course within the ITE programme.

The analysis of the syllabi of the courses related to research shows that these courses in bachelor ITE programmes mainly propose the following content: research ethics, quantitative research, qualitative research, different research designs (e.g., action research, case study, life history), the research process, defining aims, designing hypotheses, data collection techniques, data processing with SPSS, presenting and interpreting results, conducting research on a basic level, writing a research report, statistics (basic statistical concepts: population, sample and sampling, variables), descriptive statistics (mean, standard deviation, distribution), inferential statistics (correlation, null hypothesis), and self-evaluation.

The results of the analysis of master's ITE programmes indicate that master's courses related to research can be divided in two groups according to content. The first group comprises courses that are delivered at the faculties of education (as part of master's programmes) and pedagogy and andragogy programmes delivered at faculties of arts. The content of these programmes proposes that students shall upgrade and deepen the knowledge acquired within bachelor programmes. The following content is proposed: planning and implementing more complex research procedures, conducting research independently and preparing professional and scientific articles, using more complex statistical procedures (e.g., non-parametric tests, regression, etc.), criteria for quality of research, critical use of results, research as a means of innovating one's own practice, and preparing the master's thesis.

The second group includes courses related to research that are delivered within ITE programmes at other faculties and whose proposed content is largely similar to the content of courses within the bachelor programmes analysed earlier. These results indicate that students enrolled in these programmes are not expected to acquire the competence to become researchers of their own practice, but only to have some basic knowledge of educational research.

It must be stressed that it would be incorrect to claim that the programmes that do not include any courses related to educational research do not develop the research competence of their students. Research competence can also be developed within another course (or courses) that is, for instance, oriented towards student teachers studying various topics within which they are expected to perform some small-scale research related to the field of the course. It should be emphasised that although this kind of approach equips student teachers with some knowledge of carrying out research, a systematic approach based on courses related explicitly to carrying out the process of educational research should be an important element of every ITE programme.

Based on the results of course presence (Table 2), further analysis determined the ITE programmes in which a course (or courses) aimed at empowering future teachers with research competence was clearly identified.

Table 3
Credit loadings of educational research within ITE programmes

Number of ECTS credits per course related to educational research	Bachelor	Master's	Total
3	3	1	**4**
4	3	10	**13**
5	2	4	**6**
6	4	21	**25**
7	1	2	**3**
9	2	2	**4**
10	3	1	**4**

As is evident from Table 3, the number of ECTS credits for educational research varies considerably: the minimum number of ECTS credits is 3, and the highest number is 10. The most common ECTS credit weighting, for both bachelor and master's programmes, is 6 ECTS credits. There is also a large proportion of postgraduate programmes that require 4 ECTS credits. The ECTS weighting of the course is an important indicator not only for determining the

quantity of time student teachers have for developing their research competence, but also in the context of how different content within the course can be delivered, elaborated and acquired, as well as the extent to which research competence can be developed within a certain ITE programme.

Discussion

The main aim of the present paper was to identify the role of research in ITE programmes in Slovenia and to establish a basis for further research that would establish a conceptual overview. By analysing ITE curricula, we discovered that in more than half of ITE programmes, students' attainment of research competence is not a goal. However, a breakdown of the results shows that two thirds of bachelor ITE programmes and less than half of master's ITE programmes include the aim of students acquiring research competence. The aim of bachelor programmes is for students to acquire the competence to perform basic educational research, whereas master's programmes focus more on utilising educational research as a means of professional development. The analyses of curricula show that with the exception of one programme, all bachelor ITE programmes include an obligatory course concerning educational research. In the case of master's programmes, however, it was established that only half of them include a course (or courses) related to educational research. Furthermore, the analysis of syllabi content shows that both bachelor and master's programmes delivered at other faculties aim for the students to acquire basic research knowledge, whereas master's programmes delivered at faculties of education, as well as pedagogy and andragogy programmes delivered at faculties of arts, seek to empower their students to conduct more complex research, often with the aim of improving their own practice.

The fact that research competence can also be developed within other courses certainly cannot be overlooked. However, if research is only a (minor) part of a course focused predominantly on developing other competences, students' research competence will not be assessed, whereas it is subject to formal assessment when research is the course topic. Furthermore, educational research courses need to be linked to other courses to enable students to apply various research methodologies to different content and content aims.

The analysis of the ECTS credits attributed to educational research courses suggests a variety of solutions, which also indicates a very different role or appreciation of educational research in different ITE programmes and by the educators who have designed them.

In general, the results indicate that bachelor ITE programmes, in

comparison to master's ITE programmes, place more emphasis on equipping prospective teachers with research competence. Bearing in mind that student teachers have to obtain a master's degree, it would be expected that master's study programmes would focus on educational research to a larger extent. Another issue that needs to be considered in this context is the entry conditions for master's programmes. In some master's ITE programmes, completion of a previous course in educational research is a requirement for admission, but not in all programmes. Thus, many different options are possible: some student teachers go through the process of gaining research competence in both bachelor and master's ITE programmes, some only in bachelor programmes, some only in master's programmes, and some not at all. As argued by Saquipi and Vogrinc (2016), teacher education in research should be seen as a continuum that starts at the bachelor level of studies and continues at the master's level. Later, those student teachers who do have the opportunity to gain research competence within courses related to educational research will not all have the same opportunities, as the load of ECTS credits varies greatly across ITE programmes in Slovenia. Some student teachers will only be able to acquire the basics, while others will be able to become highly competent researchers of their own practice. The results of the present study thus confirm findings (Flores, 2016) that suggest there are diverse ways of including research competence in ITE programmes. It could therefore be suggested that ITE programmes in Slovenia are not consistent in following and supporting this already recognised idea (OECD, 2011; Saquipi & Vogrinc, 2016).

Conclusion, Limitations and Further Research

The results of this study indicate a strong need for universities and educators, as well as policymakers in the field, to reconsider the role of educational research in teachers' everyday practice. They should also recognise and realise the importance of equipping prospective teachers with research competence, which is considered to be an important element of changing teachers' practice, of linking theory and practice, and of supporting teachers' professional development. Inevitably, research competence should be included in the proposed competences of every ITE programme and realised through courses dedicated directly to the subject of educational research.

Regarding the models proposed by Healey and Jenkins (2009) and Saqipi and Vogrinc (2016) discussed earlier and the findings of the present study, the main efforts in initial teacher education in Slovenia should be directed towards the following issues.

- Insisting on including educational research courses in all initial teacher programmes at all faculties delivering these programmes, thus providing student teachers with quality training on conducting research.
- Building and following the concept of the two-step model of developing research competence in teacher education: the basic level (bachelor ITE programmes) and the advanced level (master's ITE programmes). This model would also assume an obligatory differential exam for master's programmes for students who have not acquired basic educational research knowledge within their previous studies.
- It is also necessary to make a shift from the prevailing concept of student teachers as an audience of teacher research to the concept of student teachers as participants. Students should have more opportunities to gain experience in undertaking research individually or with their peers, which would also lead to more critical use of research results and would enable future teachers to internalise the research approach. This shift could be realised by including student teachers in research projects to a larger extent.

It should be emphasised that the present study was intended to represent a starting point for researching the conceptual structure of ITE programmes in Slovenia and further research on the topic needs to be conducted. Furthermore, the study is based on an analysis of the teacher education curricula and syllabi that were available on the official websites of faculties delivering ITE programmes. Considering the main aim of the study, i.e., to provide a systematic insight into the research components within ITE in Slovenia, the design is fairly strong, although the results are based on declared descriptions. The issue of the role of research elements in ITE can nonetheless be studied in several ways, and a follow-up using another methodology (e.g., focus groups with teacher educators, student teachers, teachers, policymakers, developers of ITE programmes, or using questionnaires with different stakeholders) would be advisable.

Future research issues could include the operationalisation of educational research within ITE, the analysis of syllabi realisation, the question of including student teachers in research projects, and research on teachers' research competence and their attitude towards the concept of the teacher as a researcher.

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Biographical note

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doi: 10.26529/cepsj.865

Teacher-Researcher Development? Unpacking the Understandings and Approaches in Initial Teacher Education in Kosovo

Fjolla Kaçaniku[1]

The teacher-researcher is a prevailing concept in the post-professionalism age of teacher education. The development of teacher-researchers is discussed alongside reforming initial teacher education programmes as research-based. At this time, there is no consensus regarding the understanding and methodologies of teacher-researcher development. The purpose of this study is to examine student teachers' and teacher educators' understandings of and approaches to teacher-researcher development in initial teacher education in Kosovo within the research-based teacher education movement. The study used a qualitative research design. The data were collected through open questionnaires (n = 270 student teachers), interviews (n = 15 teacher educators), and programme content (n = 5) at two initial teacher education institutions in Kosovo. Using Healey and Jenkins's research curriculum categories as a guiding framework, the study identified four clusters of contradictory understandings and approaches relating to teacher educator practice and programme values and goals, fragmenting the context of teacher-researcher development in Kosovo. In order to build consensus in teacher-researcher development, coordinated efforts are recommended to address the current isolated and differing understandings and practices within the broader context of initial teacher education.

Keywords: initial teacher education, programme goals and values, student teacher, teacher educator practice, teacher-researcher development

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Razvoj učitelja raziskovalca? Pojasnitev razumevanj in pristopov v začetnem izobraževanju učiteljev na Kosovu

Fjolla Kaçaniku

Učitelj raziskovalec je prevladujoč koncept v dobi postprofesionalizma izobraževanja učiteljev. Razvoj učiteljev raziskovalcev je obravnavan skupaj z reformiranjem programov začetnega izobraževanja učiteljev v smeri oprtosti na raziskovanju. Trenutno ni soglasja glede razumevanja in metodologije razvoja učiteljev raziskovalcev. Namen te raziskave je preučiti razumevanja in pristope študentov pedagoških smeri ter izobraževalcev prihodnjih učiteljev glede razvoja učiteljev raziskovalcev med začetnim izobraževanjem učiteljev na Kosovu skladno z gibanjem po izobraževanju učiteljev, ki temelji na raziskavah. Raziskava sledi kvalitativnemu raziskovalnemu načrtu. Podatki so bili zbrani prek odprtih vprašalnikov (n = 270 študentov pedagoških smeri), intervjujev (n = 15 izobraževalcev prihodnjih učiteljev) in pregledov programov (n = 5) dveh kosovskih institucij začetnega izobraževanja učiteljev. Uporabljajoč kategorije raziskovalnega predmetnika Healeyja in Jenkinsa kot vodilni okvir, je raziskava odkrila štiri skupke nasprotujočih si razumevanj in pristopov, povezanih s prakso izobraževalcev prihodnjih učiteljev ter programskimi vrednotami in cilji, kar lomi kontekst razvoja učitelja raziskovalca na Kosovu. Da bi dosegli soglasje glede razvoja učitelja raziskovalca, so potrebna usklajena prizadevanja, ki bi v širšem okviru naslovila trenutno izolirana in različna razumevanja ter prakse začetnega izobraževanja učiteljev.

Ključne besede: začetno izobraževanje učiteljev, programske vrednote in cilji, študent pedagoških smeri, praksa izobraževalca prihodnjih učiteljev, razvoj učitelja raziskovalca

Introduction

Reforming initial teacher education has been actively debated for many years (Darling-Hammond & Bransford, 2005; Darling-Hammond, 2016, 2017; Hargreaves, 2003). The teaching profession is becoming increasingly complex due to the expansion of its scope of work in the age of the knowledge society (Darling-Hammond, 2017). Hargreaves describes teachers as catalysts of the knowledge society and emphasises the fact that teachers must establish a culture of professionalism comprising creativity, problem-solving, research-orientation, flexibility in coping with change, and continuous professional development (Hargreaves, 2003). Initial teacher education institutions therefore play a decisive role in reforming programmes to prepare future teachers for this wider range of tasks and expectations (Darling-Hammond, 2016, 2017).

According to Niemi (2008), European policy initiatives in teacher education aim to improve the competencies of future teachers by promoting a research orientation. In this context, Niemi (2008) refers to the European Commission's assertion, "teacher education should be based on research and teachers' work requires abilities to reflect the evidence on which they base their practice" (p. 203). Moreover, current high-quality initial teacher education programmes prioritise research and development, reflective practice and the development of teacher-researchers (Buchberger, Campos, Kallos, & Stephenson, 2000).

In the growing literature on research-based initial teacher education, Finland is considered a pioneer (Afdal & Spernes, 2018; Alvunger & Wahlström, 2018; Krokfors et al., 2011; Munthe, & Rogne, 2015; Niemi, 2008; Puustinen, Säntti, Koski, & Tammi, 2018). However, (1) there is still no common understanding of what constitutes preservice teacher-researcher development. In addition, (2) studies show that a context-based approach is important to understanding the design and delivery of research-based activities in developing teacher-researchers (Afdal & Spernes, 2018). Furthermore, (3) the discussion of research-based teacher education focuses on Western European countries, while research-based initial teacher education in Eastern Europe and the Western Balkans remains under-researched.

The present study focuses on a small and "peripheral" European context. Initial teacher education in Kosovo transferred to universities in 2002. Previously, teacher education had been organised in higher pedagogical schools (HPS – teacher training institutions) located in major cities throughout Kosovo. When the transfer took place, these training institutions initially operated as branches of the University of Prishtina (beginning in 2002), and the Faculty of Education

in Prishtina was thus the largest teacher education institution in the country. By 2010, however, the branches had evolved into independent initial teacher education institutions. Today, Kosovo's five initial teacher education institutions are Faculties of Education operating under the banners of five public universities in Kosovo (Saqipi, 2019).

Since Kosovo is aiming to join European structures, discussions about teacher quality and raising teacher professionalism have become more relevant, triggering major reforms within teacher education (Kaçaniku, Gjelaj, & Saqipi, 2019; Saqipi, 2019, 2020). Programme reforms have followed Bologna Process objectives in order to ensure compatibility and comparability of degree structures by introducing ECTS and the three-cycle system as well as undergoing programme accreditation as a quality assurance mechanism (Kaçaniku, 2017, 2020). Specific initiatives have aimed to improve the quality of teacher education programmes. In 2010, the Faculty of Education of the University of Prishtina developed the first two master-level programmes, which promoted the use of research to improve practice in developing education practitioners. In 2014, supported by an EU-funded project, the Faculty of Education established 12 new master-level programmes to develop the professionalism of subject teachers. In the same year, the EU granted the institution a capacity-building project award to modernise teacher education (Saqipi, 2019).

The aim of these projects was to advance student teachers' reflection and research skills (Kaçaniku et al., 2019; Saqipi & Vogrinc, 2016). All of the programmes integrated at least one research methods course (Saqipi, 2020). In addition, both BA and MA programmes require student thesis work (Saqipi & Vogrinc, 2016).

The present study examines student teachers' and teacher educators' understandings of and approaches to teacher-researcher development in initial teacher education (ITE) within the research-based teacher education movement. Employing qualitative methods research design, ITE in Kosovo was examined using programme documents, teacher educators' perceptions and student teachers' perceptions. The study addressed the following research questions:

(1) How is the meaning and purpose of the teacher-researcher concept understood within initial teacher education?
(2) How does initial teacher education approach the development of teacher-researchers?
(3) What kinds of factors can explain conflicting understandings and approaches in teacher-researcher development?

Theoretical framework

The context of developing teacher-researchers is best achieved by implementing research-based teacher education. In research-based ITE, programmes are designed such that all modules integrate research (Jyrhämä et al., 2008) and teacher-researchers are educated in research concepts from the first day of the programme (Toom et al., 2010). Scholars contend that research-based programmes have two important features: 1) they include modules with integrated research, and 2) teacher educators constantly conduct research and engage their students in the processes of research (Afdal & Spernes, 2018; Alvunger & Wahlström, 2018; Jyrhämä et al., 2008; Krokfors et al., 2011; Munthe & Rogne, 2015; Niemi, 2008).

In research-based programmes, the development of teacher-research competences is a complex process (Krokfors et al., 2011). According to Niemi and Nevgi (2014), future teachers need: 1) *critical research literacy* and 2) *research for profession*. *Critical research literacy* demands that future teachers develop a readiness for inquiry, analyse research literature, question foundational education knowledge, become critical thinkers, develop methods for knowledge creation, and apply this knowledge to their practice. *Research for profession* refers to future teachers' understanding of the importance of the teaching profession in society, their understanding of teaching as a continuous professional development process, their internalisation of the importance of research for improving practice, and their understanding of the expanded roles and responsibilities of teachers, as well as the research-based development of the school and the development of educational responsibility (Niemi & Nevgi, 2014, p. 137). Thus, research-based ITE should go beyond developing technical research skills and focus on developing positive attitudes towards becoming teacher-researchers (Afdal & Spernes, 2018; Alvunger & Wahlström, 2018; Krokfors et al., 2011; Niemi & Nevgi, 2014).

Research-based programmes provide future teachers with opportunities to engage in research activities. These activities provide them with a platform to both study and analyse the thinking of their students (Afdal & Spernes, 2018). Future teachers can develop self-evaluation skills allowing them to examine and engage in decision-making and problem-solving around their practice (Niemi & Nevgi, 2014; Puustinen et al., 2018). Moreover, prospective teachers grow to understand the importance of evidence-informed practice and the establishment of collegiality platforms, as well as the necessity of advancing a culture of assessment that fosters context-driven improvements (Niemi, 2008). Finally, they develop positive attitudes towards studying and conducting research in their future work (Munthe & Rogne, 2015).

ITE research exercises and activities prepare future teachers to teach based on evidence and reflection (Alvunger & Wahlström, 2018; Jyrhämä et al., 2008). They do not require student teachers to become scientific researchers who design novel studies that generate scientific results. Instead, the intention of research-based study programmes is to develop a "practitioner-researcher orientation" in future teachers, providing them with a lifelong framework for improving their practice. Ultimately, the goal of a research-based orientation is to prepare teacher-researchers for a wide range of scenarios and stakeholders in their future work by ensuring they possess a variety of competencies and a range of knowledge (Alvunger & Wahlström, 2018; Puustinen et al., 2018).

In order to build a conception of what a developing teacher-researcher actually is within an ITE programme, Stenhouse (1981) posed the question: What counts as research? He argued that research is a "systematic process" and "conscientiously self-critical inquiry" (p. 109), and he placed great emphasis on research *interest*, relating it to research *curiosity* and arguing that "inquiry is founded in curiosity and a desire to understand; but it is a stable, not a fleeting, curiosity, systematic in the sense of being sustained by a strategy" (p. 103).

A great deal of evidence shows that research-based ITE can have different meanings and approaches in different contexts. Studies show that academic staff of different disciplines reflect diverse perspectives on how to approach research work (Griffiths, 2004; Healey, 2005; Krokfors et al., 2011). The present study employs a framework devised by Healy and Jenkins (2009) in order to capture different perceptions of research-based ITE and teacher-researcher development. This framework presents different conceptualisations of research-driven curriculum design (see Figure 1).

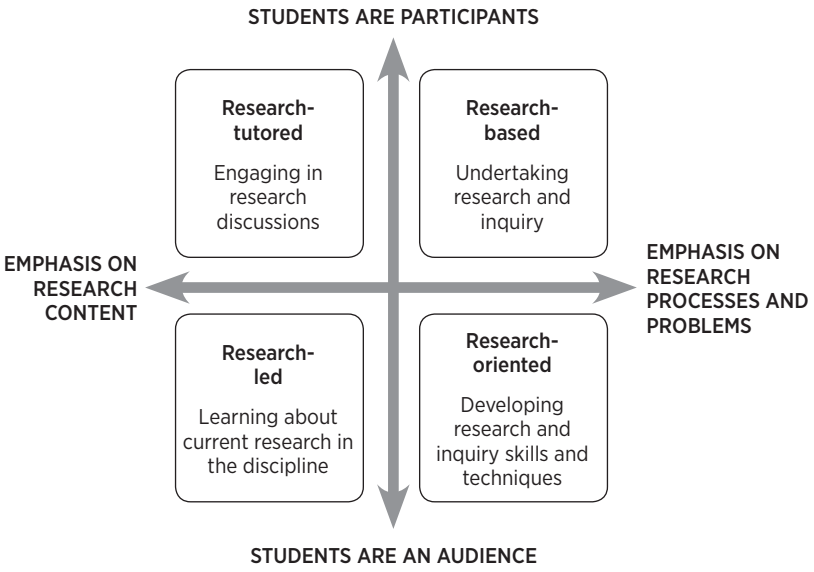

Figure 1. The nature of research-oriented programmes. Adapted from Healey & Jenkins, 2009, p. 7.

In this framework, the design and delivery of a research-driven programme follow four different approaches: (1) the *research-led* approach exposes students to existing education research, (2) the *research-oriented* approach develops students' research methods and techniques, (3) the *research-tutored* approach engages students in reflections and research discussions, and (4) the *research-based* approach encourages students to undertake research (Healey & Jenkins, 2009). In the present study, this framework provides a valuable basis for examining the different groups' perceptions of their understanding of and approaches to teacher-researcher development in ITE in Kosovo.

Method

Sampling, instruments and procedure

The study used a qualitative method approach (Creswell, 2014) and was conducted in two public initial teacher education institutions in Kosovo during the 2017/2018 and 2018/2019 academic years. The selected institutions represent one larger and one smaller institution (see Table 1 for more information).

Table 1
Sample characteristics of study subjects

Programmes (*n* = 5)	Student teachers (*n* = 270)	Teacher educators (*n* = 15)
Institution A		
Elementary Teacher Education (BA)	126	9a
Pedagogy for Vocational Education (MA)	12	4
Teaching and Curriculum (MA)	10	4
Subject Teacher Education (MA)	32	9
Institution B		
Elementary Teacher Education (BA)	90	3

Note. a = This column shows the distribution of sampled teacher educators in all of the selected programmes out of the total number of sampled teacher educators.

Programme documents

The study programmes (n = 5) were chosen with a purposive sampling strategy (Creswell, 2014). Maximum variation sampling was used to identify programmes that represent different levels (BA and MA) and focuses (pedagogy-oriented and subject didactics-oriented) of teacher education. Programme documents were selected a) to identify the number of courses related to research, b) to explore how research is integrated into different courses and programmes, and c) to investigate course descriptions/requirements of students' learning outcomes that included a research element or explicitly planned teacher-researcher development.

Open questionnaire

The student teachers (n = 270) voluntarily responded to an open questionnaire (Creswell, 2014). The questionnaire was shared with all of the student teachers (n = 410) in the selected programmes, and 65.85% (n = 270) of them participated. Questionnaires with open-ended questions are more in-depth and reveal the unique perspectives of respondents (Creswell, 2014). The questionnaire consisted of five background questions and six open-ended questions covering the following themes: (i) education research, (ii) the notion of teacher-researchers and its relevance to the teaching profession, (iii) research-based teacher education and research integration within programmes, (iv) appreciation of research activities and practical research engagement, (v) development as

teacher-researchers, and (vi) future research engagement prospects and benefits to the teaching practice. All of the students were instructed to respond in depth to each question, i.e., with at least 150 words per question.

Semi-structured interviews

The teacher educators (N = 15) were selected with a purposive sampling strategy (Creswell, 2014). Maximum variation sampling was used to identify a variety of teacher educators based on the criteria of selected programmes, gender, disciplines, research and lecturing experience and academic rank, thus covering the entire spectrum of perceptions. The total number of teacher educators matching each criteria was very low (1–2), and the small number of teacher educators in ITE made the selection process straightforward. The interview protocol included seven background questions and ten open-ended questions with the same themes as the student teacher open questionnaire (with additional prompts and sub-questions). The responses were used to examine the perspectives of teacher educator understandings and approaches regarding teacher-researcher development.

Data analysis

The study used thematic analysis to analyse the different understandings of and approaches to teacher-researcher development in ITE in Kosovo, underlining similarities and differences, and generating unanticipated understandings (Braun & Clarke, 2006). According to Creswell (2014), using thematic analysis powers researchers to generate important study characteristics. In this case, it covered heterogeneous data: i) programme documents, ii) an open student teacher questionnaire, and iii) teacher educator interviews. As Nowell et al. (2017) recommend, research questions guide the thematic analysis. Braun and Clarke's (2006) six-phased method was selected for thematic analysis:

(1) *Familiarisation with data*: The interview data were transcribed verbatim in the Albanian language (approximately 7 pages per interviewee, totalling 105 pages of transcribed text). Some selected interview excerpts were translated into English. The open questionnaires totalled 1,350 pages (approximately 5 pages per student teacher) and the programme documents totalled 97 pages (ranging from 18 to 25 pages per programme). Data triangulation ensured credibility of analysis (Lincoln & Guba, 1985). All of the text data were arranged and converted into raw data for smooth transfer to ATLAS.ti qualitative software for data sorting and

organising. All of the text data was read and re-read for initial insights and familiarisation with the text.

