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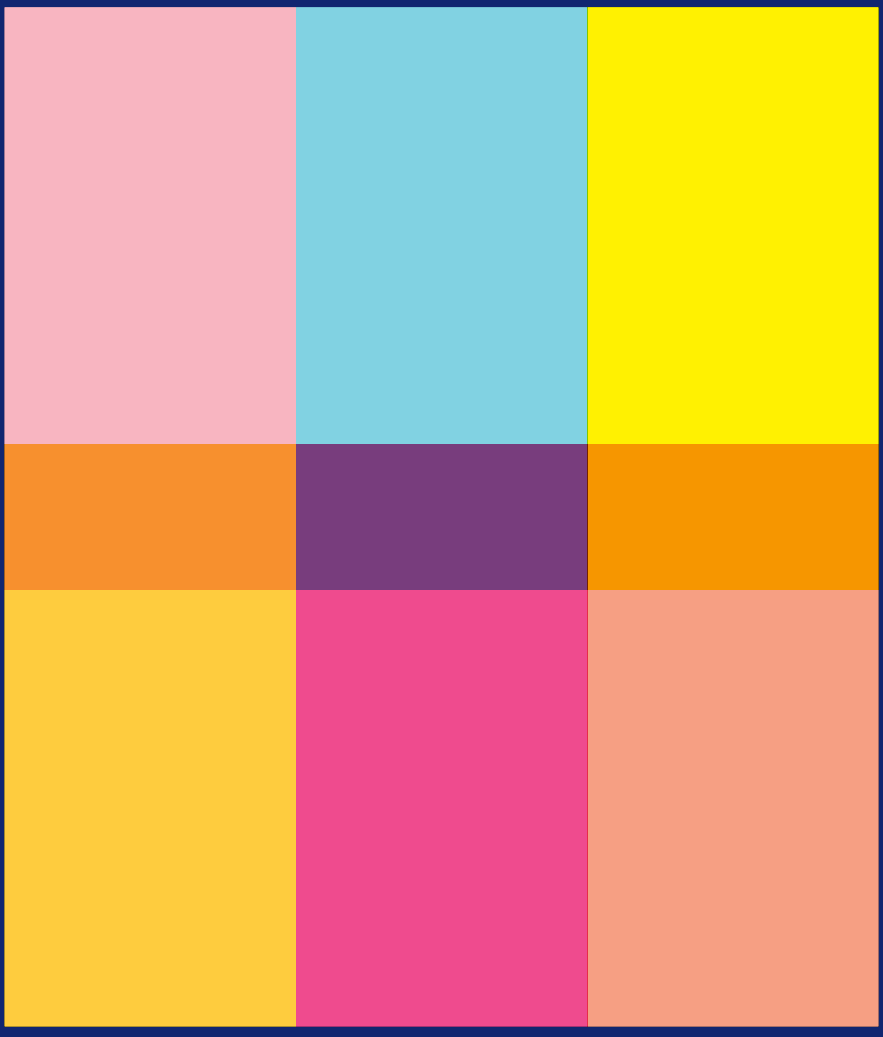

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C·E·P·S *Journal*

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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.

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Editorial

Curriculum Development in Contemporary Society

Educational reforms are underway in a number of countries. As a prominent factor in societal development as well as in the personal development of individuals and their preparation for life in society, education has a significant task and role in society today.

The question of the national curriculum is largely a question of what kind of society we live in and what kind of society we want to create to provide a context for the full development of individuals as human beings. This is especially true of the curriculum, which is part of the essence of the education system.

As has been stated by Andy Hargreaves (2003), Manuel Castels (1996), Daniel Bell (1999), and many other social theorists, today's society is currently at a turning point from an industrial society to a post-industrial and knowledge-based society. We are consequently witnessing the emergence of a knowledge-intensive economy and the globalisation of markets and capital, accompanied by intense competition and rapid changes in knowledge and technology. According to Roger Standaert (2003), these are some of the current developments that have brought about significant structural changes in society and its sub-areas, as well as in the personal lives, lifestyles, and social relations of individuals.

Facing new challenges, educational policies have seeking educational changes that will respond to these developments, including adjusting national curricula to the needs of the knowledge-based society.