(2) *Generating initial codes*: Healey and Jenkins's (2009) framework was used to analyse all of the text data. Supported by this framework, a code manual was developed to provide comprehensive definitions and example texts for each curriculum category. This coding framework ensured an organised approach to combining three sets of data into a common analysis identifying and examining different teacher-research understandings and approaches from data text. According to Nowell et al. (2017), a coding framework is useful for novice researchers because it ensures transparent and credible analysis. ATLAS.ti qualitative software ensured an organisation of coding consistent with the interesting features throughout the text, thus enabling depth and sophistication of thematic analysis.

(3) *Searching for themes*: The identified codes from the previous stage were organised into possible themes, corresponding to the curriculum categories in the Healey and Jenkins (2009) framework.

(4) *Reviewing themes*: In this stage, all of the themes and codes were reviewed to develop an analysis map and ensure that all of the generated analysis was logically connected. Although personal reflection was present in all stages of data analysis, captured as reflective journal entries, this stage also involved debriefing with the research mentor in order to vet the emerging themes. This type of external consultation ensured credibility and valid interpretation of the analysed text (Lincoln & Guba, 1985).

(5) *Defining and naming themes*: The previously generated themes were refined. A detailed analysis for each theme ensured that the individual themes convey a transparent and complete picture in relation to the research questions and guaranteed transferability of the findings (Lincoln & Guba, 1985).

(6) *Producing the report*: The final themes were verified at this stage. The findings were organised according to research questions and Healey and Jenkins's (2009) framework. Block and shorter quotations delineate the respondents' perceptions and direct text from the programme analysis. Each sub-section of the findings is intended to synthesise outcomes from all of the data sources. The themes and detailed descriptions are presented in Table 2.

Results

The data were analysed in relation to the research questions. The *first* section of the results responds to the first and the second research questions, which involve the understanding of and approaches to teacher-researcher development within initial teacher education. The findings in this section are synthesised based on Healey and Jenkins's (2009) curriculum categories. The *second* section answers the third research question, showing factors explaining conflicting understandings and approaches in teacher-researcher development emerging from the context of ITE. Both results sections show the reality of teacher-researcher development within ITE in Kosovo.

Understandings of and approaches to teacher-researcher development within initial teacher education

Based on the four curriculum categories of Healey and Jenkins (2009), the thematic analysis shows several themes emerging as four ways in which teacher-research development is understood and approached within ITE. Themes and detailed findings are organised in Table 2 and represent the perceptions of teacher educators and students teachers, as well as programme content analysis.

Table 2
Understanding and approaching teacher-researcher development in ITE in Kosovo

Curriculum categories	Themes	Detailed findings
Research-led *Knowledge of education research*	***Formal learning about education research***	- Focus devoted to subject and pedagogical content knowledge - Theoretical knowledge for teaching - Memorise the main notions and concepts - Teacher-centred frontal lecturing style - Transmission of knowledge is the main teaching approach - Lack of student engagement - Summative assessment approach - Exams assess content knowledge
	Research and teaching as two separate teacher activities	- Teaching relevant knowledge - Teaching is not research - Research as a complex task that is not dedicated to teachers - Research is only seen in terms of new knowledge production
	Limited research infrastructure	- Limited access to online databases - Physical library and lecture notes - Promote the use of outdated native literature - English language as a barrier

Curriculum categories	Themes	Detailed findings
Research-oriented *Research Skills*	***A narrow view of research skills development***	- Only one research methods course per programme - Isolated view of developing research skills - Emphasises research methods knowledge - Transmission of knowledge of research techniques is abstract - Students are full-time receivers - Limited research-oriented activities and assignments - No practical research engagement - Research knowledge assessed through exams
	Thesis work as the only research engagement	- Student teacher thesis work required - Thesis work starts at the end of the programme - Student teachers submit project proposal at the department level - Reviewing thesis proposals and thesis mentoring poorly managed - Students have limited skills to properly complete thesis work - Thesis work perceived as a formality
Research-tutored *Reflection on education research*	***Analytical and reflective skills and attitudes to education problems***	- Develop skills to access new knowledge of education problems - Critical and analytical skills by reviewing the literature - Guided discussion using probing - Student teachers receive feedback from teacher educators and peers - Student-centred discussions to bridge theory and practice - Encourage group work and collegiality - Critical conversations in rebuttals between two or more groups - Students are contributors to course development - Mixed assessment strategies focusing on formative assessment
Research-based *Research action*	***Missing research-based teacher education***	- Research is not limited to research methods courses - All courses can develop research skills - Research skills are not limited to technical research skills - There are many ways of exposing student teachers to research - Student-centred teaching and learning - Reading and analysing education research - Practical research activities - Group research projects in schools - Discussion and presentation of findings - Research as reflection - Guidance and feedback - Students are contributors to course development - Mixed assessment strategies

Research-led understandings and approaches

The results demonstrate that in Kosovo ITE, the following themes describe research-led TE: *formal learning about education research*, *research and teaching as two separate activities* and *limited research infrastructure*.

Formal learning about education research

Findings show that teacher educators view and approach teacher-researcher development using a knowledge-based strategy. The data clearly shows that teacher educators primarily use a teacher-centred lecturing style that lacks student engagement to convey and discuss the knowledge of research in the teaching profession. Consequently, the approach to developing

teacher-researchers, as reported by many teacher educators, is restricted to formal learning about education research.

> Professors have an academic background that shifts the focus of programmes to academic [theoretical] oriented teaching and learning. […] The typical teacher educator approach is frontal lecturing and a knowledge-based orientation. (Teacher Educator 2)

The courses teacher educators teach focus on student teachers' strong knowledge of teaching and learning and subject matter. The following quotes from the programme analysis show that learning about the teaching profession has a knowledge focus.

> Gaining knowledge and learning the rules of the teaching and learning of different learning areas, as well as becoming acquainted with the relationships between learning processes, on the one hand, and the individual and society, on the other. (Programme 1, p. 90)

> Deepening and expanding knowledge in the field of linguistics in general and the organisation of the text (syntax) in particular. (Programme 4, p. 114)

Moreover, the results infer that the teacher educators' formal approach to education research has led to mechanical learning among student teachers.

> Students are pushed to learn through memorising and mastering content knowledge. (Teacher Educator 3)

The teacher educators' assessment of the students' knowledge of education research is limited to exams, while group work and practical engagement strategies are ignored.

> Most courses in our programme use theoretical lecturing that lacks practical engagement. (Student Teacher 27)

This means that students' exposure to teaching profession research is approached in isolated knowledge-based learning. This cluster was mostly comprised of subject discipline teacher educators.

Research and teaching as two separate teacher activities

The findings show that some teacher educators and courses approach research and teaching as two separate teacher activities within the teaching profession. When discussing teacher-researcher development, teacher educators questioned the importance of teachers engaging in research.

> I do not see how future teachers will use research in their work. They are teachers responsible for teaching, not researchers. (Teacher Educator 8)

> Research is a complex task and teachers need extensive scientific research skills to be able to conduct research and produce new knowledge. I simply do not see how teachers can be researchers, nor do I see the purpose of them becoming researchers. (Teacher Educator 14)

The teacher educators and student teachers discussed how developing the teacher-researcher has not been a priority in study programmes.

> Research integration is at a minimal level and can be considered the least prioritised aspect of our programmes. Teaching and knowledge transmission remain the main activities in teacher educator practice. (Teacher Educator 7)

The study respondents established knowledge of the teaching profession as the guiding theme in ITE. The respondents noted the complete absence of research in their programme of study.

> During our studies, teacher-research was never mentioned as a responsibility. I do not see how research will be incorporated in our future work realities on top of other demands of the teaching profession. (Student Teacher 12)

> Our programme does not support research work and its entire approach is dedicated to teaching methods and learning. There were no research-oriented assignments, either (Student Teacher 33)

These statements reveal that some teacher educators do not integrate teacher-researcher development into their teaching because they consider research irrelevant to teaching. This means that teacher-researcher development is missing in courses. The teacher educators' beliefs that the work of a teacher-researcher is limited scientific research clearly influences how student teachers understand and approach research in their future work. As a consequence, the

student teachers had already detached themselves from the possibility of future research engagement before starting their careers.

Limited research infrastructure

The theme of limited research infrastructure details various barriers to accessing and exploring education research.

> Although our institution subscribes to online research databases, limited or no access is granted to students. The majority of students have a limited command of the English language, which makes it impossible for staff to recommend updated articles in a foreign language to students. (Teacher Educator 9)

> In the absence of literature, teacher educators prepare lecture notes as the only literature for an entire course. These teacher educators will test students based on the prepared lecture notes and this is extremely detrimental to the students' research spirit. (Teacher Educator 1)

Research-oriented understandings and approaches

The results show that a research-oriented curriculum is approached under the following themes: *a narrow view of research skills development* and *thesis work as the only research engagement*.

A narrow view of research skills development

The results show how teacher-researcher development is viewed as limited to technical research skill development, while research skill development is limited to one course in the programme: a research methods course. The teaching of research skills is not integrated into any other courses, thus leading student teachers to develop and experience research as a component of education that is separate from their teaching practice during their ITE.

> All of our programmes have at least one research methods course. However, the purpose of methods courses is to emphasise more formal aspects of research techniques, which is supposed to help students with thesis preparation at the end of the programme. (Teacher Educator 2)

In the research methods course, teacher educators deliver abstract, teacher-centred lectures lacking concrete materials. Student teachers' technical research knowledge is assessed through formal exams and limited student

assignments. Research proposal assignments require no practical research.

> I do not expect to develop research skills by only attending one research techniques course, nor do I expect to know how to approach research in my future work as a teacher. […] Scientific research is too demanding for me as a future teacher. (Student Teacher 121)

The results indicate that both teacher educators and course implementations have narrowed research orientation to technical research skills and established knowledge of research methods in theory. No process of a mindset change for teacher-researcher development was reported.

Thesis work as the only research engagement

The results show that teacher-researcher development is approached during the thesis project at the end of the programme. However, the study respondents share the view that while thesis work is considered a rich research experience for student teachers in theory, in reality the process is only a formality for fulfilling programme requirements.

> The thesis project is not approached as a small-scale project that is supposed to help student teachers understand how research helps to improve classroom practice; instead, it is usually broad and theoretical, and does not consider its social application. (Teacher Educator 7)

> Although students are required to submit a research proposal at department level, due to the high teacher-student ratio, the process of evaluating and mentoring the student thesis is not properly managed. From my experience as a department head and a teacher educator, I can tell you that we do not have the capacities to provide detailed feedback to student proposals, especially for a BA thesis. We have therefore sometimes allowed students to graduate with substantial thesis problems, thus turning this process into a formality. (Teacher Educator 15)

Student teachers shared the view that courses have not provided skills development consistently throughout the programme. Therefore, they do not feel skilled enough to engage in research tasks.

> Our programme did not expose us to research activities and assignments at all. We are now almost at the end of the programme and we will soon be faced with

> thesis work requirements. However, I can say that we are 'zero' prepared for undertaking such a challenging task. One course at the end of the programme is not adequate. (Student Teacher 2)

This discussion clearly indicates that thesis work is approached as a formality and does not yield productive student research engagement. Consequently, a distorted perception of the thesis has developed: it is viewed as a mandatory research activity for programme completion instead of a valuable experience for the teaching profession.

Research-tutored understandings and approaches

The thematic analysis did, however, reveal some signs of implementing a research-tutored approach in ITE in Kosovo with the following theme: *analytical and reflective skills and attitudes to education problems.*

Analytical and reflective skills and attitudes to education problems

Supporters of research-tutored understandings and approaches encourage teacher-researcher development by facilitating classroom discussions of education problems to bridge theory and practice. Students receive guidance and feedback to foster critical conversations and encourage group work. This approach facilitates growth of student teachers' reflective skills, rather than technical research knowledge.

> Reflective discussions allow student teachers to exchange ideas, judge education problems critically and make joint decisions. (Teacher Educator 13)

> Student reflective discussions are evaluated using guidance and feedback to influence an analytical and reflective student attitude to education problems. (Teacher educator 5)

Reflective discussions are assessed using multiple strategies. Reading and analysing international literature challenges student teachers and strengthens their English language skills. These assignments are particularly valuable as student teachers often do not yet have strong English language skills. Student teachers contribute to course development. Their assignments reflect reviewing and assessing texts, organising ideas, generating critical analysis, and discussions. In addition, students develop a strong sense of collaborative work. This approach is embraced by teacher educators in the field of pedagogy, who

promote a more open view to defining and approaching teacher-researcher development.

Research-based understandings and approaches

The findings show *missing research-based teacher education*, which is discussed under this theme.

Missing research-based teacher education

The findings reveal that only a few teacher educators in the study view and approach teacher-researcher development holistically.

> There is a need to develop the teacher-researcher through a holistic approach that goes beyond technical research methods courses. This allows future teachers to free themselves from the knowledge gained in the research methods course and ensures that they develop a wide range of research skills throughout various courses in their programme, […] including analysis, critical thinking, reflection, and action research. In other words, teacher-researcher development is an inclusive process (Teacher Educator 7)

This approach promotes teaching and learning by guiding student research and reflective work. Education research is understood and approached through context and situation-dependent methodologies that enable problem-solving. Student teacher assignments are demanding, and as a result student teachers produce high-quality work.

> With the help of my teacher educator, I planned and engaged in action research to inform and improve my teaching practice. (Student Teacher 205)

This small but significant group of teacher educators strives to develop a culture of teacher learning as a lifelong process by developing teacher-researchers. This approach empowers student teachers to understand any form of research activity – from reviewing education research and reflection, to action research – as teacher-researcher approaches that improve the quality of their future practice. This cluster was comprised mostly of teacher educators in the field of pedagogy, as well as a few subject teacher educators.

Factors explaining conflicting understandings and approaches in teacher-researcher development

The results show that factors explaining conflicting understandings and approaches in teacher-researcher development relate to: *(a) teacher educator discipline* and *(b) programme goals and values.* Both themes represent context-based elements and show how they are manifested in the course of teacher-researcher development. The influence of teacher educator discipline and programme goals and values in teacher-researcher development are discussed simultaneously, as examining aspects related to programmes while isolating the influence of teacher educator practice is almost impossible.

When discussing programme goals and values, there is a consensus among teacher educators that implementing programme regulations is course-specific and depends on the teacher educator's approach. The findings of the present study show that understanding the teacher-researcher concept, integrating it within course design and delivery, and approaching teacher-researcher development is often strongly aligned to the teacher educator's own discipline. Consequently, when discussing teacher educator practice, the interviewees described a clear divide between perceptions of teacher educators of pedagogy and of subject disciplines in the context of teacher-researcher development. The results show that the majority of subject teacher educators regard one research methods course for developing teacher-researchers as "enough". There is a consensus among subject teacher educators that teacher-research development is fully supported by knowledge of scientific research.

> As a subject academic staff member, I teach students research methods using knowledge of scientific research methods. Knowledge of the research process is the most powerful weapon for future teachers' research engagement. Thus, teachers should have a strong knowledge of scientific research methods to engage in research and produce new findings. (Teacher Educator 2)

At the same time, other teacher educators, mostly in the field of pedagogy, believe that various approaches should be employed to integrate research into different courses for teacher-researcher development.

> The teacher-researcher cannot be developed through one methods course; research should be integrated into all courses, regardless of the nature of the course, through different activities that teacher educators design and deem appropriate. Such an approach focuses on the teacher-researcher's analytical,

> critical and reflective skills, and is oriented towards problem-solving. (Teacher Educator 3)

> The teacher-researcher is someone who tries different approaches and then tests the ones that fit better within the school and classroom context. They value collegial work to address education problems. It is important to emphasise that action research is not their only research activity; the teacher-researcher engages in a wide range of inquiry-based activities to improve teaching practice. Teachers are practice-based, not scientific researchers. Hence, research activities are inclusive and not limited. (Teacher Educator 1)

The teacher educators' statements show tensions between teacher educators of different disciplines, reflecting diverse values and attitudes regarding their understanding of and approach to teacher-researcher development. Teacher educator flexibility and individuality in course implementation were distinguished as important contextual elements derived from the data. The development of teacher-researchers therefore emerges as ad hoc and isolated, and does not follow any solid programmatic approach.

> The main course that integrates research is research methods. Other courses focus more on knowledge. Courses that integrate research aspects the least are academic subjects. In short, the level of research integration in my programme depends on teacher educators and courses. (Student Teacher 261)

The data also revealed that subject teacher educators teach research methods in subject teaching programmes, while pedagogy teacher educators do so in more general education programmes. This approach of assigning methods courses based on the teacher educator's discipline has monopolised the understanding of and approach to education research and teacher-researcher development based on disciplinary frames.

Discussion and Conclusion

The purpose of this study was to examine the understandings of and approaches to teacher-researcher development in initial teacher education in Kosovo. The research found that the *understanding* of a research-based orientation and how it is *approached* within initial teacher education relates to the teacher educator's practice and the programme's values and goals. The study revealed important context-related tensions and how they manifest in

teacher-researcher development. Contextual relevance in teacher-researcher development is discussed in terms of four clustered understandings and approaches under Healey and Jenkins's (2009) framework.

First, the results show that limited and formal learning about education research through knowledge transmission emerged as the main teacher development approach. Teachers do not develop into researchers due to an understanding of research in terms of "scientific research" task complexity. While various studies (see: Alvunger & Wahlström, 2018; Jyrhämä et al., 2008) emphasise the fact that teacher-researcher development does not mean teachers becoming scientific researchers who generate novel results, the results of the present study indicate that many teacher educators and courses continue to strongly support a disciplinary and knowledge-based understanding of teacher-researcher development. The practical implication of our results is that prospective teachers do not link research with teaching practice.

Second, the results reveal that content knowledge of research techniques and thesis work are the main components of teacher-researcher development. Our results partly align with Krokfors et al. (2011) in considering the organisation of research-based orientation through the BA and MA student thesis as natural. However, our findings show that research skills development is approached in isolation, limited to a research methods course. Consequently, our results differ from Toom et al. (2010) in suggesting that teacher-researcher development is a multifaceted process organised throughout the programme. The consequence of our findings in practice indicates that teacher-researcher development is equivalent to teacher technical research skills.

Third, the results support the idea that student teachers develop reflective skills and attitudes towards education problems concerning their future practice. Our finding corresponds to that of Afdal and Spernes (2018) in arguing for the research nature of reflective practice. The interpretation of our results infers that in a limited segment, Kosovo ITE has broadened teacher-researcher development in terms of teacher reflective practice.

Fourth, the results demonstrate that teacher-researchers develop though different research-oriented activities in various courses within programmes. Our results indicate that teacher-researcher development necessitates a multifaceted and continuous approach. Similar to other studies (see: Afdal & Spernes, 2018; Alvunger & Wahlström, 2018; Jyrhämä et al., 2008; Krokfors et al., 2011), our findings support the view of teacher-researcher development as not limited to developing student teacher research skills, but including a wide range of teacher-research roles and attitudes, such as critical thinking and reflection, continuous teacher growth and research engagement for classroom and school

improvement, among others. As suggested by Niemi and Nevgi (2014), being a teacher-researcher requires a much broader skillset than technical research skills alone.

However, the major results in the Kosovo context show that technical research skills development remains the only segment of the "larger pie" of teacher-researcher development. This narrow approach stems from a history of isolating research in one methods course, emphasising research content knowledge transmission in which students act as an audience, the development of theoretical research skills, and the perceptions of teacher educators and student teachers regarding the undertaking of thesis projects as a formality. This narrow conceptualisation is primarily due to inconsistent understandings and approaches, as well as a lack of commitment between programmes' goals and values and teacher educators' practice, resulting in a fragmented context of teacher-researcher development. Hence, the present study aims to highlight the importance of examining contextual variables, i.e., how teacher-researcher development is understood and approached, in order to ensure sustainable and context-based teacher-researcher development.

In conclusion, teacher-researcher development should be understood as a holistic and complex process within ITE. There is a need to reconceptualise teacher-researcher development beyond technical research skills and research methods courses. Programmes and teacher educators should share a common understanding and commit to multifaceted and continuous teacher-researcher development. Teacher-researcher development must be approached in terms of the work realities of the future teacher and school context improvements, in order to ease student teachers into research activities and influence a change in mindset for dynamic future teacher-researcher engagement (see also: Niemi & Nevgi, 2014). Research-based teacher education should therefore be a guiding framework for teacher-researcher development in order to improve the quality of initial teacher education.

Limitations and future research

It should be noted that the examination of teacher-researcher development is limited to programme analysis, teacher educator interviews and an open questionnaire in the Kosovo context. Future studies should consider the student teacher learning process and outcomes when engaging in teacher-researcher development activities. This could provide greater insights into assessing teacher-researcher development.

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doi: 10.26529/cepsj.869

Motivational and Demotivational Factors Affecting a Teacher's Decision on Whether to Do Research

Andrej Šorgo*[1] and Jasmina Heric[2]

One of the teacher's basic tasks should be to ensure that the quality of his/her educational work is continually enhanced by the application of practitioner research, as a recognised genre of educational research. The aim of this study was to explore factors that can motivate or demotivate teachers to include research in their educational practice. An online questionnaire was addressed to all Slovenian primary and secondary school teachers and full responses were received from 325 teachers. Although the teachers expressed high perceived self-confidence in their research abilities, this did not transfer to research activity, as only about one quarter of the respondents reported that they performed research. The main drivers of research are an intrinsic motivation for research and career goal orientation, followed by the relatively low influence of important others. Practitioner research is highly valued among teachers, so there must be other factors at work preventing more teachers from starting research activities. Among the leading factors recognised as obstacles are those that can be regarded as facilitating conditions in terms of motivational theory. Work overload, lack of time, school bureaucracy and family life can be regarded as competing with research for the teacher's time, along with other important issues. The school climate cannot be regarded as the main obstacle to research. The findings call for the reallocation of at least some work duties in favour of research as part of regular employment.

Keywords: teacher-researcher, reflective practitioner, motivation for research

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Motivacijski in demotivacijski dejavniki, ki vplivajo na odločitev učitelja, ali bo raziskoval

Andrej Šorgo in Jasmina Heric

Učiteljeva osnovna naloga bi morala biti stalno zagotavljanje dviga kakovosti izobraževalnega dela z vpeljavo lastnega raziskovalnega dela v prakso (»practitioner research«) kot priznane zvrsti raziskav v izobraževanju. Cilj te študije je bil raziskati vpliv dejavnikov, ki lahko motivirajo ali demotivirajo učitelje za vključitev raziskav v njihovo izobraževalno prakso. Spletni vprašalnik je bil naslovljen na vse slovenske učitelje osnovnih in srednjih šol, 325 učiteljev pa je prispevalo odgovore. Čeprav so učitelji izrazili visoko samozavest o svojih raziskovalnih sposobnostih, pa se to pozneje ni preneslo v njihovo raziskovalno dejavnost, saj je le približno četrtina anketirancev poročala, da so že raziskovali. Najpomembnejši spodbujevalci raziskovalnega dela so notranja motivacija za raziskovanje in karierni cilji, čemur sledi razmeroma nizek vpliv pomembnih drugih. Ker je raziskovalno delo med učitelji zaznano kot cenjeno, sklepamo, da morajo obstajati drugi dejavniki, ki preprečujejo, da bi se več učiteljev vključilo v raziskovalne dejavnosti. Med vodilnimi dejavniki, ki so prepoznani kot ovire, so tisti, ki jih lahko v smislu motivacijske teorije obravnavamo kot olajševalne okoliščine. Zato lahko preobremenjenost z delom, pomanjkanje časa, šolska birokracija in družinsko življenje skupaj z drugimi pomembnimi vprašanji tekmujejo z raziskovalnim delom za čas učitelja. Medosebnih odnosov v šoli ne moremo obravnavati kot glavno oviro pri raziskovanju. Če bi želeli vzpodbuditi avtentično raziskovalno delo učiteljev, bi to na osnovi ugotovitev, pridobljenih z raziskavo, zahtevalo prerazporeditev vsaj nekaterih delovnih nalog v korist raziskav v okviru redne zaposlitve.

Ključne besede: učitelj raziskovalec, refleksivni praktik, motivacija za raziskovanje

Introduction

Research activities are not regarded as a part of the teacher's regular work at primary and secondary schools in Slovenia. However, in order to avoid the trap of "cargo-cult" based education (Hattie & Hamilton, 2018), teachers should be an integral part of research and change (Borko, Liston, & Whitcomb, 2007; Hirsch, 2002). Such an approach can lead to evidence-based solutions that avoid the following situation: "The return of school reforms suggests that the reforms have failed to remove the problems they were intended to solve" (Cuban, 1990, p. 5). In the literature, there are many different perceptions of teacher research, ranging from informal research and solving practical problems (Cochran-Smith & Lytle, 2009), to "strict" academic research (Akerlind, 2003). Knowledge of and attitudes towards research in schools at all levels should therefore be given high priority.

One of the pre-university teacher's main occupations throughout his/her career should be continuous improvement of educational practices based on evidence. Regardless of whether the teacher merely wants to fix specific classroom problems, or whether s/he wants to compare his/her own practice with that of others, to test the added value of updated technology, or to test a workable proposal from curriculum reformers or a teacher conference, all actions should be based on evidence. The best evidence is provided by the application of a research methodology following qualitative, quantitative and mixed methods of inquiry. These are traditions adapted to practitioner research as a recognised genre among educational research traditions (Borko, Liston & Whitcomb, 2007), whereby teachers and their work are simultaneously objects and researchers. Teachers' inquiry and research efforts generally do not follow research methods designed for laboratory experiments in a controlled environment, nor do they include the recognition of possible bias. Thus, unidentified factors influencing results become increasingly important (Brown, 1992). On the other hand, "authenticity" represents the added value of such research (Del Carlo, Hinkhouse, & Isbell, 2010).

The fluid nature of education, where the only constant is change, brings insecurity to teachers' daily routines (Cuban, 1990; Tobin & McRobbie, 1996). As described by Šorgo et al., 2011, p. 306), teachers live "in an educational landscape, where beside tested traditional and new strategies of teaching, paths are covered with shards of temples of educational theories and raging prophets of instant education". Truths from the past, as well as the promises of reformers, should therefore be constantly tested (Cuban, 1990). The first major reason for repeated evaluation is the realisation that classroom education practices are conservative and

resistant to change, even when change is necessary (Tobin & McRobbie, 1996). On the other hand, conservative systems tolerant of change "can sometimes prevent damages with the introduction of untested solutions into teaching on a wide scale" (Šorgo, Usak, Aydogdu, Keles, & Ambrožič-Dolinšek, 2011, p. 306).

There are numerous studies of the connections between research and teaching among higher education personnel (e.g., Hattie & Marsh, 1996); however, higher education is beyond the scope of the present study. Therefore, whenever the word "teacher" is used in the present text, it should be understood in the sense of a pre-university primary or secondary school teacher with no official research duties. There are many published papers advocating the importance of research for teachers in three distinct contexts: (1) as a collaboration between teachers and researchers; (2) with teachers as the primary researchers; and (3) in teachers' study groups (Watts, 1985). It is beyond the scope of the present article to review this topic; however, a general conclusion is that practitioner research provides many benefits and does not harm the educational process.

It is probably wishful thinking to believe that the education of prospective teachers can provide all of the necessary lifelong competencies related to teaching in all possible varieties, while simultaneously allowing teachers to develop the ability to solve emerging problems (Del Carlo et al., 2010). However, at the beginning of their educational career, teachers who are prepared to accept the role of reflective practitioner (Schon, 1983) have an advantage, as they can recognise their teaching as an intellectual activity in which they can build a new understanding based on their own experiences and reflections on them. Nevertheless, such experiences, even if anecdotal, should be properly evaluated, and any consequences should be based on logical reasoning and formally correct procedures (Brown, 1992), even if a language different from that in academic institutions is used (Del Carlo et al., 2010).

The idea that teachers should research their own work stemmed from the reasoning that such activities can improve their professionalism and autonomy (Richards & Lockhart, 1994; Vogrinc, Zuljan, & Krek, 2007; Zuljan, Vogrinc, Bizjak, Krištof, & Kalin, 2007). Furthermore, these activities can be continued later in the teacher's career (Wilhelm & Fisher, 2019), when research work can be performed in partnership with professionals, individually or as group work with other teachers (Watts, 1985). According to Lewis and Munn (1987, p. 10), the main motivators for teachers to engage in research are:

(1) to monitor and influence the direction of new developments;
(2) to discover what is going on, recognising that what occurs is not always the same as what is thought to occur;
(3) to evaluate what is already taking place.

There are many arguments for the importance of teacher research. It can help in the introduction of innovations in the classroom (Ermeling, 2010), increased efficacy (Henson, 2001), as well as improvement of the teacher's knowledge of research and his/her ability to perform research (Meijer, Oolbekkink, Meirink, & Lockhorst, 2013). Since research stems from professional concerns and beliefs, as well as from actual practice (Sande, 2018), teachers applying a bottom-up approach can warn authorities, supported by evidence, about flaws in regulations, expectations, curricula, syllabi, donated tools, work conditions, and similar (Dana, Thomas, & Boynton, 2011; Smith & Lytle, 1999).

Furthermore, individual research can provide the ability to read and understand terminology and statistics at the level of academic research (Kirkwood & Christie, 2006). By understanding cutting-edge research, teachers can help to overcome the missing transfer of academic research findings to the educational sector, where they can be tested in real settings (Johansson, Sandberg, & Vuorinen, 2007). With the inclusion of teachers as partners in research coalitions, and not only as objects of observation or providers of data, the teacher can provide valuable information and views from different perspectives (Peeters & Vandenbroeck, 2011).

There are many factors that can influence teachers' intentions and actual research activities. Basically, these can be divided into personal characteristics and traits, on the one hand, and environmental factors, on the other, whereby the school climate, philosophy and culture can either support or hinder the research activities of an individual teacher or a collective (Richards & Lockhart, 1994).

According to motivational theories, behavioural intentions are a precursor of actual behaviour (Madden, Ellen, & Ajzen, 1992) and are moderated by a limitless number of factors and combinations of factors, which can be loosely grouped as follows: personal traits and characteristics tagging a person of interest (e.g., gender, personality); interpersonal relations (e.g., the influence of an important other); and factors pertaining to the immediate (school) and distant environment (e.g., the availability of a library, research funds and grants). It is far from easy to establish and cultivate a research culture in schools and upgrade it to the level where the findings and the quality of conclusions can be complementary to the research of academics and professional researchers (Mitchell, 2002; Stenhouse, 1975). Cencič (2001) emphasises the importance of openminded and supportive institutions that do not suppress practitioner research. If teachers face too many obstacles, the most probable outcome is accommodation to traditional and well-tested strategies.

A number of authors have outlined the importance of schools as learning communities where teachers can test their ideas, communicate them to

colleagues, and informally peer review each other's work (Schaap & de Bruijn, 2018; Vec, 2007). An important obstacle is the traditional organisation of school life, with fixed schedules and yearly planned activities within a fixed annual plan, a situation that does not often allow the flexibility needed for the introduction of novel methods. Since teachers are constantly inundated with tasks that need to be completed immediately, they come to identify research as something that will take them away from more important things in the classroom (Kennedy, 2016).

In Slovenia, the role of the researcher is the least interesting and the least abundant among the many roles of the teacher (Cencič, 1998). According to Cencič (1998), the unattractiveness of research activity to teachers can be attributed to:

(1) the opinion that research and teaching are incompatible and that research is the exclusive domain of professionals;
(2) the complexity of the research process and statistical methods;
(3) the requirements of "traditional research" in terms of validity, reliability and objectivity;
(4) a lack of the specialised knowledge, skills and attitudes needed for research.

Aims and scope of the research

The aim of the present research was to identify and explore the motivational factors that positively or negatively influence research activity among Slovenian teachers. Our interest lay in the identification of teachers' perceived motivation and demotivation, as well as their perceived self-confidence with regard to their individual research. For those who do not engage in research, our intention was to establish the major obstacles that prevent research activity.

Due to the exploratory and nonexperimental study design, formal hypotheses were not established prior to the research. However, in the search for differences between personal characteristics, a general hypothesis can be understood in the sense: "Differences between participants based on a characteristic (e.g., gender) are statistically significant" and are later the subject of an appropriate statistical test.

The research questions were:

(1) What motivates teachers to do or not to do research?
(2) Which factors are the main perceived obstacles for those who do not engage in research?
(3) Are there differences between personal characteristics that influence participation in research?

Method

Research population and sample

The research population comprised all of those who can be identified as teachers at Slovenian nine-year basic school and upper secondary vocational, professional and general schools, representing a total of approximately 28,000 persons.

The invitation to complete the online questionnaire resulted in 1,872 visits to the application, of which 325 (17%) provided all of the required responses. The sample comprised 66 (20.3%) males and 259 (79.7%) females. Of the respondents, 122 (37.5%) reported 0–20 years of work experience, and 203 (62.5%) reported more than 20 years of work experience.

Sampling

The questionnaire was assembled on the Slovenian open survey system 1KA (Enklik, 2019). The link, accompanied by a short flyer with a brief description of the aims of the research and the survey instrument, was sent to the email addresses of all Slovenian schools. In addition, it was announced at teacher forums and on online social networks. Data was collected between October 2018 and January 2019.

Questionnaire

The initial version of the questionnaire was prepared by the authors as part of a master's thesis (Heric, 2019), and a draft version was validated by experts from the field of education and sent to a number of preservice teachers to be checked for comprehensibility and language. The pre-final version – in Slovenian, as the language of the survey – was checked by a proofreader. For the purpose of the presentation, it was translated into English and the translation checked by a bilingual native speaker.

The parts of the questionnaire considered in the present paper are as follows:

- *Demographics*. We asked about the teachers' gender and years of experience.
- *Self-report on research intentions and actual research practice.* We asked one question about whether, in addition to their pedagogical duties, the teachers also performed research. Five possibilities were offered (see Table 1).
- *Self-assessment of perceived research capability.* We asked about the teachers' perceived capability to do research in the domain of the discipline they teach, and in the domain of educational research. In both cases, the

report format was a 7-point Likert scale with the extreme options being 1 (completely disagree) and 7 (completely agree). Only numbers were offered, without a written description of their value (e.g., partially agree) (see Table 2).

- *Motivation for research.* We provided 19 items that could motivate teachers to undertake research work on a 7-point scale between 1 (completely disagree) and 7 (completely agree) (see Table 3).
- *Obstacles preventing research.* The question "What can be regarded as an obstacle that prevents you from doing research or from devoting more time to it?" was addressed to those who did not clearly declare that they did research. We provided 15 items listing obstacles on a 7-point scale between 1 (completely disagree) and 7 (completely agree) (see Table 4).

Statistical analysis

The data were exported from the 1Ka survey system as Microsoft® Excel files. They were scrutinised for outliers, missing data and patterns showing regularity (e.g., answers in diagonal). After clearing, the data table was imported into the SPSS® statistical package to undergo statistical procedures.

All variables were preliminarily checked for normality. Since the majority of the variables do not follow the assumption of normality (Kolmogorov – Smirnov test, at the $p < .05$ threshold level), and due to the ordinal nature of the items, the Mann-Whitney nonparametric test was used. Effect size r was calculated according to the formula $r = -z/\sqrt{N}$ as provided in Field (2009, p. 550). Threshold (margin) values were set as $r < .2$ for insignificant effect size, $r < 0.5$ for small effect size, $r < 0.8$ for medium effect size, and $r > 0.8$ for large effect size. Eta squared following the Wilcoxon signed ranks test was the choice when samples were related.

Reliability was calculated as Cronbach's alpha, and a value of alpha larger than .7 was set as a threshold margin.

Exploratory factorial analysis (EFA) followed standard procedures as proposed for such analyses (Field, 2009). Principal Component Analysis (PCA) with oblique (Direct Oblimin) rotation was chosen. Component loadings lower than .4 were not considered in component interpretation. Parallel analysis was chosen to reveal the number of components as extracted by PCA (Patil et al., 2017).

Results

In order to answer the research questions, the results are provided as tables and comments.

Self-report on research intentions and actual research practice

The results are given in Table 1 as the frequency of responses to the question: "*Along with your pedagogical duties, do you also perform research?*"

Table 1

Frequency of responses to the question: "Along with your pedagogical duties, do you also perform research?"

Response	f	f %
I do not perform research; however, I would if had the chance.	114	34.1
Yes, I do research.	82	24.6
I did engage in research, but not anymore.	70	21.0
I do not perform research, and I have no intention of doing so.	64	19.2
I am a student.	4	1.2

Note. N = 334.

Table 1 indicates that only about one quarter of respondents reported that they did perform research, and slightly less than one fifth maintained that they had no intention of doing research.

Perceived research capability

The results for perceptions of research capability on a 7-point scale (N = 504) are presented in Table 2.

Table 2

Frequency and measures of central tendencies of responses to the question: "Do you think that you possess enough professional knowledge to conduct research parallel to your teaching duties?"

Code	Discipline	f1 %	f2 %	f3 %	f4 %	f5 %	f6 %	f7 %	Mean	SD	Med
Q2b	In the core field of study.	1.6	1.8	4.4	14.1	24.8	37.5	15.9	5.35	1.27	6
Q2a	In the pedagogical/ didactic field.	1	2.8	5.4	17.5	32.3	29.4	31.5	5.12	1.25	5

Note. N = 334. Frequencies between f1 – completely disagree – and f7 – completely agree.

From the results presented in Table 2, it can be seen that on average the teachers expressed slightly greater confidence in research within their core discipline than in educational research. However, despite being statistically significant (Wilcoxon signed ranks test; Z = -4,7; $p < .001$), these differences are small in terms of effect size ($\eta^2 = .04$).

After applying statistical tests, we were unable to find statistically significant differences at the $p < .05$ levels in any of the personal characteristics under investigation. However, those who actually perform research evaluated their perceived capabilities in both variables more highly than those who, for whatever reason, do not (U (Q2a) = 6797.5, $p < .001$) $\eta^2 = 0.06$); (U (Q2b) = 7040, $p < .001$, $\eta^2 = .06$).

Motivation for research

Motivation and its opposite, demotivation, can be regarded as the strongest factors in any decision to engage in research or not. The results of the motivation questionnaire are presented in Table 3. The table shows the frequency, central tendencies (mean, mode and median) and component loadings of the responses to the question about the importance given to a number of potential factors that can motivate teachers to do research work on a scale between 1 (completely disagree) and 7 (completely agree). The results are given as a percentage of the total sample (N = 325) and ordered by decreasing means.

Table 3

Descriptive statistics and results of EFA of responses to the question about the importance given to a number of potential factors that can motivate teachers to do research work.

Code	Statement	f1 %	f2 %	f3 %	f4 %	f5 %	f6 %	f7 %	Mean	SD	Med	PC1	PC2	PC3
Q3f	Own satisfaction	0.0	0.3	1.2	2.9	15	33.1	**47.5**	6.22	0.92	6	.77		
Q3b	Own professional development	0.0	0.3	1.8	3.8	10	41.3	**42.8**	6.19	0.92	6	.82		
Q3d	Own wish to research	0.3	0.6	1.8	4.4	10.9	34.9	**47.2**	6.18	1.03	6	.74		
Q3i	Gathering new knowledge	0.6	0.9	0.9	3.5	11.7	**40.2**	28.6	6.14	1.02	6	.79		
Q3j	Gathering new experiences	0.0	0.6	1.2	3.8	13.8	**41.1**	39.6	6.12	0.94	6	.81		
Q3o	Development of own ideas	0.3	0.9	1.8	3.5	15.8	**41.9**	35.8	6.03	1.02	6	.75		
Q3g	Overcoming new challenges	0.6	0.3	2.9	7.0	23.2	**40.8**	25.2	5.75	7.08	6	.73		
Q3e	Own entertainment	1.8	2.1	3.2	12	24.6	**33.7**	22.6	5.47	1.32	6	.56		
Q3a	Proof of own capabilities	2.9	2.1	4.4	13.5	18.8	**33.7**	24.6	5.43	1.45	6			.63

Code	Statement	f1 %	f2 %	f3 %	f4 %	f5 %	f6 %	f7 %	Mean	SD	Med	PC1	PC2	PC3
Q3p	Incentive of a school/collective	2.1	2.9	3.8	16.4	26.4	**33.4**	15.0	5.22	1.34	5		.58	
Q3s	Collecting points for promotion	5.9	4.4	6.7	14.7	23.2	**28.4**	16.7	4.97	1.65	5			.69
Q3m	Promotion of the school	4.7	5.9	6.2	15.2	**30.5**	25.5	12.0	4.86	1.55	5		.67	
Q3c	Own promotion	6.5	7.6	10.6	20.2	22.3	**23.5**	9.4	4.52	1.65	5			.73
Q3n	Research of other colleagues	7	7	7.3	**28.7**	25.5	19.9	4.4	4.36	1.52	4		.64	
Q3h	Gaining respect from colleagues	9.7	9.7	9.4	**31.1**	22.3	12.6	5.3	4.06	1.60	4		.63	
Q3q	Striving for professional rewards	13.8	11.4	8.5	**32.2**	21.1	16.1	5.9	3.98	1.78	4			.61
Q3r	Competitiveness between teachers	21.4	16.7	14.1	**28.7**	15	2.9	1.2	3.13	1.53	3		.63	
Q3k	Public pressure	22.3	16.7	12.9	**30.5**	12.0	4.1	1.5	3.11	1.56	3		.79	
Q3l	Pressure from colleagues	20.2	20.2	15.2	**29.9**	12.3	2.3	1.5	3.09	1.49	3		.77	

Note. N = 325. Frequencies in percentages between f1 – completely disagree and f7 – completely agree. Mean = arithmetic mean; SD = standard deviation, Med = median; Mode = values of mode are in bold type; PC1–PC3 = principal components.

Table 3 shows that the top three items can be attributed as factors of intrinsic motivation, while the bottom of the table contains those items belonging to extrinsic motivation. Statistically significant differences between genders were found in statements Q3b *($U = 6640.5$; $p = .002$; $r = .17$)*, Q3f *($U = 7278.5$; $p = .03$; $r = .11$)*, Q3i *($U = 6725.5$; $p = .004$; $r = 0{,}16$)*, Q3j *($U = 6464.5$, $p < .001$; $r = .18$)* and Q3s *($U = 6818$; $p = .009$; $r = .14$)*. In all of these cases, agreement with the statements was higher among females. Statistically significant differences between ages were found for statements Q3q *($U = 9746.5$; $p < .001$; $r = .18$)* and Q3s *($U = 10640.5$; $p = .03$; $r = .12$)*, with higher agreement among younger teachers.

Exploratory factorial analysis

Cronbach's alpha of the entire instrument is .87. Values of KMO (.89) and Barlett's Test of Sphericity (Approximate Chi-square = 2882.5, $df = 171$, $p < 0.001$) allow the intended analyses. PCA analysis with oblique (Direct Oblimin) rotation revealed three components (C1–C3), explaining 58.1% of the variance. Statistical data, as well as component loadings, are provided in Table 3. The first component is a construct of eight statements (31.8% of the variance; Eigenvalue 6.05; Alpha = .890) showing internal motivation and positive attitudes towards research. The second component (19.8% of the variance; Eigenvalue = 3.77; Alpha = .847)

comprises statements that can be regarded as extrinsic motivation triggered by important others (public, collective, etc). The third component (6.5% of the variance; Eigenvalue = 1.23; Alpha = .740) comprises statements in which intrinsic motivation can be identified as a driver for goal orientation.

Teachers who do not perform research

The next pool of items, aimed at identifying reasons for teachers not engaging in research, was addressed to those teachers who responded that they did not do any research. The results are presented in Table 4. The table shows the frequency, central tendencies (mean, mode and median) and component loadings of the responses to the question about agreement with a number of obstacles preventing research. The results are given as a percentage of the total sample (N = 242) and ordered by decreasing means.

Table 4

Descriptive statistics and results of EFA of responses about obstacles preventing practitioner research.

Code	Statement	f1 %	f2 %	f3 %	f4 %	f5 %	f6 %	f7 %	Mean	SD	Med	PC1	PC2	PC3	PC4	PC5
Q8l	Too great a workload	1.7	1.2	3.7	11.6	14.9	**36.0**	31.0	5.69	1.33	6		.78			
Q8j	Lack of time	2.1	3.3	4.5	12.4	19.0	**31.0**	27.7	5.47	1.46	6		.88			
Q8a	Too much bureaucracy	2.5	2.1	4.1	19.8	15.3	**29.3**	26.9	5.39	1.47	6					.63
Q8b	Family responsibilities	2.9	4.5	7.0	15.3	24.0	**26.0**	20.2	5.12	1.54	5		.68			
Q8k	Lack of money in the school	7.0	7.4	6.6	**28.9**	15.7	22.3	12.0	4.54	1.69	4.5					
Q8c	I do not find a career in science attractive	9.9	13.2	8.7	**30.6**	18.2	12.8	6.6	3.99	1.68	4			.84		
Q8i	I am hindered by a lack of knowledge of a foreign language	16.1	14.9	7.9	**20.2**	**20.2**	14.5	6.2	3.82	1.86	4				.54	
Q8d	I do not think I would be accepted as a scientist or researcher.	12.0	19.4	12.8	**29.3**	14.0	6.6	5.8	3.57	1.65	4					.71

Code	Statement	f1 %	f2 %	f3 %	f4 %	f5 %	f6 %	f7 %	Mean	SD	Med	PC1	PC2	PC3	PC4	PC5
Q8g	I do not have enough professional expertise	10.7	21.9	9.9	**25.6**	21.9	8.3	1.7	3.57	1.57	4				.90	
Q8h	I am not interested.	16.1	17.4	12.8	**26.0**	14.5	10.7	2.5	3.48	1.67	4			.75		
Q8e	I think that teachers are not educated enough to do research.	12.8	**29.3**	12.4	23.1	16.9	4.5	0.8	3.19	1.49	3				.68	
Q8f	The negative climate at school.	22.3	22.7	14.0	**25.2**	8.7	4.5	2.5	2.99	1.59	3	.80				
Q8o	The collective does not appreciate my research work.	24.8	21.1	6.2	**36.8**	4.5	4.1	2.5	2.98	1.59	3	.89				
Q8m	Research is not a job for teachers.	**33.1**	26.9	8.3	23.1	6.2	2.1	0.4	2.50	1.44	2	.46				
Q8n	I do not attach any importance to research.	**36.8**	27.7	9.9	14.0	7.9	3.3	0.4	2.40	1.48	2	.48		.43		

Note. N = 242. Frequencies between f1 – completely disagree – and f7 –completely agree. Mean = arithmetic mean; SD = standard deviation, Med = median; Mode = values of mode are in bold type; PC1–PC5 = principal components.

At the top of the reasons (Table 4) for not doing research are factors that can be recognised as perceived (actual) behavioural control. The items at the bottom of the table comprise disagreement with claims about the importance of research and claims that research is not for teachers.

Statistically significant differences between genders (higher agreement among male respondents) were found for statements Q8m *($U = 3332.5$; $p = .046$; $r = 0.22$)* and Q8o *($U = 3237.0$; $p = .025$; $r = .25$)*. Knowledge of a foreign language (Q8i) was recognised as a more important obstacle by older teachers *($U = 5023.5$; $p <= .001$; $r = .25$)*, while lack of time (Q8j) *($U = 5166.0$; $p < .001$; $r = .24$)* was a reported cause for a greater number of younger teachers.

Exploratory factorial analysis

Cronbach's alpha of the entire instrument is .75. Values of KMO (.73) and Barlett's Test of Sphericity (Approximate Chi-square = 909.7, df = 1051, $p <$ .001) allow the intended analyses. PCA analysis with oblique (Direct Oblimin) rotation revealed five components (C1–C5), explaining 63.6% of the variance by the application of the criterion Eigenvalue > 1. However, after the application of

stricter criteria based on parallel analysis (Patil et al., 2017), only the first three components, explaining 48.5% of the variance, were revealed. Statistical data, as well as component loadings, are provided in Table 4. The first component is a construct of four statements (23.1% of the variance; Eigenvalue 3.47; Alpha = .73), showing that the school climate cannot be regarded as the main obstacle to research. The second component (15.7% of the variance; Eigenvalue = 2,36; Alpha = .73) comprises three statements that can be regarded as providing competition for research time with other more important issues (e.g., family, school workload). The third component (9.6% of the variance; Eigenvalue = 1.45; Alpha = .66) comprises three statements showing neutral interest in research.

Discussion

The discussion is organised as responses to the research questions. From the research findings, we can identify good news and bad news. The good news is that teachers express high perceived self-confidence about their research abilities (Table 2), both in their own discipline and in pedagogy. However, this does not transfer to actual research, as only approximately one quarter of the respondents reported that they actually do research (Table 1). Furthermore, it seems that even those who reported research activity only participate in research sporadically, and the major venue for publishing their work is the proceedings of teacher conferences. We did not ask about their mentorship of young researchers, an institution that is well established in Slovenia and can be recognised as individual research by a number of teachers. In bibliographical databases, most published material from teacher conferences is not indexed; therefore, the real numbers regarding visible research are inaccessible. When a search was performed in the academic database Web of Science under the category "Education and Educational Research", it became clear that teachers rarely publish in international peer-reviewed journals (data not shown). Most of the published articles were prepared in cooperation with professional researchers.

The best potential for change involves those (34%) who reported that they would participate in research should the opportunity arise. To test the honesty of their responses, they should be given an opportunity to begin research as partners in research projects of professional institutions or as members of *ad hoc* teacher research communities. Although the quality of practitioner research was not a concern of this study, it should be noted that only methodologically sound research, whether qualitative or quantitative, can count as evidence for change. To achieve the appropriate research levels, teachers need more than just support at the material level, although this, too, should not be ignored. For

example, teachers are regularly denied access to academic databases if these are behind a paywall, and the same is true of access to professional statistical packages. They also need supportive peer review of their work in all phases of research. Some concern could arise from the equal number of teachers who once performed research but no longer do so, and those who stated that they never do research and have no intention of starting. These two groups should be addressed in follow-up research to provide solutions for their (re)activation.

1) What motivates teachers to do or not to do research?

There is no need for concern regarding self-reported motivation (Table 3) for research, as the top of the list is populated by statements forming the first principal component, which can be recognised as pristine representatives of intrinsic motivation as the most important driver of research activity. The second component can be regarded as important others, and at the end of the table are statements related to the material career aspects of research activity. The results are in line with a study by Muršak, Javrh and Kalin (2011), who found that most teachers are not career oriented. In our results, this was reflected in the finding that younger teachers are more oriented towards "token collection" and career building. Based on PCA, three components (C1–C3) were extracted, explaining 58.1% of the variance. The most important component is considered as intrinsic motivation and positive attitudes towards research. The second component comprises statements that can be regarded as extrinsic motivation triggered by important others (public, collective, etc); however, according to the ranking, it has the lowest scores. The third component comprises statements in which intrinsic motivation can be regarded as driven by goal orientation (DeShon & Gillespie, 2005).

After scrutinising the descriptive and PCA analysis, it can be stated that practitioner research is highly valued among teachers. There must therefore be other factors at work preventing a larger number of teachers from undertaking research activity. Some concerns remain about those who do not express any wish to do research.

2) Which factors are the main perceived obstacles for those who do not engage in research?

Those who do not participate in research reported factors that can be recognised as facilitating conditions in terms of motivational theories (Madden et al., 1992). The respondents report work overload, lack of time, school bureaucracy

and family life as the major obstacles. These items form a component comprising statements that can be regarded as identifying competition for time between research and other more important issues. We can agree with Muršak, Javrh and Kalin (2011) that family life strongly affects the careers of teachers. One reason could lie in the empirical observation that a teachers' duties are not well defined, and that inquiry and research activities are mostly only tolerated and shifted to the shoulders of those with the ambition to do research, who do it in the time dedicated to preparation or administrative work. With such an approach, however, the adoption and critical evaluation of innovations is hindered. According to Kirkwood and Christie (2006), teachers should know at least the basics of research in order to be able to understand and evaluate their own work and the work of others. The message to regulators could be that they should not define any moment of a teacher's time, and not overload teachers with administrative work, especially with work that provides no evidence of benefit to school quality.

The good news is that school climate cannot be regarded as the main obstacle to research. This situation calls for a reallocation of workload in order to allow research to count as at least part of the teacher's regular workload. From the point of view of motivation, this group shows a neutral interest in research, which can be changed by means of extrinsic motivation.

3) *Are there differences between personal characteristics that influence participation in research?*

Differences between different groups in terms of effect sizes are small and for practical purposes insignificant. Younger teachers are slightly bit more enthusiastic, which can be associated with a desire for career progression and the concomitant benefits. In the opinion of the authors, there should be a balance between the enthusiasm of younger, inexperienced teachers and the wisdom and experience of older teachers, resulting in informal learning communities in which the potential output could be much greater than from work by any single teacher in isolation.

Limitations of the study

Despite the fact that all conceivable measures were taken to ensure awareness of the study and to make the public survey instruments available to the entire teacher population from all Slovenian regions and types of schools, the sample is probably biased towards those with some interest in research who were willing to answer. All of those who responded did so voluntarily and were guaranteed anonymity. No benefits were offered to the respondents. However,

within the limitations of the online sampling, all measures were taken to ensure the representativeness of the sample.

In spite of all of the measures taken to prevent them, the study still has a number of limitations. The main limitation is the lack of responses from the invisible majority of teachers, who may or may not hold the same opinions as those who responded. The other problem is the large dropout of those who visited the leading page of the instrument. We can only speculate about the reasons for the failure to continue responding. However, within the design of the study, it is impossible to make corrections for these potential errors. Therefore, the transferability of the results to non-responders and the global teacher population has certain limitations, which could be resolved with follow-up studies using stricter sampling procedures, and by including teachers from other countries.

Conclusions

Taking into account the limitations of the study, associated with the possibility of self-selection with regard to whether or not to commence and continue the questionnaire, several conclusions can be made. From the research results, we can conclude that there is no need for the majority of the respondents to change their opinion of research, which is mostly positive. The same applies to school climate, which is mostly positive towards research activities. We do, however, propose that research activity should be recognised as part of the workload of teachers and not perceived as belonging to the leisure-time activities of teachers. Although we are not in favour of making practitioner research obligatory, research should be promoted at every step of the career path as something positive, starting with education faculties helping preservice teachers to recognise the importance of practitioner research work for the improvement of school practice and providing student teachers with courses and opportunities to learn research methods and procedures (Sande, 2018; Wilhelm & Fisher, 2019). Teachers in schools should not be left to their own devices and should be able to form school learning communities with the material and moral support of the authorities.

As teacher educators, we have only limited opportunities to act directly in schools. However, there are a many opportunities to help teachers from the field. The first line should be in the recognition and introduction of practical research in prospective teacher education. Provision of a theoretical course on research methods with elementary statistics is simply not enough. Students should get research and investigation tasks throughout their study and not only as a diploma or master's thesis, if at all.

The second line should be the inclusion of teachers in own research or research designed for them, not only in the role of data providers, but as research partners. The third line should be encouraging practitioners to establish learning communities (research circles) and later helping them by mentoring and supervising their work. Last but not least, there is a need to help teachers to upgrade their work presented in teacher conferences to the level of being publishable in peer-reviewed journals.

The idea of recognising research as a part of work time is plausible, but at this time can only be a suggestion, as it will require a redefinition of the traditional roles of the teacher.

The major aim of the EFA was to explore the obtained responses for underlying components (constructs) and their absolute and relative importance for practitioner research. Based on their identification, two possible opportunities to use the constructs were identified: (1) to use them as theoretical constructs in follow-up studies following Confirmatory Factorial Analysis (CFA) traditions, and (2) to use them as overlying concepts in preservice and in-service teacher education, in order to intensify this education on issues where obstacles were identified.

Acknowledgements

The authors acknowledge the financial support of the Slovenian Research Agency for support to the core funding "Information Systems", grant no. P2-0057. We would like to thank Dr Michelle Gadpaille for language corrections. No conflict of interests are reported for the study. Primary data and research instruments are available upon request from the corresponding author.

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doi: 10.26529/cepsj.887

Teachers as Embedded Practitioner-Researchers in Innovative Learning Environments

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The paper introduces and explores the *Plans to Pedagogy* research programme, a three-year project focused on teacher capacity-building within schools. P*lans to Pedagogy* engages practitioner-researchers in the development of their and their colleagues' spatial learning skills as they move into and attempt to take advantage of innovative learning environments. The programme involves teachers from eight schools across Australia and New Zealand. Still in progress, each three-year project addresses the individual school's needs, while being supported by a more extensive university-situated "umbrella" research programme. This paper presents emerging findings from *Plans to Pedagogy* and discusses what is being learned about applied research in schools and how a research-focused approach to professional learning can enhance teacher learning and practice.

Keywords: teacher-researchers, applied research, professional development, innovative learning environments, teacher change

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Učitelji kot praktiki raziskovalci, vključeni v inovativna učna okolja

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Prispevek predstavlja in preiskuje raziskovalni program »*Plans to Pedagogy*«, triletni program, usmerjen h krepitvi učiteljske zmogljivosti v šolah. »*Plans to Pedagogy*« vključi praktike raziskovalce v razvoj prostorskih učnih sposobnosti pri njih samih in pri njihovih sodelavcih, s tem ko se premaknejo v inovativno učno okolje in ga skušajo povsem izkoristiti. Program vključuje učitelje iz osmih šol iz Avstralije in Nove Zelandije. Čeprav še vedno v teku vsak triletni projekt naslavlja potrebe posamezne šole, pri čemer ga podpira obsežnejši, univerzitetno lociran osrednji raziskovalni program. Prispevek prikazuje nastajajoče ugotovitve, ki izhajajo iz »*Plans to Pedagogy*«, in razpravlja o tem, kaj se uči o aplikativnih raziskavah v šolah ter kako lahko raziskovalno usmerjen pristop k strokovnemu učenju izboljša izobraževanje in prakso učiteljev.

Ključne besede: učitelji raziskovalci, aplikativna raziskava, strokovni razvoj, inovativno učno okolje, učiteljeva sprememba

Introduction and Context

The term innovative learning environments, or ILEs, is increasingly used to describe a school facility design that is characterised by highly flexible spaces, purposeful furniture and other learning space affordances, alongside ubiquitous technology. However, it is a term that also implies a corresponding innovative use of those spaces, via improved pedagogy and student-centred learning. The latter, sometimes described as "twenty-first century learning" and promoted by policy documents such as the Melbourne Declaration (Ministerial Council on Education Employment Training and Youth Affairs, 2008), is proving elusive: evidence exists suggesting that merely moving into ILEs does not automatically create a change to more student-focused pedagogies (Imms, Cleveland, & Fisher, 2016).

In the last six years, the Australian government has invested AU$16 billion of public funding (Department of Education, Employment and Workplace Relations, 2016) to build innovative learning environments in schools in order to provide multi-modal, technology-infused and flexible learning spaces (Cleveland & Fisher, 2014). It is becoming clear, however, that new learning environments require an understanding of new teaching methods. While building teacher performance has been well researched, little has been done specifically on pedagogy and space (Blackmore, Bateman, Loughlin, O'Mara, & Aranda, 2011; Cleveland & Fisher, 2014). The few existing empirical studies that address any correlation of space and student learning, and demonstrate some causality, have been small-scale studies with limited generalisability (Byers, Imms, & Hartnell-Young, 2014).

The Plans to Pedagogy (P2P) research programme is one initiative seeking to address the shortage of research evidence to support teachers in their effective use of space. School facilities identified as ILEs commonly feature agile and flexible learning spaces, integrated technologies and purposeful furniture that can support a variety of teaching and learning modalities. The problem addressed by P2P is that the architectural designs of ILEs commonly imply a commensurate innovative use of such environments, towards meeting a pedagogical vision for student-centred learning and the development of "twenty-first century skills" (Fullan, Langworthy, & Barber, 2014). P2P implements a school-based strategy to assist teachers in developing the skills and knowledge required to use ILEs more effectively as a pedagogical tool. The programme also seeks to investigate the processes that schools undertake to design, build, engage and fully utilise the affordances these spaces provide.

P2P exemplifies the concept of practitioner-led research that seeks to directly impact the quality of teaching with a view to evaluation and improvement (Campbell & McNamara, 2009). It is a powerful means of investigating educational practices in order to reconceptualise and transform teaching practices (Campbell & Groundwater-Smith, 2010; Somekh, 2006). Working alongside small "spatial learning teams" comprising staff in each participating school, researchers from one university's cross-disciplinary research hub engage in deep conversations with teachers and school leaders in order to: (1) identify relevant questions within each school's unique context; (2) devise school-based data collection methods; and (3) utilise the findings to implement intervention strategies or an improvement programme that address the questions raised within the umbrella of the project's key objective. The focus for this suite of projects is developing teachers' spatial competencies (Lackney, 2008), including their capacity to take advantage of the affordances (Gibson, 1977) of ILEs for contemporary teaching and learning.

Taking our lead from Kemmis's (2001) work on teachers as practitioner-researchers, we report here on the progress of P2P university-school partnerships. These partnerships were established to promote what Kemmis (2001) describes as the "self-education of teachers and school communities who want to raise and answer the questions they regard as most pressing in their own situations" (p. 17). Teachers are supported in developing the skills of research through research expertise provided by university academics (Dimmock, 2012; Swaffield & MacBeath, 2005) to respond to the overarching research question: *How can school leaders and teachers effectively engage in the design, development and use of innovative learning environments?*

Method

The research programme has a duration of three years and is driven by the needs of each individual participating school. The programme works with a small "spatial learning team" (up to six members) of highly motivated teachers within each school. Each spatial learning team works under the direct supervision of an academic expert. The academic experts act as facilitators, research experts and critical friends throughout the three-year programme. These teacher-researchers contribute to the shared research question through sub-questions designed and approved by both the Responsible Researcher and the Human Ethics Advisory Group at the University.

Broadly, three phases inform the methodology and methods used at each school. Each school negotiates an individual schedule within a three-year

structure to suit their particular needs, including sampling, data collection and data analysis strategies.

Phase 1 uses an exploratory design to investigate what is known, what gaps exist and what work needs to be done in each school. The overarching broad research question is: "What is the school's current knowledge and practice regarding ILEs?" It begins with the development of a three-year school research plan for P2P. The focus depends on the needs of the school, as determined during the development of the research plan. Year 1 focuses on empowering staff to envisage good teaching and learning practices in their learning spaces.

Phase 2 focuses mostly on staff and student transitions into the spaces. The research question driving this focus is: "How can we assist teachers and students in using spatial competencies to make their good teaching and learning even better?" To do this, the Spatial Learning Team (SLT) together with its P2P academic review available strategies (Appendix 1) for their perceived "best fit" with the school's needs. The team then work with the academic's advice and expertise to develop their research skills and knowledge in the implementation of these strategies. The spatial learning team next begin to work with a selection of their school's staff to develop their skills and expertise in spatial awareness and understanding. In Year 2, the spatial learning team also begin to formally document their activities using, where possible, data that can be disseminated to the school community and, where relevant, used for Year 3 evaluation.

Phase 3 continues phase 2 activities, but with two additional foci. The first concerns evaluation. For this focus, the guiding research question is: "How can we gather evidence from the P2P project?" The second focus concerns dissemination, with the guiding question being: "How do we ensure the 'good ILE practices' become long-term practice in our school?" To meet both these goals, the Spatial Learning Team creates "outputs" in light of broader school practices. In the final year of the P2P project, the SLTs present their findings to their school community and other educational and academic audiences. A significant output of this stage is each school's participation in an academic symposium held at the university and open to academics and school staff from across the state.

Each school has developed a unique research programme relevant to its own context. However, all of the participants engage in several core learning and development events that seek to improve the teachers' research and spatial learning capacities:

- Two one-day research workshops each year at the University of Melbourne (attended by one or two representatives from each school); and
- Two school visits by academic experts each year.

The two-day workshops focus on developing specific research skills (such as qualitative, quantitative and mixed methods research) and engage participants in a range of research tools developed by the academics. These tools can be reviewed in Appendix 1.

As each school works with a research-trained academic leader, they have learned to make informed decisions about methods that suit their research questions. Table 1 gives an overview of the approaches, methods and participant numbers at each school.

Table 1
Schools' Methodological Approaches

School	Research Approach	Method/s	Participant Numbers
Archer Girls' College	Qualitative	Pedagogical encounter mapping, focus groups, collaborative workshops	20–25 teachers from across the school
Carbine College	A quasi-experimental design using mixed-methods, involving a non-equivalent control and treatment groups completing a pre- and post-test, where the treatment group is the only group that received intervention(s).	Pre- and post-surveys of teachers Pre- and post-surveys of students Observations x 9 per class (in between 2 interventions)	Two team-taught Year 12 classes, one control and one intervention
Coolbardi Primary School	A-B-A withdrawal design. Quant/qual mixed method (quasi experimental) repeated measures across three school terms.	Interviews Observation metric (teacher practice, LEASA tool) Repeated measures survey Student photo elicitation	Grades 3-6, 5 classes = approx. 135 students, 5 teachers.
Sub Zero College	Qualitative	Pedagogical encounter mapping, focus groups, collaborative workshops	20–25 teachers from across the school
Sunshine School	Repeated measures mixed method design.	Assisted repeated measures survey. (Spatial use mapping; Likert measures for purpose and perception of learning impact)	Years 5, 8 and 11. Total of 108 participants.
Phar Lap Primary School	A quasi-experimental design using mixed-methods, involving a non-equivalent control and treatment groups completing a pre- and post-test, where the treatment group is the only group that received intervention(s)	Pre and post-surveys of teachers Observations x 9 per class (in between 2 interventions)	Two Year 5 classes with one acting as a control class

School	Research Approach	Method/s	Participant Numbers
Willow College	Quasi-experimental, (control/ intervention) repeated measures single-subject research design.	Teacher observation metric (Byers tool) Student repeated measures survey Teacher PD (intervention)	Experimental group; Grade 7 (English and Science) – 4 classes, 4 teachers Control group; Grade 7 (English and Science) – 4 classes, 4 teachers Total of approximately 210 participants
Winx College	A single-subject research design using mixed-methods, in which subjects (teachers/ students) serve as his/her control	Pre- and post-surveys of teachers Pre- and post-surveys of students Observations x 9 per class (in between 2 interventions)	Year 9 (1 teacher and 25 students) and Year 12 (1 teacher and 13 students) in two prototype classrooms.

The eight participating schools are located across Australia and New Zealand and include schools from government, religious and independent systems, representing both primary and secondary schools. Of the eight schools, one school is beginning their second year of the P2P program, and one school completed the programme in 2019. The remaining six schools will complete their three-year programme in 2020.

Findings

The following findings have been ascertained based on qualitative reflections made by each academic expert, gathered through their work with each school over one year. These reflections are based on the experiences, opinions, thought and feelings of the academic experts throughout the research programme. It is an acknowledged part of the research process implemented by keeping reflective journals, thus demonstrating the project's focus on the research process. The findings also show how reflective journals can be used in engaging with the notion of creating transparency in the research process and in exploring the impact of critical self-reflection on research design.

Due to the small number of academics involved in the research, the reflections have been amalgamated and deidentified. It was not appropriate to include any direct quotes or attributions in the present context, as they would provide identifiable features of schools and teachers. The following sections present a broad discussion of similarities across the school contexts. Three main themes emerged as a result of the analysis of the reflections.

While findings reveal that progress is made at a different pace within each school regardless of their stage in the three-year programme, three main themes emerged with regard to teachers as embedded practitioner-researchers:

1. The leadership of embedded research in schools;
2. The significance of teacher research to changing practice; and,
3. Challenges and changing priorities.

Each of these themes will be explored through the analysis of journal data.

The leadership of embedded research in schools

The leadership structure of the projects at each school had an impact on the success and perceived sustainability of the project. For some schools, successful leadership meant support from the senior leadership of the school or a single "champion" to lead and promote the project. In others, the spatial learning teams were seen as a group of leading teachers engaged in evaluation and improvements.

The member of the four-person spatial learning team at Phar Lap had multiple roles depending on the phase of the project, either as participants in different stages of the research or as researchers involved in collecting and analysing data. All members were, however, engaged in the dissemination of research findings, as well as in the scaling up of successful and practicable strategies throughout the school. This generally occurred throughout the year through dedicated workshops for groups of teachers, as well as at the school-wide biannual professional development days. The success of the programme in this school is attributed to the role of the assistant principal within the spatial learning team. The assistant principal was seen as a champion who was willing to listen to new ideas (not just imposing them) and to take risks to move on from the way things have always been done. Having a positive perception of change enabled the assistant principal to harness teachers' motivation and positivity, and use it to try and help bring along those who felt less positive.

The principal at Carbine demonstrated a high level of commitment to P2P and engaged frequently with the researchers to ensure they were on track and managing data according to ethics protocols and in line with the school's overall vision. The spatial learning team have consistently communicated the value of evidence-based practice in their school, and participants in the school have conveyed the benefits of observation data in reflecting on their practices. Open communication has been a strength in this case study to date, with both the spatial learning team and participants clearly articulating the importance of

the research in improving their practice as individuals and within their learning community.

In other schools, a strong leader combined with a committed group of teachers was seen as a factor in successful changes in the school. At Coolbardi, for instance, an adjustment in the leadership approach was needed early on in the project. The spatial learning team who initially drove the project were all senior staff; when they commenced data collection, they realised they needed support to implement the rigorous research design on top of their day-to-day school administration, and consequently released one of their teachers for one day per week to lead and manage data collection. The spatial learning team explained that this arrangement was to support the development of teacher leaders in the school, and also recognised that having one teacher leading observations provided a level of consistency that is important to the repeated-measures design of their project.

Winx has an influential institutional culture of developing practitioner-led research. The model of practitioner-research as part of the P2P programme focused predominantly on one lead teacher as the practitioner-researcher who conducted the bulk of the observations, obtained survey data from teachers and students, and co-designed interventions with other teachers. The lead teacher worked closely with the university academic to ensure findings and outcomes were developed and reported back in a coherent way for the school community. The lead teacher was also the bridge to the communities of practice within the school, which led multiple projects focusing on the school priorities for the year. In this way, findings and outcomes from the programme could be fed back into the school community systematically.

Strong leadership is seen as necessary to successfully engage teachers in embedded research within schools. The role of a school leader or lead teacher in nurturing, developing and setting the culture and structures that engender practitioner-led research is well documented (Frost, 2007; Frost & Harris, 2003; Frost & Roberts, 2004; Hargreaves, 1996; Wilkins, 2003). A powerful way to promote such a culture is the school leader carrying out research and modelling the process of learning and enquiring (Godfrey, 2016), as in the case of Phar Lap and Coolbardi. As Godfrey (2016) argued,

> the most research-engaged schools had very highly identified leadership support for engagement in (doing), and with (accessing and using) research; very strong support systems, including mentoring arrangements and training in research skills; a very high amount of research activity, involving a significant proportion of staff (and sometimes involving

> students); plentiful examples of impact within and beyond the school of the school's research efforts and a strong and well-understood research structure. (emphasis in original, p. 314).

Teacher-led development, as in the case of Coolbardi and Winx, sees research efforts as being inextricably linked with the practice of distributed leadership (Frost, 2007). Teacher-led development, often facilitated by involvement in external programmes such as P2P, are seen to empower teachers and contribute to school improvement, including the spreading of good practice and initiatives generated by teachers (Muijs & Harris, 2006). For this to be successful, however, there needs to be a culture of trust and support (ibid.) and structures that afford time, resources and space for dissemination and collaboration of research findings (Godfrey, 2016).

The significance of teacher research to changing practice

A further emerging theme from schools in the P2P programme is that teachers are changing their practice in the classroom after participating in teacher research at their school. At Carbine College, findings indicate that teachers have moved away from seeing research as something "done to them" and demonstrated feelings of empowerment from leading research and analysing the data.

Carbine has had staff challenges during the P2P project: the lead teacher and principal involved left about 6 months and 18 months, respectively, into the commencement of the programme. The university academic had been working with two teachers who were engaged in participatory action research in the first phase of the programme. This collective and self-reflective inquiry enabled the teacher-researchers to understand and improve upon the practices in which they participate and the situations in which they find themselves. In phase 2 of the programme, they were involved in practitioner-led research in an entirely different classroom, conducting interventions, collecting and analysing data, as well as conducting professional development for other teachers.

Despite the challenges faced by the school, it was gratifying to see that the role of the two teachers evolved from being "objects of inquiry" to developing a more sophisticated knowledge and understanding of the nature and purpose of research, one associated with elements of data collection, gathering feedback, collaboration and team learning, and self-reflection. One of the outcomes of the second phase of the research was a professional development video developed by the two teachers on strategies for team-teaching. The video was used as part

of a professional development tool for the wider school community, which led to further strategies being scaled up at the level of the whole school.

At Willow, the critical issue was how teachers with proven, well-established teaching practices could be challenged to utilise the more student-centred approaches that the new ILE designs were intended to provide. The conceptual approach was one of "osmosis": developing such practices with some teachers and allowing these to permeate the teaching culture in the school over time. It was recognised that large-scale changes in something as personal as teachers' pedagogies was unlikely; instead, modelling alternative practices would allow for gradual change. Some schools, such as Archer and Winx, used communities of practices to exchange ideas and share resources. In most cases, resources were also shared through an online portal accessible to other teachers. The resources could then be used and modified in different classroom contexts.

While many teachers see professional development as "an empty exercise in compliance" (Calvert, 2016, p. 2), the teachers at Carbine acted purposefully and constructively to direct their professional growth and contribute to the growth of their colleagues. The P2P programme supported the two teachers in developing their agency for continued learning and in transforming professional learning opportunities for the whole school community relevant to their school contexts (Mewborn, 2003; Wilson & Berne, 1999).

Roesken-Winter, Hoyles and Blömeke (2015) also argued that scaling up involves more than just a quantitative increase in the number of participating teachers. As is the case with Willow, it is also associated with qualitative changes in the responsibilities, norms and practices that bring scaling up into a dynamic and co-dependent relationship with sustainability. The recontextualisation of resources, disseminated physically or electronically, illustrates the notion of "spread" that Coburn (2003) argues is essential for scaling up education reforms.

Challenges and changing priorities

Ongoing challenges, such as time constraints and building delays, as well as changing priorities – as a result of changing leadership, for instance – was an emerging theme that impacted the P2P programme in all of the schools. While some of these challenges were similar, they affected each school differently.

While Winx valued teacher development, the school also adopted a top-down approach that was utilised to focus solely on school improvement. This meant that some teachers did not see the value of practitioner research as effecting change for social good. Furthermore, because the school engaged one teacher to lead the P2P programme within the school, many other teachers often

acted as data collection points, rather than functioning as full participating members of the research process. Consequently, the uptake of the programme across the school has been quite variable, not only between campuses (junior, middle and high school campuses), but also across teachers and disciplines.

The research programme at Archer involved working with teachers to identify: a) valued "learning encounters", and b) effective "pedagogical routines". While perceived by some of those involved as a slow process, the collection of "learning encounter" data in the form of hand-drawn network diagrams, and the analysis of the relative value of different forms of "learning encounters" as a group process, generated significant and sometimes profound conversations about what "good" teaching and learning should look like, including across different curriculum domains. Intriguingly, teachers of seemingly unrelated subjects, such as physical education and LOTE, have found inspiration in the types of learning encounters commonly recoded and considered valued in each other's classes, and have already begun to modify their pedagogical routines in response to the research undertaken.

At Archer, there appeared to be a disconnect between teachers' expectations of research and the speed at which change should occur, on the one hand, and the academic's understanding of the need for a rigorous research methodology, on the other. The potential challenge with this disconnect is that change may be slower to enact across the school. Teachers' enthusiasm may diminish before significant changes are in place. Ensuring that the research was understood and that the findings were adopted was a challenge that was at least partially overcome through interdisciplinary learning and connections between faculties.

At Sub Zero, ongoing changes, innovations and new buildings have led to a fast-paced, frequently changing project. The project was slow to implement: term-by-term changes to the teaching programme occasionally made parts of the research design redundant, necessitating a redesign of the research protocol. However, the enthusiastic staff have maintained the steady collection of data during these changes. Similarly, the experience at Sunshine emphasised the iterative, ephemeral nature of applied design in such spaces, as well as the need for research flexibility to ensure its outputs have real value for the school. This school, however, has managed to work through the challenges of changing goals by maintaining a core group of leaders dedicated to increasing the spatial knowledge of their peers. Again, leadership appeared significant in ensuring that teacher research is successful in the school.

The ongoing changing of school contexts meant that the P2P project needed to be agile and responsive. The success of the programme could be

attributed to the way it offered teachers and schools a principled and flexible repertoire of strategies, rather than prescribed methods and mandated resources (Goos, Bennison & Proffitt-White, 2018). Careful consideration needed to be given to the complexity of the individual research programmes and the expectations of the school. Contingency plans were also necessary to enable quick changes and amendments to research protocols. Incorporating flexibility and agility into the research programmes also meant that research could be integrated into the teaching practices of teachers on a sustainable basis (Elliot, 2009).

Implications and Conclusions

Although not yet complete, the P2P programme has so far offered a rare opportunity to investigate practitioner-led research developed within a structured university-school collaboration that takes into account differing school contexts. It has provided some crucial insights into the supports that schools should develop to enable teachers to develop their pedagogical practice through research.

These insights include the need for teacher-focused research that meets the changing needs of teachers in the school. A flexible approach to teacher-research is seen as a necessary aspect of successful collaboration in this project.

The P2P programme also goes some way towards addressing the call by Kemmis (2001) regarding the self-education of teachers and school communities, as well as the call by Beswick, Anderson and Hurst (2016) for researchers to devote more attention to issues of the scale and sustainability of professional learning initiatives. There are clear implications that teachers need to have time and resources accorded to them if they are to make sense of data, explore research designs and develop findings from their work. Without time and resources, the project risks failing, unless school leaders are open to reassessing the workload and resourcing of staff, as was the case at the Coolbardi Primary School. Pre-emptive planning for increased access to dedicated time, resources or staff appears to be necessary for success.

Although the study was exploratory and thus limited in the claims that can be made about teacher change, particularly in the context of the use of innovative learning environments, two points of departure provide future inquiries for practitioner-led research.

First, how do you leverage more effectively the academic-teacher relationship to enhance practitioner-led research? Teachers and school leaders need to make the most of the variety of expertise that exists with academic staff. To ensure that teachers explore what is not already known, academics

need to engage closely with the school, their priorities and the outcomes they are seeking at critical junctures of the programme. Such knowledge could include supporting the development of specific research skills, acquiring a deeper understanding of the unique context of each school, and encouraging teacher and school leaders to drive and communicate the research across the school.

Second, an essential element of the P2P programme is the provision of structured time and support for "doing" research. How can school leaders be persuaded that this is an important investment? Particularly as challenges abound and priorities change, how can we ensure that such teacher-led research continues to thrive and be sustained over time? One way to do this is to ensure that positive outcomes of such programmes are promulgated widely, not only among practitioners and academics, but among policymakers who are responsible for education and schooling in the twenty-first century. An influential, research-informed profession would go a long way in reinvigorating the teaching profession and the transformation of educational practices.

Acknowledgements

We thank the Spatial Learning Teams at each of the eight Plans to Pedagogy schools for their contributions to this research. We also acknowledge the contributions of our industry partner.

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Appendix 1: Overview of tools used in the P2P program

NB: the tools listed below are proprietary and the intellectual property of © LEaRN University of Melbourne.

LEaRN tools	Focus	Method	Analysis	Outcome	Output
Archipelago of Possibilities©	Allows teachers to identify and articulate "preferred" pedagogies, steps to achieve these, and how learning space characteristics can assist.	Design-thinking approach, using small group, facilitated interactive board activities.	Focus group discussion only; cumulative qualitative analysis possible, if required.	An agenda for personal change, and insights how spatial affordances can assist this.	Personalised pedagogy development artifacts. "Storyboard" mapping of student/teacher use of school's new spaces
Future Curriculum Profiling Tool (FCP)©	Challenges teachers to consider long term (10–20 year) changes in curriculum, and how this impacts the design of new spaces	Double-interview, checklist approach.	Text-mining analysis, combined with Sentiment and Sentience analysis.	Data to support "future proof" design briefs, the development of long-term curriculum planning, and identification of cross-disciplinary approaches to learning.	Written report. Focus groups for "visionary" curriculum planning.
The LTPS© tool	Measures the impact of learning environments on variables such as student engagement, teacher performance, student learning outcomes.	Single-subject research design (repeated measures). T tests, LME,	Inferential (RM-ANOVA) analysis; correlation analysis; visual graphic analysis; some qualitative analysis	Statistical evidence of impact of various spatial typologies on variables such as those listed in "Focus"	Various. Graphic data analysis, written reports,
Learn Evaluation Tool (Module 3)©	Identifies existing and desired characteristics of good building designs. Assists in the development of an educational brief for design purposes.	Survey, focus groups, expert elicitation.	Non-inferential analysis, qualitative analysis.	A bi-focal (site specific, and comparative analysis to "like schools") evaluation of "what works", "what needs to be changed".	Written report.
Byers Observational Metric©	Immediate feedback of data concerning teaching and learning practices in ILEs. Done across time, this evaluation constitutes professional development for teachers.	Repeated measurement tablet-based observations	Non-inferential analysis, visual graphic analysis	Modelling of particular teachers' practices in particular learning environments. Similarly, evaluation of student learning styles, movement and behaviour.	Visual data outputs, focus and individual conversations concerning classroom practices and use of ILE affordances.
Acoustic measurement and treatment tool (under negotiation, Marshall Day + ILETC)	Measures reverberation and decibel levels in specific learning environments and assists development of remedial treatments.	Standard industry	Standard industry	Increased teacher understanding of the nature of acoustics, and how to manipulate spatial affordances to improve this.	Standard industry report specific to tested spaces.

doi: 10.26529/cepsj.777

Using Remap RT (Reading – Concept Mapping – Reciprocal Teaching) Learning Model to Improve Low-Ability Students' Achievement in Biology

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The main aim of this study was to investigate the effects of the Remap RT (Reading – Concept Mapping – Reciprocal Teaching) learning model on low-ability students' achievement in biology. This quasi-experimental research made use of a pre-test-post-test non-equivalent control group design. The population of this research was 125 tenth-grade students from the Natural Science classes aged around 16 years old. Four classes were randomly selected as the samples, and they were divided into two groups: two classes belonged to the high ability classes, and the other two were categorised into the low ability groups. The students' achievement was measured using an essay test. The results of the test were analysed using ANCOVA. The findings indicated that 1) students who learned using Remap RT had better academic achievement in biology than students who learned using a conventional method; 2) students with high academic ability had better academic achievement than students with low academic achievement; and 3) low-ability students who learned using Remap RT and high-ability students who learned using a conventional method had equal academic achievement. The results of the research suggest that Remap RT was effective in improving low-ability students' achievement in biology.

Keywords: students' achievement, academic ability, reading ability, concept map, cooperative learning, Remap RT

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Uporaba učnega modela Remap RT (branje – zaznavanje konceptov – vzajemno poučevanje) za izboljšanje uspešnosti dijakov z nizkimi dosežki v biologiji

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Glavni cilj raziskave je bil preučiti učinke učnega modela Remap RT (branje – oblikovanje konceptov – vzajemno poučevanje) na uspehe dijakov z nizkimi dosežki v biologiji. Ta kvazieksperimentalna raziskava je uporabila zasnovo s predpreskusom in popreskusom iz neekvivalentne kontrolne skupine. V raziskavi je sodelovalo 125 dijakov desetega razreda iz naravoslovnih razredov, starih približno 16 let. Štirje razredi so bili naključno izbrani v vzorec in razdeljeni v dve skupini: dva razreda sta sodila v skupino z visokimi dosežki, dva pa v skupino z nizkimi dosežki. Dosežki dijakov so bili testirani z vprašanjem esejskega tipa. Rezultati testa so bili analizirani z uporabo ANCOVA. Ugotovitve so pokazale, da so: 1) dijaki, ki so se učili z uporabo Remap RT, dosegli boljše akademske dosežke v biologiji kot tisti, ki so se učili s konvencionalno metodo; 2) dijaki z visokimi dosežki na akademskem področju uspešnejši kot dijaki z nizkimi dosežki; 3) dijaki z nizkimi dosežki, ki so se učili z uporabo Remap RT, in dijaki z visokimi dosežki, ki so se učili s konvencionalno metodo, imeli enake akademske dosežke. Izsledki raziskave kažejo, da je bil model Remap RT učinkovit pri izboljšanju dosežkov dijakov z nizkimi dosežki v biologiji.

Ključne besede: dosežki dijakov, akademski dosežki, sposobnost branja, konceptni zemljevid ali mreža, sodelovalno učenje, Remap RT

Introduction

Due to its importance, students' academic achievement is a constant subject of discussion. It reflects students' mastery of essential skills and also indicates the occurrence of learning. Academic achievement refers to the level of students' academic performance (Shamshuddin, 2007). It is not only related to the knowledge but also the skills that the students have developed after attending a school subject (Ganai & Maqbool, 2016). Niemi (1999) defines academic achievement as the mastery of major concepts and principles, important facts and propositions, skills, strategic knowledge and integration of knowledge. It also refers to students' gained levels in all academic content areas or the status of subject-matter knowledge, understanding, and skills in a determined period. It also portrays students' ability in completing tasks and studies (Kadian, 2016). Students' academic achievement is the result of an educational process that describes the extent to which students, teachers, or institutions achieve their educational goals (Kulkarni, 2016).

Many factors can affect students' achievement. They include instructional strategy or learning model, learning disabilities, demographic factors, home life, and many others that interact with one another. Among the most critical factors that can influence students' achievement (Marzano, 2003), the instructional strategy or learning model should be implemented appropriately. Teachers need to have a sole commitment to decide how to utilise their resources and choose strategies that will promote students' competence (McLeod, Fisher, & Hoover, 2003). How teachers approach their students and how they use different learning strategies have been proven to significantly influence their students' academic achievement (Bolkan & Goodboy, 2009). Studies indicate that teachers' assistance is a crucial factor influencing students' achievement. Teachers can implement learning strategies to guide learning activities and improve students' motivation. In addition to that, students' behaviours can be boosted by explicitly establishing conduct rules in the classroom (Vermunt & Verloop, 1999). Another factor that contributes to students' academic achievement is their academic ability (Busato, Prins, Elshout, & Hamaker, 2000; Veas, Gilar, & Minano, 2016; Veenman & Beishuizen, 2004; Veenman & Spaans, 2005). The higher the academic ability students possess, the faster they learn. Students' high academic ability reflects their good long-term memory and academic achievement. In other words, students with high academic ability are more likely to achieve better than students with low academic ability (Deka, 1993). Diaz (2003) considered low academic ability to be a situation in which a student cannot achieve his/her achievement standard, resulting in an altered personality that affects all other aspects of life. Low-ability

students can be described as students whose academic achievement falls below the desired standard.

In general, the distribution of students' academic ability in Indonesian schools remains uneven (Prayitno, Corebima, Susilo, Zubaidah, & Ramli, 2017; Yusnaeni, Corebima, Susilo, & Zubaidah, 2017). This phenomenon occurs due to the new admission system, which allows students' selection based on the Minimum Passing Level of the National Exam (MPL NE), which are the total scores that the students achieved in the final exam on the previous level, as one of the requirements for admission to school at the next level. This system leads to the fact that some schools are composed of low ability or high-ability students only, not a mixture of both (Kurniawati, 2016; Mahanal, Tendrita, Ramadhan, Ismirawati, & Zubaidah, 2017; Ramadhan, 2017; Rosyida, 2016; Sholihah, 2016; Tendrita, 2017).

The emergence of schools that are composed solely of low academic ability students has become a problem in Indonesia. As explained by Deka (1993), low academic ability students will face more difficulties in obtaining good achievement compared to high academic ability students. Therefore, extra efforts are required to assist them in achieving better, one of which is to implement appropriate instructional strategies or learning models. Jacob and Lefgren (2004) found a positive correlation between effective learning and academic achievement. Similarly, Adediwura and Tayo (2007) suggested that effective learning is a significant predictor of students' academic achievement. Akiri and Ugborugbo (2009) also showed that effective learning could produce students who have better performance.

The low academic ability students are expected to be able to obtain equal or almost equal achievement of the high-ability students in a variety of subjects, including biology, which consists of a broad range of material lessons through which students can learn about all living things and their environment. 'Monera' (a kingdom that contains unicellular organisms with a prokaryotic cell organisation, having no nuclear membrane) and 'Protist' (any eukaryotic organism that is not an animal, plant, or fungus) are topics in biology that are considered quite complex for students (Prihartiningsih, Zubaidah, & Kusairi, 2016). Both are difficult to distinguish (Siska, Ardi, & Risdawati, 2016) because the two of them cannot be observed directly with naked eyes. There are many Latin terms and abstract concepts discussed within the topics. As a result, it is difficult for students to learn the topics, and it is more likely that the students will fail to achieve good scores on the exam (Suparoh, 2010).

Even though some biology materials are applicable in everyday life, most of them are, in fact, studied through texts. Students need to read many

texts to be able to understand a phenomenon being learned and observed. In addition, varied biology materials (Graesser, McNamara, & Louwerse, 2003) require students to read and develop inference skills to connect concepts in the texts (Hannon & Daneman, 2001). It is evident that this reading ability will assist the students in learning (Ozuru, Dempsey, & McNamara, 2009).

Reading involves active visualisation that contributes to students' ability to memorise a text and understand it and significantly contribute to their achievement as a result (Smajdek & Selan, 2016). Therefore, reading constitutes one of the main activities in a biology classroom, particularly, and all school subjects in general (Kerneza & Kosir, 2016). However, in reality, Indonesian students still have low interest in reading (Hasan, Zubaidah, & Mahanal, 2014; Pangestuti, 2014; Prasmala, Zubaidah, & Mahanal, 2014). According to the Progress in International Reading Literacy Study (PIRLS) in 2011, Indonesia ranked fourth from the bottom on Programme for International Student Assessment (PISA). In 2012, Indonesia ranked second from the bottom (Mullis, 2012).

To overcome these problems, students need to develop a habit of reading materials before the lesson is started. Teachers, in contrast, may evaluate the students' understanding by asking them to create a concept map. Novak (2002) argues that a concept map is an efficient tool that can be used to represent students' knowledge of a concept and specific items arranged in a meaningful hierarchical structure. Through concept mapping, students are able to comprehend knowledge and changes in concepts that have been studied (Daley, 2010). Concept mapping is thus expected to make students remember a number of interrelated concepts they have learned from reading (Pangestuti, Susilo, & Zubaidah, 2014).

Another way to improve students' achievement is to implement cooperative learning in the classroom. Cooperative learning is a situation in which learning occurs between two or more students who work together to complete a task (Siegel, 2005). The advantages of this learning model are to create positive dependency, interaction, and group processing among students and to promote students' individual accountability and social skills (Adams, 2013). Cooperative learning can also improve students' achievement (Alabekee, Samuel, & Osaat, 2015; Buchs, Filippou, Pulfery, & Volpe, 2017; Chen & Liu, 2017; Gull & Shehzad, 2015; Parveen, 2012; Tran, 2014). Cooperative learning facilitates students to do four main activities: summarising, composing questions, predicting, and clarifying answers (Colombo, 2011) and can encourage students to promote social interaction among them, which may motivate them (McKenna, 2002). Cooperative learning is also effective in improving students' reading comprehension and retention (Glynn, Wearmouth, & Berryman, 2005; Padma, 2008).

Reading activity, concept mapping, and cooperative learning are the components of a learning model named Remap Coople, an acronym for Reading - Concept Mapping - Cooperative Learning (Mahanal, Zubaidah, Bahri, & Dinnurriya, 2016; Pangestuti, Mistianah, Corebima, & Zubaidah, 2015; Zubaidah, 2014; Zubaidah, Corebima, Mahanal, & Mistianah, 2018). Each of these components will be explained below.

Reading Activity

Reading in the Remap Coople learning model constitutes the core activity that should be performed by students before meeting in the classroom. The students have to read materials at home, as suggested by the teacher. The students are allowed to select their own time and comfortable way to read, so their knowledge acquisition can be optimal. The teacher only determines themes to read, not the reading sources. The students can find their own reading resources, perhaps scientific books, newspapers articles, comic strips, general knowledge books, and many others. The students are also able to explore various kinds of texts to enrich their knowledge related to materials that are going to be learned in the classroom.

Özbay (2006) explains that reading, in general, can be defined as a method of obtaining new information. Reading can also reflect an individual's ability. It is a mental process resulting from readers' responses to the text (Kardeniz, 2015). Reading is not a single process since a complex cognitive process is occurring inside the readers' mind, including linguistic processes, readers' background knowledge, interpreting, and metacognitive processes (Davies, 1997; Mahakulkar & Wanjari, 2013; Wanjari & Mahakulkar, 2011). Reading stimulates students' thinking process through a set of complex mental activities.

Through reading, students will obtain beneficial knowledge which can improve their logic, social, and emotional growth. Patterson (2016, p. 2) cited the definition of reading from The Michigan Board of Education as 'the process of constructing meaning through the dynamic interaction among the reader's existing knowledge, the information suggested by the written language, and the context of the reading situation'. Akanda, Hoq, and Hasan (2013, p. 6) explain that 'reading as an art provides a human being with the foundation upon which to erect his or her understanding of life as well as the elements with which to build his or her worldview'. Reading also expands an individual's perspective which, as a result, forms his/her new thinking framework. In addition to that, Ögeyik and Akyay (2009, p. 72) emphasise that 'reading is a significant process in ones' academic life which leads towards knowledge. It guides individuals to develop creativity and critical thinking.'

Allington (1984); Chall (2000); Brown, Palincsar, and Purcell (1986) state that students who are not used to reading will frequently face difficulties in understanding texts and have bad scores in all subjects. Lack of reading leads students to the inability to develop reading strategies, which are necessary for all academic fields. Cunningham and Stanovich (1998) state that students who know how to read will read a lot and perform better in various subjects. Therefore, despite the good quality of the new curriculum established by the government, if students are not used to reading, they will still have poor performance in all academic fields. In this situation, students need continuous reading training through which they can develop their reading skills. Schools or teachers are supposed to put forward reading activity in the learning process.

Learning that requires students to read will result in a beneficial knowledge acquisition process (Ogeyik & Akyay, 2009; Ozbay, 2006) and an improvement in students' thinking skills (Zubaidah, 2014). Students who have good thinking skills and abundant knowledge will achieve more because they can read well. They are also able to relate the knowledge with their experiences (El Koumy, 2006). Reading will provide students with prior knowledge that will determine how well they make connections between new concepts learned. It encourages them to assimilate and accommodate the knowledge they have so that they can understand learning materials better and are able to construct knowledge related to it. Students' good understanding will help them to obtain good learning outcomes.

Concept Mapping

The next step of the Remap Coople learning model is concept mapping. Students are required to make a concept map based on what they have read. Since reading activity is performed as homework, this concept map should also be prepared before the students come to the classroom. However, in certain circumstances, the teacher may ask students to do this activity after the lesson ends. Students need to be creative because they are given the freedom to choose their concept mapping style out of variously available concept mapping models or styles (Zubaidah, Fuad, Mahanal, & Suarsini, 2017). The concept map that serves as a summary of the lesson helps students organise their thoughts after reading. Students who manage to generate a concept map will be better at identifying one concept after another, which they obtain from the reading text (Nesbit & Adesope, 2006; Patrick, 2011).

Concept mapping is a tool or a way to arrange knowledge (Novak, 2008). It can be used to describe concepts that students understand and specific items that form a meaningful hierarchical structure. Novak (2008) also suggests that

a concept map consists of concepts that are organised in circles or boxes or other shapes and connections that are shown by lines. In short, it can be said that a concept map is a picture that shows a hierarchy of concepts. A concept map can also be considered to be a graphical tool that helps students remember, understand, develop their critical thinking (Santiago, 2011), improve their metacognitive skills, indicate their ability to organise concepts and synthesize information (Vanides, Yin, Tomita, & Ruiz-Primo, 2005), and encourage students to understand and clarify the concepts (Kinchin & Hay, 2000).

Concept mapping is a way for teachers to help their students transfer their knowledge from short-term to long-term memory. Concept maps can assist students in seeing how information, such as ideas and concepts, are structured and connected (Knipper, 2003). Concept mapping is a practical method to monitor students' learning progress (Vanides et al., 2005). Patrick (2011) states that concept maps help students improve and summarise subject matters. Guastello, Beasley, and Sinatra (2000) believe that concept mapping is vital for low achievers because many of them lack prior knowledge of content topics. The implementation of concept mapping in biology has been researched and proven to improve students' higher order thinking and achievement (Antika, 2015; Dinnurriya, 2015; Hariyadi, Corebima, Zubaidah, & Ibrohim, 2018; Mahanal et al., 2016; Pangestuti, 2014; Setiawan, Zubaidah, & Mahanal, 2015). McCloughlin and Matthews (2017) also state that concept mapping plays a significant role in promoting meaningful biology learning.

Cooperative Learning and Reciprocal Teaching (RT) Model

After reading and concept mapping, students are involved in cooperative learning activities in the classroom, which creates a learning atmosphere that allows students to interact with each other in small groups to do the tasks and to achieve the same goals (Parker, 1994). The cooperative learning activities are developed based on information-sharing in groups, which makes students responsible for their own learning and improves other students' motivation (Kagan, 1994). Johnson and Johnson (1999) state that cooperative learning facilitates students learning together in small heterogeneous groups to solve problems. Slavin (2005) also emphasises that cooperative learning makes students help each other to understand learning materials in groups. Therefore, it can be concluded that cooperative learning is a learning model that allows students from different abilities and background to work together in small groups so that they can help each other to achieve their shared goals.

The cooperative learning model selected in this research is reciprocal teaching (RT), which has been developed to improve students' reading ability and provide interactive learning. According to Palincsar and Brown (1984), RT activities include summarising (self-review), questioning, clarifying, and predicting. RT can be implemented for three purposes (McAllum, 2014). *First*, it is a framework for explicit instruction, which provides a framework for clear and detailed learning that does not confuse students. To achieve this purpose, the teacher uses RT to overcome student problems, such as low interest in reading. The teacher, together with the students, will predict, clarify, ask about, and summarise reading texts. *Second*, it is a process for interactive engagement, which involves students in learning interactively. Therefore, the teacher and students need to create a discourse that empowers the students. RT, in this case, has a positive effect on students' reading ability, content acquisition, and motivation. The *third* purpose is to provide an inclusive practice. RT is intentionally designed as a learning model that helps problematic students to understand texts. RT is also able to develop students' self-regulatory skills so that they can participate well in learning and be independent.

Some research findings have proven that RT combined with other models is also effective in improving students' achievement and reducing the gap between high and low-ability students. Suratno (2010) integrated RT and jigsaw learning models in senior high school, and the results show that the combination of these models can improve students' achievement and the closer distance of students' achievement between lower and higher ability students. Efendi (2013) combined RT with Think Pair Share (TPS) models and found that the integration of both resulted in better student achievement than among the students that learned by only the RT or the TPS separately, and the most low-achieving were those taught by conventional learning. Sukardi, Susilo, and Zubaidah (2015) combined RT with concept mapping, and the results of their studies indicated that such combinations are useful in developing students' metacognitive skills and achievement in biology. Marthaliakirana (2014) integrated RT with Reading Questioning Answering models and demonstrated that these combinations improve students' metacognitive ability, achievement, and retention. Warouw (2009) combined RT with Cooperative Script and found that it not only improved students' metacognitive skills but also has a positive effect on their retention.

Some research reveals that the implementation of the Remap Coople learning model has the potential to improve students' achievement (e.g., Hasan et al., 2014; Dinnurriya, 2015; Mistianah, Corebima, & Zubaidah, 2015; Tendrita, Mahanal, & Zubaidah, 2017). Therefore, in this study, RT is combined with reading and concept mapping, as described previously.

Method

Research Objectives

The current study aimed to investigate: 1) the effects of the Remap RT learning model on students' achievement; 2) the effects of students' academic ability on students' achievement; and 3) the effects of the interaction between the Remap RT learning model with students' academic ability on students' achievement.

Research Design

The quasi-experimental research employed a pre-test-post-test non-equivalent control group design. This study was conducted from September to November 2015 in the 2015/2016 academic year on the high and low academic ability students from two public Senior High Schools (SMA) in Batu, Indonesia. Four classes participated; the first two consisted of students with low academic ability categorised into one experimental class and one control class. Similarly, the other two consisted of students with high academic ability categorised into one experimental class and one control class. The Remap RT learning model was carried out in the experimental class. The experimental groups of students were asked to read learning materials prior to the classroom meeting, compose a concept map, generate questions, predict the answers, and clarify their answers through a group discussion held in the classroom.

Meanwhile, the control classes were taught using conventional learning methods. They were asked to learn from lectures given by the teachers and students' presentations and discussions. Before and after the study, the two class groups (i.e., the experimental class and the control class) were given pre-tests and post-tests. The pre-test was administered to all participants prior to the treatment, while the post-test was conducted at the end of the experiment.

Population and Sample

The research population was all tenth graders from natural science classes of public Senior High Schools in Batu, Indonesia, aged approximately 16 years. The research samples were four classes with a total number of 125 students. A random sampling technique was employed to select the participants. Schools were selected based on the MPL NE (Minimum Passing Level of National Exam) while the levels of students' academic ability were determined by using an equality test that consisted of 20 items of general biology knowledge.

The first step to determine low and high academic classes is to conduct an equality test on the students' MPL NE. A one-way ANOVA and LSD test were then performed to decide which schools had different academic levels. The results were made as a reference to select the school samples: public senior high school (SMAN) 1 Batu (high academic) and SMAN 2 Batu (low academic). An ANOVA test was conducted to decide the number of representative classes from each school. As a result, two control classes and two experimental classes were selected.

Data collection and Data Analysis

Data obtained in this research were students' achievement on 'Monera and Protist'. The data was collected using an essay test, i.e., pre-test and post-test performed at the beginning of the study and at the end of the study, respectively. Those tests consist of 10 questions, and the scores were analysed using ANCOVA (covariate analysis) followed by a post hoc LSD (Least Significance Difference) test. Before the ANCOVA was performed, the normality and homogeneity test was carried out. The normality test used One-Sample Kolmogorov-Smirnov, and the homogeneity test used Levene's Test.

Results

The ANCOVA results are presented in Table 1, while the average score of the pre-test and the post-test, the mean scores, and the improvement of students' achievement are presented in Table 2. The results of the ANCOVA shows that the $F\text{-}_{count}$ was 104.482 with a p-value = .000, p-value <α (α = .05). This number means that there was a difference in students' achievement between those who learned using Remap RT learning model and those who learned using conventional methods. Table 2 shows that the mean score of the students' achievement in the conventional classroom (36.33) was lower than that of the Remap RT (52.72). These figures indicate that students who learned using Remap RT achieved better results than those who learned using conventional methods.

Table 1
The Results of the ANCOVA Analysis on the Effects of the Treatments on Students' Achievement in Biology

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Learning Model	14978.617(a)	4	3744.654	46.757	.000
Intercept	16794.588	1	16794.588	209.701	.000
XCLO	64.857	1	64.857	.810	.370
Model	8367.761	1	8367.761	104.482	.000
Academic level	5127.423	1	5127.423	64.022	.000
Model * Academic level	1407.155	1	1407.155	17.570	.000
Error	9610.573	120	80.088		
Total	**270767.713**	**125**			
Total Average	**24589.190**	**124**			

Table 1 shows that the value of F_{count} of the difference in students' academic ability was 64.022 with a p-value = .000, p-value <α (α = .05), which means that there was a difference in students' achievement between the high-ability students and low-ability students. Table 2 shows that the mean score of the low-ability students' achievement was 33.38, and of the high-ability students were 39.27. These figures suggest that the high-ability students had significantly higher achievement than the low-ability students did.

Table 2
The Students' Pre-test and Post-test Scores

No.	Variable	CLO		Difference	CLO-COR	Enhancement (%)
		Pre-test	Post-test			
1	Conventional	21.13	36.32	15.19	36.33	71.87
2	Remap RT	21.42	52.74	31.31	52.72	146.17
3	Low Academic Ability	22.07	38.16	16.09	38.06	72.89
4	High Academic Ability	20.48	50.90	30.42	50.99	148.48
5	Conventional LAA	20.00	33.24	13.24	33.38	66.19
6	Conventional HAA	22.26	39.39	17.13	39.27	76.98
7	Remap RT LAA	24.14	43.07	18.93	42.73	78.43
8	Remap RT HAA	18.71	62.40	43.70	62.70	233.55

Note. LAA = Low Academic Ability; HAA = High Academic Ability.

Table 1 also shows that the value of F_{count} of the interaction between the learning model and students' academic ability is 17.570 with p-value = .000, p-value <α (α = .05) which indicates that there is a difference in students' achievement due to the interaction between learning model and students' academic ability.

The results of the LSD test on the effects of the interaction between learning model and students' academic ability on students' achievement were presented in Table 3, which shows that the low-ability students in the conventional classroom had the lowest achievement, while the high-ability students in the Remap RT classroom had significantly higher biology achievement.

Table 3
The Results of the LSD Test on the Effects of the Interaction between Learning Model and Students' Academic Ability on Students' Biology Achievement

MODEL	Academic Level	GROUP	XCLO	YCLO	DIFFERENCE	CLO-COR	LSD Notation
Conventional	Low	1	1	20.00	33.24	13.24	a
Conventional	High	2	2	22.26	39.39	17.13	b
Remap RT	Low	3	3	24.14	43.07	18.93	b
Remap RT	High	4	4	18.71	62.40	43.70	c

From Table 3, it can be interpreted that the low-ability students who learned using the Remap RT learning model could catch up with other high ability groups who learned by conventional learning. Based on the gap found between the mean of pre-test and post-test scores, the low-ability students were proven to be able to achieve better than the high-ability students in the conventional classroom could. It indicated that the Remap RT learning model had great potential to increase the low-ability students' achievement.

Discussion

The Effects of Remap RT Learning Model on Students' Achievement in Biology

Research findings have revealed that students who learned using the Remap RT learning model could achieve better results than students who learned using conventional methods. This result is consistent with several studies, such as those of Efendi (2013) on RT-TPS (Reciprocal Teaching-Think Pair Share) learning, Adhani (2014) on RT learning, and Dinnurriya (2015) on

Remap NHT (Numbered Heads Together) learning, which have proven the effectiveness of the learning models in improving students' achievement.

The improvement of the students' achievement after the implementation of the Remap RT learning model was presumably induced by the learning syntax, which included reading, mapping concepts, asking questions, predicting and clarifying answers steps. Remap RT provided an opportunity for the students to construct their own knowledge. It led the students to understand learning materials better. The students' background knowledge can be interpreted as learning and experiences that a student has gained in the past (Arleen, 2010). Students gain these experiences in many ways, such as reading, watching television, taking part in a discussion, conducting experiments, viewing objects or demonstrations, field trips, among other ways. Even though factors such as students' interests, teachers' interaction, and the difficulty of the content play roles in how students learn materials, prior knowledge is still necessary (Marzano, 2004).

The reading and summarising included in the concept mapping of Remap RT learning model allow the students to understand learning materials prior to the face-to-face learning activities in the classroom. Indeed, the students were able to better understand and master the concepts being studied through reading (Palincsar & Brown, 1984). What the students obtained from reading would become their prior knowledge. Reading also has the potential to transform the students' explicit knowledge into tacit knowledge (Fuad, Zubaidah, Mahanal, & Suarsini, 2016; Handoko, Nursanti, Harmanto, & Sutriono, 2016). Moreover, with the implementation of the Remap RT learning model, the students became more accustomed to reading and, as a result, developed a reading habit that also influenced their achievement (Owusu-Acheaw, 2014).

The students prepared themselves before coming to the classroom with reading so that it was easier for them to understand the concepts taught by the teacher in the classroom. The concept mapping of the Remap RT learning model can be used to evaluate students' understanding of a certain concept (Novak & Canas, 2008). Concept mapping has been proven to help students understand, integrate, clarify concepts they learned, and improve their achievement (Brinkerhoff & Booth, 2013; Chiou, 2008; Ogonnaya, Okafor, Abonyi, & Gamma, 2016). In addition to manual concept mapping, some applications can be utilised for concept mapping, such as Mind Manager, Freemind, Cmap Tools, and others. Technology and knowledge cannot be separated because they play a significant part in knowledge building (Handoko, Smith, & Burvill, 2014).

The activities of composing questions and predicting the answers also help the students improve their achievement. Students who are already

familiar with a particular learning material would be able to compose some critical questions and also can predict the answers. Questions are a tool that can be used to enhance students' thinking skills (Lubliner, 2004). King (1991) explained that composing questions and predicting the answers can help students pay more attention to the problem-solving process, monitor their understanding, and encourage them in solving their problems. Predicting the answer can train students to solve problems by utilising their knowledge. Students' knowledge will be meaningful if it is applied in various situations (Palincsar & Klenk, 1991). Through these activities, students will feel challenged to be able to understand the materials in order to make correct predictions. These will result in the improvement of their achievement because the students must work hard to understand the learning materials.

Clarifying answers is the last step of Remap RT, which also helped improve the students' achievement. When the students clarify their answers, they simultaneously evaluate and revise particular concepts. Students' ability in clarifying answers can be measured from how the students respond to mistakes made, how they revise, and how they complete the answers based on the concepts learned (Palincsar & Brown, 1984). This condition will indirectly improve students' achievement. Therefore, Remap RT learning model has a higher potential for improving students' achievement than conventional methods do.

The Effects of Students' Academic Ability on Students' Achievement in Biology

The results of this research reveal that high-ability students could achieve better results than the low-ability students could. This finding is in line with the results of the research conducted by Suratno (2009), Adhani (2014), and Mamu (2014). Newman-Ford, Lloyd, and Thomas (2009), state that students who have high qualifications upon entering a new school level will consistently achieve higher than students who have a low qualification will.

Academic ability is one of the predictors of students' academic success (Chamorro-Premuzic & Arteche, 2008; Veas, Gilar, & Minano, 2016). Students' achievement will vary according to the levels of their academic ability (Anderson & Pearson, 1984). This might happen due to their different pace of learning (Vermon, 1990). In line with this, Corebima (2005) also suggests that high-ability students can acquire a deeper conceptual understanding than low-ability students can.

Surprisingly, the results of this research indicated that the low-ability students taught using RT Remap could achieve the same or even better results than the high-ability students taught using conventional methods could. This

significant finding suggests that an appropriate learning model could turn the table around. Marzano (2006) states that under controlled circumstances, a teacher has an ability to boost students' learning. Therefore, the teacher needs to become knowledgeable of appropriate strategies to help students produce better learning outcomes (Erickson, 2008).

The Effects of the Interaction between Learning Model and Students' Academic Ability on Students' Achievement in Biology

The results of the research show that the interaction between the learning model and academic ability affected students' achievement. This finding is corroborated by those of Efendi (2013) and Widayati (2015), who reported that the interaction between the learning model and academic ability affected students' achievement. The implementation of Remap RT and high academic ability had a positive effect on students' achievement. It was proven that the high-ability students who learned using the Remap RT learning model could achieve significantly higher than other students could. As previously explained, learning activities in Remap RT can facilitate students to understand concepts they are learning (Brinkerhoff & Booth; 2013; Chiou, 2008; Palincsar & Brown, 1984; Palincsar & Klenk, 1991; Ogonnaya et al., 2016). The enhancement of the conceptual understanding will also increase their achievement. With a faster learning pace (Anderson & Pearson, 1984; Newman-Ford et al., 2009), the high-ability students who learned using Remap RT will achieve better than other groups of students will.

The most notable finding is that the low-ability students taught using Remap RT could achieve the same level or even better than the high-ability students taught using conventional methods could. The Remap RT syntax provided the students with activities which helped them develop their reading skills, concept mapping skills, and thinking skills.

Reciprocal Teaching (RT) is a cooperative learning model that has the ability to encourage what is known as 'deep learning'. Springer, Stanne, and Donovan (1999) reported the results of a large meta-analysis on small group learning compared to traditional lecture-based instruction. They determined that various forms of small group learning resulted in students' higher achievement in test scores, more positive attitudes, and higher levels of persistence. However, the result did not occur simply because students were placed in groups. Instead, it resulted from carefully sequenced planned assignments and activities orchestrated by a teacher committed to student learning. The teacher can ensure that students learn important course content through pre-class reading and concept mapping, formative in-class quizzes or classroom examinations, brief in-class activities

completed individually, with a partner, or in small groups, and so forth.

Academic achievement and classroom learning are intrinsically related. Understanding learning mechanisms also enhance academic achievement. Teachers need to design classroom activities and encourage students' intellectual companionship and attitudes toward learning that build a sense of responsibility and community for each other (Bachtiar, Zubaidah, Corebima, & Indriwati, 2018). These activities may take the form of students' solving problems together by depending on each other through summarising, asking questions to clarify explanations, making some predictions about possible answers and suggesting different solutions. Therefore, it is necessary for teachers to understand that there are still many low achievers who have not gained certain experiences that would provide them with background knowledge adequate for learning some new materials (Chall, 2000). Teachers have to assess students' needs and use learning models that are aligned with the evaluated needs. Apparently, students do not learn much just by sitting in the classroom listening to the teacher, memorising pre-packaged tasks, and presenting answers, but they need to express what they are learning, write about it, relate it to experiences, and apply it to their daily life.

Conclusions and Implications

The results of this research indicated that students who learned using Remap RT had better achievement in biology than those who learned using conventional methods. Even though the high-ability students could perform better than the low-ability students could, the low-ability students could catch up with them through the implementation of Remap RT. Therefore, the Remap RT learning model can be recommended as one of the effective learning models that can improve the low-ability students' achievement.

The findings of the research can also be used for consideration by schools about whether to accept new students. The recent student admission system using MPL NE leads to the tendency that some public schools would prefer students with high scores of a national examination, or high academic ability students. In contrast, some schools can only accept low academic ability students or students who achieve low scores in the national examination. As a result, the aspect of equality in obtaining a proper education does not receive much attention. Therefore, with the findings of this research, schools are also expected to consider the percentage of low academic ability students to be accepted as new students. Thus, the low academic ability students can also receive a decent education. The findings of this research can also be used as a solution for schools

that have admitted low academic ability students. An appropriate learning model should be implemented in the classroom to improve students' achievement. However, the potentials of Remap Coople combined with RT requires further investigation, especially to students' achievement who have low ability.

Acknowledgement

This research was supported by the Directorate of Research and Community Service – Ministry of Research, Technology, and Higher Education of the Republic of Indonesia - General Directorate of Research, Reinforcement and Development, on research funding with a letter of assignment agreement No. 047/SP2H/LT/DRPM/II/2016 and No. 151/SP2H/LT/DRPM/III/2016. Also, the authors would like to thank Nara Sari for proofreading the article.

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doi: 10.26529/cepsj.451

Development of an Albanian Version of the Questionnaire on Teacher-Student Interaction

Edona Berisha Kida*[1] and Theodhori Karaj[2]

A questionnaire for studying teacher-student interaction in Albanian contexts was developed with extensive coverage in the field of educational psychology. The purpose was to adapt and develop an Albanian version of the widely used tool, the Questionnaire on Teacher-Student Interaction. The teacher-student relationship has been found to be very significant in many studies. Students' academic achievements, emotional and social development, classroom group dynamics, and school dropouts are just some of the issues to be influenced by the nature of the established teacher-student relationship. To better measure students' perceptions of teachers, clinical scientific data on personality interactions have been adapted and transferred to the contexts of education. With a sample of 300 subjects, the Questionnaire on Teacher-Student Interaction underwent necessary procedures and statistical analyses. Consequently, the original American version of 64 items resulted in 54 items in the Albanian version. Results confirm the reliability and validity of the questionnaire in the Albanian language and reconfirm its general usage for diverse cultures and contexts. Finally, through this study, the dimensions of teacher-student interactions were also measured and documented in the Kosovo context.

Keywords: Albanian version of the QTSI, dynamics of human interaction, students' perceptions of teachers in primary schools, validity of the QTSI, psychometric approach to measuring circular data

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Razvoj albanske različice vprašalnika o interakciji med učiteljem in učencem

Edona Berisha Kida in Theodhori Karaj

Oblikovan je bil vprašalnik za preučevanje interakcij med učiteljem in učencem v albanskih kontekstih z obsežnim pokrivanjem na področju pedagoške psihologije. Namen je bil prilagoditi in razviti albansko različico široko uporabljenega orodja, t. i. vprašalnika o interakciji učitelja in učenca (QTSI). V veliko raziskavah je bila ugotovljena ključna vloga odnosa med učiteljem in učencem. Akademski dosežki učencev, čustveni in socialni razvoj, skupinska dinamika v razredu in osip so le nekatera vprašanja, na katera vpliva narava vzpostavljenega odnosa med učiteljem in učencem. Da lahko bolje izmerimo, kako učenci dojemajo učitelje, so klinični znanstveni podatki o osebnostnih interakcijah prilagojeni in preneseni v kontekst izobraževanja. Na vzorcu 300 učencev je vprašalnik o interakciji učitelja in učenca prestal potrebne postopke in statistične analize. Posledično se je izvirna ameriška različica, ki sicer vsebuje 64 elementov, izražala v 54 elementih albanske različice. Rezultati kažejo na zanesljivost in veljavnost vprašalnika v albanskem jeziku ter ponovno potrjujejo njegovo splošno uporabo v različnih kulturah in kontekstih. S to študijo smo tudi merili in dokumentirali dimenzije interakcij med učitelji in učenci v kosovskem kontekstu.

Ključne besede: albanska različica QTSI, dinamika človekove interakcije, dojemanja učiteljev z vidika učencev v osnovnih šolah, veljavnost QTSI, psihometrični pristop k merjenju krožnih podatkov

Introduction

Human interaction

The effect of social interaction on the development and dynamics of personality has become an area of interest that is addressed by many disciplines of psychology such as behavioural, social, organisational, educational psychology, the psychology of communication, among others.

Social interaction is essential for the development of basic cognitive concepts to the more complex ones such as the development of self-concept. The mutual relationship of human interaction, the way individual psychology is socially influenced, and the way human behaviour further influences the social context are explained through different theories. For example, theories of psycho-social development (led by Erikson, 1959, 1963) have explained the development of personality at different stages by overcoming psycho-social crises; psychodynamic theories have explained how social interaction influences emotional development; behaviourism and social learning theories (including the cognitive perspective in education) have explained how individuals develop the cognition and learning processes through social context interaction; systemic theories involving the ecological and family perspectives have explained the dependency of behaviour on macro and microsystems, among others. (Ginsburg & Opper, 1969; Vata, Haith, & Miller, 2007).

Later, social psychologists addressed research issues related to the way how the social context and inner experiences, such as thoughts (cognition) and emotions (affective domain), predict individual behaviour (Fisher, Fraser, & Cresswell, 1995).

The impact of interpersonal relationships on the individual's psyche is also addressed in the field of clinical psychology. Leary's interpersonal relationship model (1957) is perhaps the most accepted and proven to be effective in the clinical field (Strack, 1996). This model introduces two-dimensional dynamics of human interaction, one of the domination/control and the other of proximity/love. Studies show that this model is applicable on the intercultural basis (Wubbels, Den Brok, Van Tartwijk, & Levy, 2012).

The importance of knowing the teacher-student relationships

Through his experiments Norman Triplet (1897) documented that as a result of competitive drives, the individual's efforts increase by the presence of another person (but decreases by the group growth and responsibility sharing); the impact of human interaction as a promoter or deprivation of success became a reference focal point for studies (Fisher et al., 1995).

Given the fact that social interaction affects the development of personality in different forms, while personal traits and concepts affect the individual's performance, educational psychology began to study the influence of social contexts and, in particular, the impact of teacher-student relationships and other classroom dynamics on cognitive and emotional processes (Fisher et al., 1995; Den Brok, 2001; Den Brok, Fisher, & Rickards, 2006).

The social comparison theory states that depending on personal experiences, an individual forms thoughts of self (self-concept), according to which he/she develops certain positive or negative feelings toward him/herself. Self-concept and self-esteem are formed by psychic responses to interpersonal, developmental experiences, to further directly influence the behaviour and success of the individual (Fisher & Richards, 1998; Frenzel, Goetz, Lüdtke, Pekrun, & Sutton, 2009). Therefore, the learning process that is part of various developmental phases has started to be elaborated through an interpersonal perspective. This perspective addresses communication systems and teacher-student relationships that have been shown to influence not only cognitive but emotional processes as well (Frenzel et al., 2009; Fried, Mansfield, & Dobozy, 2015).

Academic achievements, emotional, and social development, and the number of school dropouts are just some of the issues shown to be influenced by the nature of established relationships between students and teachers (Den Brok, 2001; Fisher & Rickards, 1998; Frenzel et al., 2009; Fraser et al., 2010; Fried et al., 2015; Muller, Katz, & Dance, 1999).

The students' cognitive results proved to be closely related to the friendly, supportive, leading, and strict behaviour of teachers. The more friendly, supportive, leading and strict the behaviour of the teacher is, the greater the students' success and vice versa (Fisher et al., 1995; Fisher & Rickards, 1998). Thus, interpersonal behaviour has been shown to be a strong aspect of the learning environment, and it is akin to the academic achievements of students.

Psychological Model of Human Interaction in the Educational Context and Development of the Questionnaire for Teacher-Student Interaction (QTSI)

Wubbels, Creton, and Hooymayers in 1985 laid the foundations of the Teacher Interpersonal Behaviour Model (TIBM) (Wubbels et al., 1985). They expanded Leary's (1957) idea of a clinical model for personality diagnosis based on interpersonal behaviour. The TIBM is built on two dimensions of interpersonal interaction between teachers and students. This model is presented in Figure 1. Its dimensions are 1) the proximity dimension that varies between cooperative and

opposite behaviour, and 2) the influence dimension that varies between dominant and submissive behaviour. These dimensions are placed within a coordinate axis: the influence dimension as the dominant-submissive (DS) line is placed in the vertical axis while the proximity dimension as the cooperative-opposition (CO) line on the horizontal axis (Fisher & Rickards, 1998; Wubbels et al., 2012).

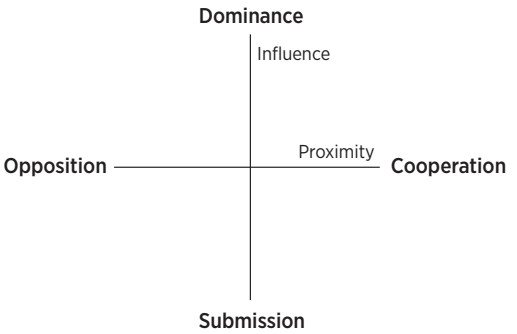

Figure 1. TIBM Model within the Coordinate Axis

Different sectors exhibiting specific behaviour conform to the variability within the coordinate axis are set and form a circle (circular) presented in Figure 2. The variable behaviours on the coordinate axis are Leader, Supportive/Friendly, Understanding, Student's Responsibility, Uncertain, Unsatisfied, Admonishing, and Strict Behaviour (Den Brok, Fisher, & Rickards, 2006, 1998; Wubbles & Brekelmans, 2005).

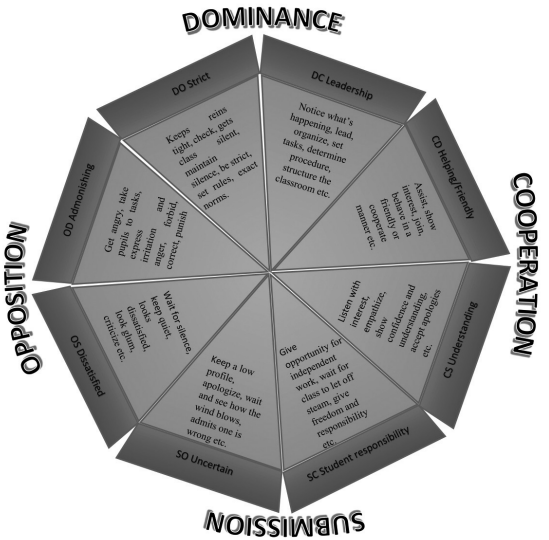

Figure 2: Interaction model in the educational context. Model for interpersonal teacher behaviour. Adapted from Wubbles & Brekelmans, 2005, p. 9.

As can be seen in Figure 2, the two dimensions are presented through two axes, which extend the eight types of teacher behaviour. The characteristics of this model are eight sectors of behaviour that are presented in two dimensions; the two dimensions are negatively correlated; sectors can be equally distributed in the circumplex.

One sector has the highest correlation with the nearest sector within the circumplex and the lowest correlation with the reverse ones. Sectors are named depending on the position within the coordinate axis. For example: being a leader and supportive/cooperative; both types of these behaviours are characterised by dominance (D) and cooperation (C), but in the first case (being a leader) dominance predominates cooperation (DC), while in the second case (being supportive/cooperative) the opposite occurs (CD) (Den Brok et al., 2006).

To accurately measure students' perceptions of teachers and the development of their interpersonal relationships, Wubbles and his colleagues developed the Questionnaire on Teacher-Student Interaction (QTSI), which further supported the TIBM model (Wubbels et al., 2012). The TIBM model is well reflected in the questionnaire, with which certain types of interaction are measured under different subtests. Despite representing students' perceptions of teachers' interaction habits, QTSI is also useful to enable teachers' to reflect upon their classroom behaviours and to use its findings as a basis for behavioural modification. Comparison of the results on the **Ideal Self** (which can be presented if the teacher fills out the questionnaire by alluding to what he/she would like his/her professional performance to be), the **Real Self** (filling out the questionnaire on a maximum realistic way by the teachers) and the **Self perceived by students** (when the QTSI is filled out by the students) would further support reflection on the dynamics of teachers' interactive habits and professional work (Fisher & Rickards, 1995, 1998).

Adaptations of the QTSI Questionnaire

Following the initial QTSI application in the Netherlands, it was supported and adapted from many countries such as Australia, Canada, Greece, Israel, Slovenia, Serbia, Turkey, Korea, Taiwan, Indonesia, Singapore and United States (Den Brok et al., 2006).

The Dutch, American, and Australian versions of QTSI were developed after several pilot administrations and statistical analysis to achieve satisfactory psychometric traits (Wubbles & Brekelmans, 2005; Wubbles et al., 2012). The Dutch version, as the first and the original one, possessed 77 questions; the American one was reduced to 64 while the Australian version to 48 questions (Wubbels, Brekelmans, & Hermans, 1987; Wubbels & Levy, 1991).

QTSI has eight sub-tests. Answers are designed according to the Likert scale, from 'Never' to 'Always'.

Several studies have been conducted on the reliability and validity of the QTSI, where Cronbach's Alpha was always higher than .70. The intercultural validity of the questionnaire (of the American version) was confirmed by Wubbles and Levy (1991) in a sample involving over 1600 students and approximately 100 teachers (Fisher & Rickards, 1998; Wubbels et al., 2012).

For more than 20 years, QTSI has been consistently reported to be an effective instrument for measuring teacher-student relationships (Den Brok et al., 2006; Passini, Molinari, & Speltini, 2015; Wubbels et al., 2012). Passini et al. documented QTSI's validity and reliability in different adaptations. This is summarised in Table 1 below.

Table 1

Psychometric properties of QTSI in different versions and adaptations.

Language	Version	*N*	References	Cronbach Individual (from-to)	Cronbach Class Mean (from-to)	Ability to differentiate between class	Circumplex structure
Dutch	77 Items	1105	Wubbles and Levy (1993)	.74-.85	-	-	-
English (Australian)	48 Items	3215	Richards and Fisher (1999)	.62-.88	.72-.92	.17-.31	-
English (Australian)	64 Items	726	Den Brok et al. (2006)	.56-.86	.76-.96	.22-.35	Partially confirmed
English (Australian)	64 Items	3994	Fisher et al. (1997)	.63-.88	-	.22-.35	-
English (Singapore)	48 Items (primary)	1512	Chiew Goh and Fraser (1998)	.50-.78	.73-.96	.13-.38	-
English (US)	64 Items	1606	Wubbels and Levy (1991)	.76-.84	-	-	-
French	64 Items	799	Lapointe and Legauk (1999)	.68-.93	-	-	Partially confirmed
French	32 Items	1764	Lapointe and Legauk (1999)	.62-.85	.89-.98	-	Partially confirmed
Greek	64 Items (primary)	1973	Kyriakides (2005)	-	.84-.94	-	Confirmed
Greek	48 Items	273	Kokkimos et al. (2009)	.36-.76	-	.12-.44	Confirmed
Hebrew	64 Items	113	Kremer-Hayon and Wubbles (1993)	.57-.83	-	-	-
Malay	64 Items	2357	Den Brok et al. (2006)	.57-.83	.75-.95	-	Partially confirmed
Malay	48 Items (primary)	3104	Scott and Fisher (2004)	-	.62-.86	.14-.24	Partially confirmed
Korean	48 Items	543	Kim et al. (2000)	.61-.83	-	.14-.25	Confirmed
Turkish	64 Items	674	Telli et al. (2007)	.74-.97	-	.24-.45	-

Note. Adapted from Passini et al., 2015.

Current study objectives

The main objective of this study is:

1. To adapt the American version of QTSI to the Albanian language.

The further supporting objective is:

2. To apply the QTSI-Albanian version and represent an overview of students' perceptions of teachers' interaction habits in elementary schools of Kosovo.

Research questions

1. To what extent does the construction of the QTSI Albanian version fit with the American version?
2. What are the elementary school students' perceptions of their teachers' interaction habits in Kosovo?

Method

Characteristics of Sample

The data collection was a sample of 300 students with the following demographic characteristics: 145 females and 155 males, ranging from the 1st to the 5th grade (approx. 6-10 years old), coming from five municipalities, 10 different schools (see Tables 3) and 49 different classes (49 different teachers). The municipalities were: Prishtina, Fushë-Kosova, Obilic, Podujeva, and Drenas. For convenience in the application procedure and greater accuracy in the results, the sample had more students from the 3rd, the 4th, and the 5th grades (see Tables 2). During the administration of the questionnaire, direct support was offered to all respondents in need.

Table 2
Sample distribution by class

Class	Frequency
I	36
II	40
III	81
IV	82
V	61
Total	**300**

Table 3
Sample distribution by schools

No.	School	Frequency
1	Xhemail Mustafa	30
2	Pavaresia	30
3	Meto Bajraktari	29
4	Iliria	36
5	Daut Bogujevci	30
6	Dëshmoret e Kombit	33
7	Kadri Kadriu	19
8	Mihal Grameno	30
9	Pandeli Sotiri	23
10	Xheladin Rekaliu	40
	Total	**300**

Research Design and Procedure

The following points summarise the procedural steps and the research's design:

1. First, a draft research proposal was submitted to the Ministry of Education, Science, and Technology (MEST) in Kosovo to obtain their agreement and official approval regarding the application of the questionnaire in schools.
2. The authors' permissions were requested from the authors, including the representative author of QTSI and the professor of education at the Faculty of Social and Behavioral Sciences at Utrecht University in Holland.
3. After obtaining an official permit from Prof. Wubbles, the translation process was started. The content validity of the questionnaire (Fraser, Aldridge, & Soerjaningsih, 2010) was achieved through an interdisciplinary evaluation committee consisting of linguists, pedagogues, and psychologists in the Faculty of Education of the University of Prishtina. The commission revised and adapted the first version translated into Albanian. Then the questionnaire was submitted for back translation procedure.
4. The construct validity and reliability of the questionnaire (Fraser et al., 2010) were achieved through statistical procedures.
5. The questionnaire was conducted in two phases: 1) the pilot phase (consisting of 50 respondents), and 2) the total administration phase (consisting of up to 300 subjects involved).

6. Particular attention was paid to the words used, as the answers depend on how the questions are understood (Fraser et al., 2010). After the pilot phase, the commission revised the questionnaire and consequently modified some of the questions, as the pilot results indicated that students found it difficult to understand the questions in which advanced expressions were used relative to their age and cognitive development.
7. The design of the study was completely randomised, and subjects were randomly selected (Fraser et al., 2010; Trochim, 2002).
8. The application procedure was conducted by previously trained students from the Faculty of Education.
9. The study procedure lasted six intensive months (November 2016–April 2017).

Data analysis

For the statistical data processing and analyses, the SPSS 22, AMOS 24 and Oriana 4 software were used. The following analyses were conducted:

1. First, **the distribution of data** was checked to determine which statistical analysis are the most appropriate. The data distribution was analysed through measures of Skewness and Kurtosis. The normality or symmetric distribution was determined by calculating **z-values** for each subtest. Shapiro-Wilk and Kolmogorov-Smirnov tests were also taken into account.
2. **Factor analysis** with **Barlett** and **KaiserMeyer-Oltkin tests (KMO)** to measure the internal validity of the instrument.
3. **Alpha Cronbach** to measure the reliability of the instrument.
4. **Pearson's linear bivariate correlation** to measure the correlation between sub-tests.
5. **Kuiper Test** to measure circumplex distribution.
6. Inferential **ANOVA** and **Eta squared** statistics to measure perception differences between classes.
7. **Univariate analysis** was used to generate an overview of students' perceptions of teachers' interaction habits.

Results

Normal Distribution

The sample consisted of 300 students divided by the age groups from the 1st to the 5th grades. They came from 10 different schools and had 49 different teachers (49 classes in total). Therefore, the data distribution of QTSI subtests was done by selecting each age group in relation to the respective teacher. These data turned out to be normally distributed. It is noteworthy that the Shapiro-Wilk test was more frequently taken into consideration since it appeared to be statistically more sensitive and more appropriate to the current sample size (Statistical Solutions, 2017).

To increase the quality of the data, data cleansing and transformation was conducted. Data cleansing was done by identifying outliers by following the z-values of ± 3. To exclude outliers, they were transformed into missing values, and then all the missing values were transformed to the mean series' values. In this case, the criteria that the frequency of transformed values to the mean series should not be greater than 5% was taken into account (Hinton, Brownlow, McMurray, & Cozens, 2004). After this data rearrangement, further data transformation was done through the Box-Cox method. With reference to this, traditional arithmetic methods such as 'square root sqr' and 'log10', among others, were excluded. Thus, the Box-Cox method was selected as a more advanced one (Osborne, 2010). After this transformation process, the subtests as holistic ones (i.e., the level of study not based on different teachers) resulted in being normally distributed.

Factor analysis with Barlett and Kaiser Meyer-Oltkin tests

Before starting factor analyses, Barlett's test for sphericity was conducted to determine whether there is a correlation between variables. The test result turned out to be of statistical significance. It was like a green light for continuing the factorial analysis since variables could be attributed to particular factors. The value of $p \leq .05$ in the Barlett test indicates that the responses collected about the issue being addressed are adequate.

To further confirm the goodness of fit of the sample in order to use the factor analysis, the Kaiser-Meyer-Olkin test was applied. In general, small test values always indicate problems related to the sample; since the correct values should be above .5 (Kaiser, 1974). Thus, the result shown in Table 4 indicates that the sample was appropriate; therefore, the factor analysis could be applied.

Table 4
Results from KMO the Bartlett tests

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			*.73*
Bartlett's Test of Sphericity	Approx. Chi-Square 5789.596	DF2016	*Sig. .00*

There are two types of factorial analysis: exploratory factor analysis (EFA) and confirmatory factor analysis. The analysis offered by SPSS software is EFA. Since an instrument is being adopted but not constructed, CFA had to be used in this study. This analysis presents a more complex approach by testing the hypothesis that questions/items are related to particular factors (Pallant, 2013). So it tends to confirm an already developed model. This analysis should use the structural equation modelling that is not provided with the SPSS program. Therefore, AMOS 24.0 software was used. This is added to SPSS and is particularly suitable for modelling structural equations; calculations can also be done by manually drawing graphical models (Statistical Solutions, 2017). For the use of this analysis in the current study, it is ensured that the variables are of continuous-scale and that the sample size is appropriate. Since the population of 'The Low Primary School Students' in Kosovo is 273,649 (Mekolli et al., 2017), then according to online software for sample size calculation, the sample of 259 subjects was shown to be adequate with 95% confidence level and interval 6 (Survey Systems, 2017). However, in the AMOS software, within the Input's Covariance Matrix, the Bootstrap option was used to increase the measuring accuracy (Arbuckle, 2013). The Boots Factor increased from 1 to 4, which enabled the software to quadruple the sample size by using every observation four times. This was done due to the Chi-square Model Fit Analysis that requires a large number of subjects (mainly over 1000 subjects) (Arbuckle, 2013). Figures 3, 4, and 5 present an example of the model charts for some of the sub-tests and total QTSI-Albanian version.

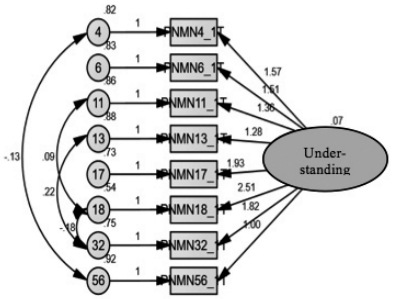

Figure 3. Sub-test 'Understanding'

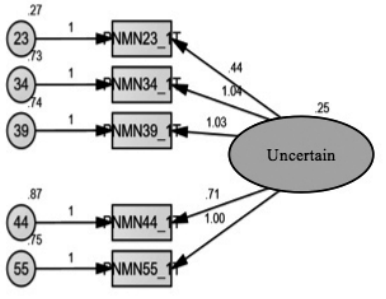

Figure 4. Sub-test 'Uncertain'

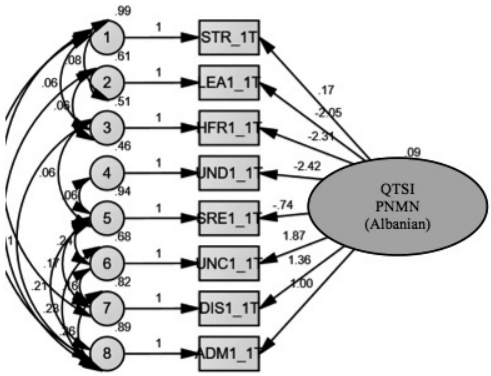

Figure 5. QTSI test with its sub-tests

In all results, the links between the indicator and latent variables can be noticed, and regression weights are always high and/or moderate. Similarly, the covariance between items is addressed. On this basis, some modifications have been made.

Ten (10) items/questions were removed as they were considered unnecessary due to their high covariance with other ones. These items were considered adequately represented through other similar questions. The removed questions/items were 9, 10, 24, 27, 41, 42, 46, 59, 61, and 62. Thus, the QTSI-Albanian version remains with 54 items/questions in contrast to the original version's 64.

The following statistical tests/analyses are conducted to verify the goodness of fit for each sub-test and for the entire instrument:

1. Chi-Square tests,
2. The Goodness of Fit (GFI),
3. Adjusted Goodness of Fit (AGFI),
4. Comparative Fit Index (CFI),
5. Less frequent root mean square error of approximation (RMSEA), and
6. Tucker and Lewis Index (TLI).

All results from these analyses show maximum adaptability/suitability between the Albanian version of QTSI and the original one.

Table 5 presents the results of the above-mentioned analyses for each subtest and for the whole instrument.

Table 5
Goodness of Fit indexes for the QTSI Albanian version

Model Fit Analyses ***Prop. level***	**Strict**	**Leader**	**Helping-Friendly**	**Understanding**	**Student Responsibility**	**Uncertain**	**Dissatisfied**	**Admonishing**	**Total QTSI**	**Standard Values**
Chi-Square	.10	.12	.81	.97	.83	.69	.74	.96	.35	≥.05
GFI	.99	.98	.99	.99	.99	.99	.99	1.00	.99	≥.90
AGFI	.97	.95	.97	.98	.99	.98	.97	.99	.96	≥.90
RMSEA	.00	.04	.00	.00	.00	.00	.00	.00	.02	≤.05
CFI	1.00	.96	1.00	1.00	1.00	1.00	1.00	1.00	.99	≥.90
TLI	1.07	.93	1.06	1.07	1.11	1.02	1.02	1.04	.93	≥.90

It is noteworthy that the high Goodness of Fit values on the entire QTSI-Albanian version also confirm the circumplex nature/model of the instrument (Tinsley & Brown, 2000; Tracey, 2000).

Reliability of the QTSI-Albanian version

It should be noted that the reliability of an instrument is closely related to its validity (Tavakol & Dennick, 2011). Therefore, the factor analysis was first completed with a view to the model's goodness of fit to be then followed by the reliability analysis.

To verify the instrument's reliability, the standard analysis developed by Lee Cronbach (1951) was used. The Alpha Cronbach coefficient indicates the extent to which (0 to 1) there is internal consistency within the instrument. So, this analysis measures the link between items/questions and how these items consistently measure the same topic (Tavakol & Dennick, 2011).

The Alpha Cronbach coefficients shown in Table 6 meets the acceptance criteria for each sub-test (ranging from about .6 to .7) and are at a satisfactory level for the entire instrument (over .7) (Hair, Anderson, Tatham, & Black, 2006; Hinton, Brownlow, McMurray, & Cozens, 2004).

Table 6
Alpha Cronbach results for all sub-tests and the entire test

Subtest	Item number	Alpha (α) Cronbach
Strict	8	.55~.60
Leader	7	.59~.60
Helpful-friendly	8	.60
Understanding	8	.67~.70
Student responsible	6	.56~.60
Uncertain	5	.55~.60
Dissatisfied	7	.69~.70
Admonishing	5	.67~.70
Total QTSI	**54**	**.74**

Generally, in cases in which the test consists of few items (usually less than 10), the Alpha Cronbach (α) results are low and, in these cases, it is better to prove the reliability of the test through the inter-item correlation matrix (Pallant, 2011). This analysis was done for all sub-tests of the QTSI-Albanian version, and no negative values were found.

Positive values indicate that questions measure the characteristics for which they are designed. The inter-item correlation means for each subtest in the Summary Item Statistics Table were shown to be within normal limits of .2 to .4 (Briggs & Cheek, 1986).

Linear bivariate correlation

Since the beginning, the QTSI instrument has had eight sub-tests to measure the teacher-student interaction, and these sub-tests function in circumplex in the clockwise direction. Related subtests have a higher correlation with each other, and this correlation is relative to the distance that the subtests are from each other (Den Brok et al., 2006). In this case, Pearson's linear bivariate correlation was applied to measure and prove the correlation between sub-tests.

Correlation results indicate that the QTSI-Albanian version also has a circular nature. The results are as follows:

1. Positive correlation between 'Leader' – 'Supportive/Friendly' sub-tests (n = 250, r = .804, critical value for sample ± .124).
2. Positive correlation 'Supportive/Friendly' – 'Understandable' (n = 250, r = .700, critical value ± .124).
3. Positive correlation 'Leader' – 'Understandable' (n = 250, r = .650, critical value ± .124).

4. Positive correlation 'Understandable' – 'Responsible' (n = 250, r = .605, critical value ± .124),
5. Positive correlation 'Uncertain' – 'Unsatisfied' (n = 250, r = .590, critical value ± .124),
6. Positive correlation 'Unsatisfied' – ' Admonishing' (n = 250, r = .560, critical value ± .124),
7. Positive correlation 'Admonishing' – 'Strict' (n = 250, r = .650, critical value ± .124),
8. Negative correlation 'Understandable' vs. 'Unsatisfied' sub-tests, (n = 250, r = –.900, critical value ± .124).

Furthermore, there is no correlation between more distant sub-tests since the correlation value (r) is lower than the critical value for the current sample (Fortlewis Faculty, 2017), which indicates that the correlation scores are not significant. The following sub-tests have shown these results:

1. 'Understandable' - 'Unsatisfied' (n = 250, r = .100, critical value ± .124),
2. 'Uncertain' – 'Leader' (n = 250, r = -.030, critical value ± .124),
3. 'Unsatisfied' – 'Supportive/friendly' (n = 250, r = .010, critical value ± .124).

The circular flow of correlations between the subtests is shown in Figure 6 below.

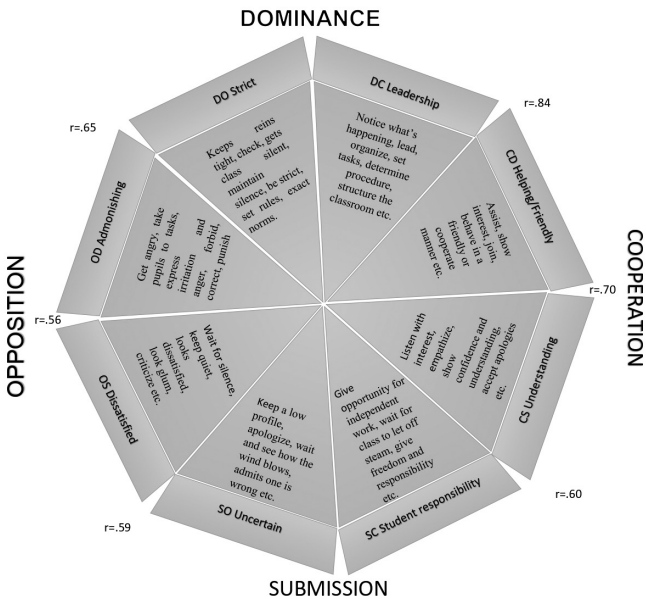

Figure 6. Correlations between subtests as evidence of circular form.

Tests for Measuring Circularity

Circumplex models are widely applied in many psychological fields, including those of interpersonal behaviour, personality traits, emotional/affective domain, and others (Tracey, 2000). Therefore, a special psychometric approach has been developed for measuring those models. Two main approaches for the description and analysis of circular data are found in the literature: a descriptive approach for evaluating the circular models and a confirmatory approach for evaluating the circumplex models. The first approach uses two types of methods: visual inspection (Visualization of Correlation' Matrices and Plotted Factor Scores charts, such as PFA, CFA) and statistical analyses (Kuiper Test, Rayleigh, Selkirk-NeaveGap, etc.), while the second approach uses: constrained multi-dimensional scaling (MDS) and structural equation modelling (eligibility indexes, such as RMSEA, GFI, TLI, etc.) (Tinsley & Brown, 2000; Tracey, 2000).

The circumplex nature of the QTSI-Albanian version was verified through the analysis following the confirmatory approach and presented above. Thus, the circumplex nature is confirmed by the GFI, RMSEA, TLI, CFI goodness of fit to the model indexes, as well as by the matrix correlation data (presented in Table 5 and Figure 6).

To validate even statistically this circular flow, the Kuiper's statistical test was used. Since the formula of this test was inapplicable within the SPSS 22 program, version 4 of the Oriana statistical program was used. Oriana is a program designed for Microsoft Windows that primarily addresses the orientations as well as other circular data (Oriana, User's Manual, 2011). For example, unlike regular factor load models, in which the sub-tests are designed to rely on only one factor; in the case of QTSI, the different sub-tests of the X-Y axes (Proximity and Impact) are calculated by being linearly transformed depending on their interpersonal position under the coordinate axis (Wubbels et al., 2012). The Oriana software provides statistical tests, such as the Rayleigh and Kuiper tests, which are highly sensitive to the data characteristics that have a circular flow. Kuiper's test is one kind of test that measures the distribution similar to that of Komorglav-Smirnov, but Kuiper has incorporated into its formula the measure of the inconsistency values that represent the absolute values of the extreme positive and negative differences; so as a result, this test is sensitive to the edges of distribution (unlike that of Komorglav-Smirnov) (Arsham, 1988).

Thus, Kuiper is based on the largest vertical deviations above and below the diagonal line (representing the desired distribution). That is why the Kuiper test is irreplaceable in circular measurements as it can detect the data value extensions (Arsham, 1988; Oriana User's Manual, 2011).

The results of this test for all sub-tests are as follows: 'Strict' (n = 250, k = 1.70, p≤ .065), 'Leader' (n = 250, k = 1.68, p≤ .073), 'Supportive/Friendly' (n = 250, k = 1.74, p≤ .052), 'Understandable' (n = 250, k = 1.72, p≤ .058), 'Responsible' (N = 250, k = 1.66, p <.081), 'Uncertain' (n = 250, k = 1.68, p≤ .073), 'Unsatisfied' (n = 250, k = 1.72, p≤ .058), and 'Admonishing' (n=250, k=1.66, p≤ .081). These results show that there is a tendency of uniform data flow, somehow evidencing the circular data flow.

Inferential ANOVA and Eta squared statistics

Another essential characteristic of the QTSI instrument is its ability to differentiate between perceptions of students in different classes. Students within the same class should perceive approximately the same interpersonal relationships with their teacher, while the mean of these perceptions should vary from class to class as the teacher is different (Fisher & Rickards, 1998; Richards & Fisher, 2000).

One-Way ANOVA with the class as the main effect was applied to validate the differences between the groups' means (in total, 48 different classes), while Eta Squared was used to prove that the class is the indicator that represents the difference between these means, by verifying first that the sample size is adequate.

Table 7 of the One-Way ANOVA shows that in each sub-test of the QTSI, the result (p <.001) significantly differentiates between the classes, while the Eta Squared results (shown in Table 8) varied from 0.35 to 0.54, showing the proportion of the variance, based on classes is under the acceptable limits of sample size effect (Preacher & Kelley, 2011).

Table 7
One-Way ANOVA results of all subtest

Subtests with the class as the main effect	ANOVA Results
Strict * Class	F (48, 210)=4,44; p=.00
Leader * Class	F (48, 210)=2,71; p=.00
Friendly/ Supportive * Class	F (48, 210)=3,25; p=.00
Understanding * Class	F (48, 210)=5,24; p=.00
Responsible * Class	F (48, 210)=2,94; p=.00
Uncertain * Class	F (48, 210)=3,93; p=.00
Dissatisfied * Class	F (48, 210)=3,97; p=.00
Admonishing * Class	F (48, 210)=2,33; p=.00

Table 8
Eta and Eta Squared results

Subtests with class as a main effect	Eta	Eta Squared
Strict * Class	.71	.50
Leader * Class	.61	.38
Friendly/ Supportive * Class	.65	.42
Understanding* Class	.73	.54
Responsible * Class	.63	.40
Uncertain * Class	.68	.47
Dissatisfied * Class	.69	.47
Admonishing * Class	.58	.34

The Albanian version of QTSI and perception of teachers by primary school students in Kosovo

Results related to the perception of teacher-student relationships were generated through univariate analysis: Central Tendency (Mean) and Dispersion (Standard Deviation). Table 9 below shows the results for each subtest. The results demonstrate that the students perceive their teachers more as leaders ($\mu = 4.4$), understandable ($\mu = 4.1$), supportive and friendly ($\mu = 3.9$) and less unsatisfied ($\mu = 1.8$), uncertain ($\mu = 1.4$) and Admonishing ($\mu = 1.7$). However, teachers are largely perceived as responsible ($\mu = 2.6$) and with strict behaviours ($\mu = 2.4$).

Table 9
Descriptive statistics upon the perception of student-teacher relationships

	N	Min.	Max	(μ)	(σ)
Strict	258	1.10	3.80	2.45	.47
Leader	259	1.00	5.00	4.40	.56
Friendly/Supportive	259	1.00	5.20	3.98	.62
Understanding	259	1.00	5.00	4.13	.67
Responsible	259	1.00	4.75	2.64	.61
Uncertain	259	1.00	5.00	1.48	.49
Dissatisfied	259	1.00	3.78	1.80	.58
Admonishing	259	1.00	3.75	1.78	.54
Valid N (listwise)	258				

Discussion of the results and conclusion

The purpose of this study was primarily to adopt the American version of QTSI in Albanian language and the provision of the general overview of the perceptions of teachers by elementary school students in Kosovo. Permission to adapt this instrument was granted by the QTSI's author, while the approval for its application was granted by MEST in Kosovo. The translation of the questionnaire passed through several stages: a professional translation was conducted, and the verification of questionnaire's content validity was done through a professional commission as well as the back translation and other necessary statistical procedures.

Intensive support was provided to students during the administration of the questionnaire to ensure that the questions were well understood; all questions that were not sufficiently understandable due to linguistic, cultural, or even certain developmental periods were identified during the administration phases. The goal was an instrument that satisfies psychometric expectations regarding questionnaires' adaptation. In addition to the application of Goodness of Fit Indexes through CFA and the Alpha Cronbach reliability, correlations between the sub-tests and the Kuiper test were also required to confirm the circumplex nature of the instrument. All Goodness of Fit to the model indexes were shown within the acceptable limits. Acceptable results on Goodness of Fit indexes were also indicators to confirm the original circumplex nature of the instrument. However, its circumplex nature was also verified by proving inter-scale correlations through Pearson's bivariate correlation analysis and the Kuiper statistical test.

During the factorial analysis procedure, it was decided that ten (10) items should be excluded from the adopted Albanian instrument as they were presented sufficiently through other similar questions having covariance to a great extent. Thus, the Albanian version of the QTSI was reduced to 54 questions. However, the alpha reliability coefficient at sub-tests level did not often prove to be of high value, but moderately acceptable. It is worth mentioning that the alpha coefficient is sensitive to the number of the items in the instrument (Pallant, 2011, 2013; Tavakol & Dennick, 2011), whereas the assumption behind the alpha equation is that the specific variance within the variables (s^2) should be smaller than the inter-item variance in the instrument (Cov) in order to present a high internal consistency (Cortina, 1993). As the ten questions with high covariance values were removed from the Albanian version of the instrument, this should be the main reason that Alfa Cronbach results of QTSI subtests in Albanian were higher before excluding those 10 questions identified

with the Confirmatory Factor Analysis. However, based on: the fact that a good instrument (including its administrative aspect) is one that has a small number of questions but sufficiently measures what it is designed for (Wubbles & Brekelmans, 2005; Wubbels et al., 2012) and the general tendency to reduce questions from the QTSI questionnaire (Fisher & Richards, 1998), it was decided that the items to be excluded. Again, Alpha Cronbach coefficients were in the eligibility criteria for all sub-tests. Also, the inter-item correlation matrix proved that the inter-item correlation means were within the acceptable limits (Briggs & Cheek, 1986; Pallant, 2011).

The application of QTSI-Albanian version in the current sample of Kosovo primary school students once again proves that the students perceive their teachers differently. This perception depends on the nature of interpersonal relationships developed by teachers (Fisher & Rickards, 1998; Richards & Fisher, 2000). One-Way ANOVA and Eta Squared analysis has shown a significant statistical difference between perceptions of teachers by students of different classrooms. The ability to differentiate between classrooms is again in line with the original research and previous validation studies of QTSI (Passini et al., 2015; Wubbles et al., 2005).

In general, students in Kosovo perceive their teachers as leaders who are understandable, supportive, and friendly. Teachers are seen as less unsatisfied, uncertain, and admonishing. However, they are largely perceived as responsible and with strict behavior. In this direction, according to the results from univariate analyses, we may conclude that students perceive their teachers more in the dimensions of dominance (e.g., leader, strict) and cooperation (e.g., understandable, supportive-friendly). It can be interpreted so that teachers imply influence on their students, but, at the same time, they establish an amount of cooperation. Regardless, our study presented merely superficial results of this nature since its primary purpose was to properly adapt the questionnaire. We recommend that student-teacher interaction in Kosovo schools should be further studied in order to better explore the nature of this interaction and to evaluate scientifically the students' academic achievements and motivation.

From what has been presented thus far through this paper, it can be concluded that the QTSI-Albanian version is valid and reliable. This instrument is an additional asset in the Albanian language since it is the first validated one that measures teacher-student interaction. In general, the instrument can contribute to a deeper understanding of the teacher-student relationships and the impact they have on different educational and developmental areas within Albanian samples. It can be used by teachers, specifically as a tool for helping reflective thinking related to classroom practice improvements. Taking into

account the fact that teachers sometimes tend to lack reflective ability because the teaching process and interaction with students becomes reflexive everyday responses (Choy & Oo, 2012), the questionnaire's ability to stimulate thinking upon the differentiated results from QTSI on the 'Ideal Self', 'Real Self', and 'Self-perceived by students' may support reflection on teacher's professional work (Fisher & Rickards, 1995, 1998). This may be the most valuable contribution that the application of the QTSI-Albanian version could give to the education system in Kosovo, since enabling reflective teaching is a targeted milestone intensively addressed during the last decade in the country (Berisha Kida, 2017; MEST, 2016; 2017).

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Biographical note

Edona Berisha Kida has a PhD in psychology, finished in Tirana University-Albania. Her research interests are mainly in the field of clinical and educational psychology with current research focusing on trauma transmission through education system. Prior to her PhD, she studied at Pristine University, where she completed a M.Sc. degree in Child/School Clinical Psychology. Her main orientation is in cognitive behavioural therapy. She lectures psychology subjects at Faculty of Education/Pristine University. During 2008-2009 she has successfully finished one-year training on Higher Education Academic Practice at University of Bedfordshire/England. She was also actively involved in establishing national policies for preventing and eliminating worst forms of child labour (including trafficking) in Kosovo.

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doi: 10.26529/cepsj.1005

Janez Vogrinc and Blerim Saqipi, *Research in Education Sciences: Conceptual and Methodological Perspectives*, Albas Tiranë, 2019; 112 pp.: ISBN: 978-9928-282-69-9

Reviewed by Žan Korošec[1]

Scientific monographs pertaining to the discipline of pedagogical methodology are not scarce. However, they tend to be fixated upon only one paradigm, focusing on a narrow range of approaches, addressing selected chapters and meticulously delimiting individual research. Only rarely do they extend their reach across the spectrum. Vogrinc and Saqipi's work does not adhere to this logic of exhaustively tackling one or a few particular and distinct subject areas, as they admit in the introduction, stating that the book "is a mixture of summarising existing knowledge and providing critical views on issues that need closer attention" (Vogrinc & Saqipi, 2019, p. 8). The result of their decision is a 112-page publication that discusses theoretical, quantitative and qualitative research, further elaborates what constitutes a case study and action research, and then concludes with a description of ethical standards in education research and research literacy in teacher education. Degrees of intensive specificity are seldom encountered throughout the book, yet we dare claim this was not the authors' objective. Their intention was rather to provide a comprehensive overview of what pedagogical methodology incorporates under various types of research and to offer referential material for subsequent explorations.

After the introductory paragraphs, the authors present theoretical research, promptly establishing the impression that theoretical research is in no way inferior to empirical research. This is quite significant, as theoretical research is elsewhere often neglected, merely mentioned or crudely explained

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as though it were a subpar variant. As the authors elucidate, the fundamental distinction between theoretical and empirical research does not revolve around some suppositional notion of quality, but relates to the source of data, ergo, what is employed in order to ultimately answer the posed research questions: literature analysis or field-amassed information. Despite perhaps not having such a rigidly prescribed process in contrast to other research types, theoretical research still adds new findings to the existing body of knowledge, and is thus a fully applicable and permissible option in education sciences, a fact that the authors continually emphasise. Moreover, Vogrinc and Saqipi detail the definition, typical structure and types of theoretical research, and provide clear guidelines about writing a report. The chapters referring to theoretical research are therefore structured in a way that avoids ambiguity in understanding and delivers all of the key elements required for implementation.

The authors then turn to quantitative research, first describing its philosophical origin, that is, positivism. The latter is delineated to supply context and to stress the corresponding importance of measurement, causality, generalisation and replication. The section reserved for quantitative research exhibits a gradual deconstruction of its linear steps, naturally commencing with how to formulate a research problem. Whether addressing the latter or dealing with sampling, criteria for assessing the quality of instruments, variables or statistical analysis, Vogrinc and Saqipi illustrate what each step in precisely devised quantitative research should encompass. Several constituent elements, such as inferential statistics, receive in-depth examination with the listing of suitable tests. These elements are not, however, explained in terms of exact usage, which is why we have argued that intensive specificity is not omnipresent throughout the book, nor should it be, considering the authors' aim was to establish a wider scope, in which auxiliary or ancillary commentaries might only thwart full content apprehension.

As was the case with quantitative research, the historical background of qualitative research receives attention, as well. The authors define it without any superfluous digressions, and then go on to indicate coexisting understandings of the definition of qualitative research, accentuating the main differences with quantitative research. It should be stressed that these chapters are composed in such a way that even students, prospective teachers, existing educators, etc. without an abundance of prior methodological knowledge would most likely be able to follow the content, as Vogrinc and Saqipi devote a great deal of time and space to the basics, as well as addressing more complex topics. The same can be said of the book as a whole, but it is even more apparent when it comes to the sections from qualitative research onwards. An example of this is their

simultaneous summaries, which compress the most vital information into a directly discernible and applicable format or scheme. The paragraphs on data collection and sampling in qualitative research provide enough descriptions for a systematic understanding, although the topic of qualitative data analysis, especially analytical induction, would benefit greatly from the addition of a specific example. The extenuating circumstances behind this "lack", as the authors themselves explain, are that there are no uniform rules as to how to conduct qualitative data analysis, causing researchers to opt for one of the most frequent approaches, be it analytical induction, content analysis or another.

Although often recognised as a distinct form of qualitative research, Vogrinc and Saqipi decided to treat case studies as an independent method. Through several summarised categorisations, the authors familiarise us with the case study types proposed by Stake, Yin, Bogdan and Biklen, and Stenhouse, where the intent is not to discover similarities, but to become aware of underlying conceptual bases and determining factors. Regarding the steps in implementing a case study, Vogrinc and Saqipi specify that one should not be preoccupied with assembling a typical case, as unusual, deviant or extreme groupings might eventually yield a more profound insight into the situation. What we are trying to argue is that there is not a rigid rationale prohibiting malleability and manoeuvrability, rather a plethora of dimensions that ought to be considered upon tackling a case study. The authors have managed to convey this perception that case studies are not inflexible. They present specific suggestions (e.g., concerning data triangulation, subjects' participation in interpretations, different modes of reporting) and list what should not be overlooked. Such guidelines are of crucial importance, particularly for new researchers, as interest in a certain educational phenomenon alone is not enough.

The last type of research presented by Vogrinc and Saqipi is action research. If we simplify the background rationale, educators will be more engaged if occupied by relevant professional problems. Such engagement frequently results in deep involvement and personal development, both conditioned by reflection. The latter is only one of four parts of the cycle, the others being the plan, action and observation, while the goal is to locate and implement a solution that would ultimately enhance one's teaching practice. What the authors eloquently express after these crucial presumptions is that not just any quotidian problem-solving tactic can be casually and freely equated with action research. Naturally, it is in teachers' interest to have as few issues as possible, to resolve difficulties that arise, but if specific situations do not receive a systematic confrontation that features a conceptualised design, we cannot discuss action research. In an effort to obviate confusion regarding what is and what is not

action research, the authors draw on many sources to multifacetedly outline the appropriate procedural inquiries and affiliated interventions. In other words, they provide an explicit framework that can be utilised in a specific situation.

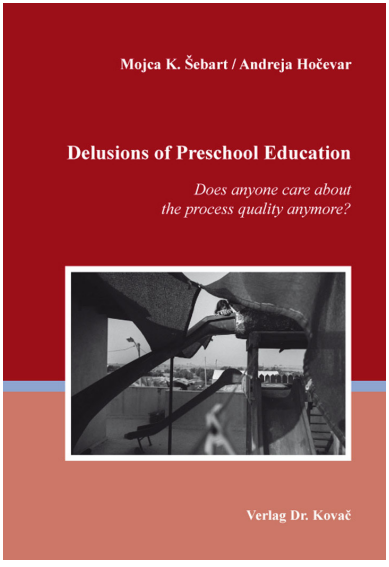
As stated above, the presentation of research varieties concludes with action research, after which Vogrinc and Saqipi focus on matters that transcend an individual approach, but are integral parts of all explorations: ethical standards in education research. The inclusion of ethical dilemmas and requirements is, in our opinion, a valuable addition, as it explains exactly what the responsibilities of the researcher are in relation to the participants. By articulating and unequivocally demanding the preservation of participants' rights, nothing can be taken for granted or ignorantly omitted, while leaving no room for objecting culpability in breaches of conduct. As the authors indicate, this is particularly necessary when dealing with underage and developmentally disabled people: it is crucial to know precisely what to guarantee and how to preserve their integrity. Many ethical imperatives might incipiently seem self-explanatory, yet by studying them further, one can perceive how unintentionally and quickly they can become convoluted. Consequently, warnings and preventive measures, such as those described by Vogrinc and Saqipi, might help avert potential crises.

The monograph's last section addresses research literacy in teacher education. We agree with the authors that in order to maintain and improve the quality of education, students of pedagogical programmes need to be acquainted with research procedures, and to be competent and properly qualified to use the methods. Stemming from Vogrinc and Saqipi's presentation of how research affects teacher identity and motivation, as well as the ability to independently update one's knowledge, to enhance one's skillset, etc., we would recommend this book to both pre-service and in-service teachers, as it would either provide them with a neatly packaged assortment of fundamental concepts and indispensable clarifications, thus referring them to narrower but more exacting materials, or assist them in reviving existing knowledge, maintaining retention and stimulating ensuing investigations.

doi: 10.26529/cepsj.1005

Mojca K. Šebart and Andreja Hočevar, *Delusions of Preschool Education: Does Anyone Care about the Process Quality Anymore?* Verlag Dr. Kovač, 2019; 133 pp.: ISBN: 978-3-339-11112-8

Reviewed by Damijan Štefanc[1]



In the scholarly monograph *Delusions of preschool education: Does anyone care about the process quality anymore?*, authors Mojca K. Šebart and Andreja Hočevar examine a very topical question in the field of pedagogical theory, especially with regard to preschool education. They start by asserting that quality preschool education is a central pillar of any quality education system, emphasising that many research studies confirm that preschool attendance has a considerable influence on children's current and future development, learning and academic achievements. In addition, it contributes significantly to equity in education in general, especially when disadvantaged children are concerned. It is thus not surprising that preschool education has become an interesting topic for education policymakers in European and global contexts, with a very significant impact on school policies in national contexts. Analysing international documents in the first part of the book, the authors demonstrate that the political tendencies generated and maintained by some key institutions (e.g., the OECD, the IMF, the EU) encourage countries to adopt measures that improve access to preschool education and that enable as many children as possible to participate in it. However, they do not encourage good quality programmes that could actually ensure every child's optimum development. Rather, they promote preschool education solutions that clearly strengthen the ideology of attaining the learning outcomes of preschool children and ensuring children are ready to enter school. This aspect specifically links institutional

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preschool education to learning outcomes in the child's later schooling, as well as to their achievements in adulthood. Investing resources in preschool education programmes is similarly primarily considered as investment in people, that is, "human capital". Such programme "quality" foregrounds the relationship between the length of participation in preschool education, learning outcomes (typically in national external tests and international knowledge assessment tests) at entry and higher levels of education, and investment in preschool education. According to the authors, what really matters is the medium- and long-term high profitability of public resources invested in preschool education, and decisionmakers are interested less in programme quality than programme efficiency (the "greatest possible profitability"). It is therefore not surprising that the authors find that international studies of preschool education predominantly focus on establishing its effectiveness, and on the development of the characteristics and knowledge of children that will help them respond to the demands of the labour market. Needless to say, this is reflected in preschool practice, too. The authors rely on an analysis of studies done in Nordic countries, concluding that current social and pedagogical preschool education guidelines have lost their significance. Nowadays, preschool education is perceived as investment in children. Consequently, preschool teachers' attention is being (re-)directed to economic standards and the preschool education quality indicators that are directly related to knowledge standards and children's learning outcomes. Preschool teachers' primary task is now evaluating children's learning outcomes and supervising each child's learning. This foregrounds children's readiness for school and risks scholarising preschools.

In the second part of the book, the authors demonstrate that Slovenia is following these tendencies. They carry out an analysis of the conceptual foundations of preschool quality assessment and assurance in Slovenia since 2000, concluding that at the beginning of this millennium, Slovenia had a good concept of preschool quality assessment and assurance, which was not fully implemented for a variety of reasons, mostly related to decisionmakers and financial resources. After becoming an EU member state, Slovenia concentrated more on preschool effectiveness than quality. This is confirmed by the analysis of the emerging national system of education quality assessment and assurance, which is largely financed by EU funds and follows the financier's expectations and requirements. The authors stress that there is a real danger that such a conceptualisation of preschool quality assessment and assurance will lead to the scholarisation of preschools, which is further supported by the fact that the area of *learning and teaching* is understood as a priority area that preschools should consider in the process of their (self-)evaluation.

In the last part of the monograph, the authors address preschool education in the countries of former Yugoslavia. This part of the book brings insights into the systems and conceptual solutions in preschool education quality assessment and assurance in Bosnia and Herzegovina, Croatia, Montenegro and Serbia, some of the countries that, together with Slovenia, constituted Yugoslavia until 1990. The authors write that all of these countries strive for increased shares of children participating in preschool education, but the shares nonetheless remain low, especially the shares of 1–3 year-olds. Preschool education access in these countries is significantly poorer for children in rural areas, as well as for children whose parents cannot afford to pay the fees or do not realise the importance of their children (especially of the first age group) attending preschool. Preschool children in the countries under discussion do not have equal opportunities to participate in quality preschool education, which raises the question of the equity of the education systems concerned. With regard to preschool education quality assessment and assurance, the countries apply two models: whereas Bosnia and Herzegovina and Montenegro measure preschool education quality using children's learning outcomes, Croatian and Serbian experts reject such monitoring and measuring of children's achievements. Of course, the question is how long this will remain the case, especially since the different strategic documents in the two countries emphasise the importance of lifelong learning, which relates to children's better employability when they grow up. Moreover, both countries provide a one-year preparation for school in the year before children enter school.

With their monograph, Mojca K. Šebart and Andreja Hočevar are the first in Slovenia to systematically address the political and ideological tendencies that lead, in the long term, to institutional preschool education that is primarily bound by economic efficiency, with pedagogical quality becoming an ever more marginal issue. In other words, the fundamental goals of preschool education – improving the lives of children and families, ensuring the optimum development of each child, and developing a critical, responsible and autonomous personality – are no longer in the foreground. This makes *Delusions of preschool education: Does anyone care about the process quality anymore?* a monograph that asks key questions in this time, not only systemic and pedagogical questions, but also wider social and ethical questions that require in-depth scientific approaches. It provides convincing answers to these questions, as well.

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Vol.10 | No3 | Year 2020

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ISSN 1855-9719