Connecting educational changes with the currently dominated neoliberal politics and neo-conservativism, Michael W. Apple (2004) points out that the current educational reforms lead to the imposing of national curricula, the mechanisms of standardisation and evaluation of students learning outcomes and quality of schools, that is, the regulation of education that ensures the privilege of students with a higher socio-economic and cultural status, thus contributing to the educational and social inequality.

The process of planning and implementing national curricula is a complex process, economically, politically, and socially. It raises numerous issues at individual and societal levels and requires continuous and critical theoretical and empirical analysis.

Within that context in this focus issue of the CEPS Journal are questions such as: What are the goals of educational and curricular policy? What is the purpose of curriculum change? What competences will students need

in the future as individuals living in an increasingly changing and uncertain society? What kind of knowledge and learning/teaching practices and environments should be provided? How can an inclusive and just national curriculum be ensured? How can relevant curricular stakeholders (e.g., teachers, school leaders, parents, students) be prepared for and included in curricular change and its implementation?

The intention of this special issue of the CEPS Journal is to critically reflect on these and other questions related to today's curriculum and its development in different educational and societal contexts from various scientific perspectives. The issue consists of eight contributions: five of them relate to the Journal's call for papers (focus section), two are in the varia section, and one is a book review.

The first paper, *The Heritage of the Cold War in Contemporary Curricula and Educational Reforms* by Tomislav Topolovčan and Snježana Dubovicki, deals with the implications of the Cold War, including the military race, on national curricula and educational reforms implemented in the second half of the 20th century and the 21st century. The implications of the Cold War in relation to the concept and development of the socio-humanistic curriculum have also been examined. Analysing the conceptual and historical development of the curriculum, the paper discusses the connection of the Cold War requests/needs for scientific and technological development with an increasing role of behavioural psychology in the growth of new teaching and learning approaches, with turnaround towards the quantification of learning outcomes and quality of education. The analysis also points out that these processes were followed by the domination of the Anglo-Saxon concept of curriculum at the expanse of the historical European concept of education, mostly based on German didactic thought of humanistic approaches to education and curriculum. Such developments have resulted in a reduction of the socio-humanistic content in national curricula and increased the importance of the STEM area, in a lack of humanistic and holistic approach towards education. A significant conclusion of the paper is that there is a need for broad discussions on the impacts of the Cold War on the development of modern education and curricula in current society. In this context, this challenging paper opens up questions about the implications of the Cold War on the development of education in relation to other contemporary social trends, such as neoliberalism.

The second paper, *Understanding the Relation of Policy Discourse and Re-Conceptualising Curriculum: A Kosovo Perspective on a New Meaning of Context* by Blerim Saqipi, is focused on an analysis of the meaning of context in the process of implementing curriculum reforms. The analysis is carried out on

two Kosovo curriculum reforms in the previous two decades with the purpose of demonstrating how education systems deal with the transfer of international ideas and policy models and struggle for their successful implementation. To determine the policy orientation of the reforms, the curriculum policies from 2001 and 2011 were used as units of analysis and examined using the debate between the Didaktik Theory and Curriculum Theory Traditions. Work plans and reports of the Ministry of Education, Science and Technology were used to analyse the implementation practice for 2011 curriculum implementation. Discursive institutionalism was used as a framework for their analysis. To identify the challenges and impacts of the societal and educational context on the success of the curriculum reforms, the contextual factors were also explored. The analysis reveals that the Kosovo context and education system did not succeed in providing sufficient possibilities for a successful implementation of the curriculum reforms. The education system, with its limited professional capacities and scarce resources, points to the need for more school-based activities and critical reflection on the adopting and tailoring of specific curriculum policies and models in the given context.

The third paper relating to the main topic of this issue, *Curriculum Reform in Indonesia: Moving from an Exclusive to Inclusive Curriculum* by Amirul Mukminin, Akhmad Habibi, Lantip Diat Prasojo, Abdullah Idi and Afreni Hamidah, analyses the national curriculum in Indonesia, questioning the possibilities of its transition from an exclusive to inclusive curriculum so that all students can succeed academically and socially. In addition to the definitions of an exclusive and an inclusive curriculum, the study seeks to answer the question of what components of the national curriculum should be reformed, and what kind of leadership is needed to successfully reform it from an exclusive to an inclusive curriculum. The analysis provides a very informative description of the development of the national curriculum in Indonesia from 1968 to 2013. As a solution, the paper proposes the ASPIRE model of inclusive leadership as well as a model of an inclusive curriculum that consists of the following components: developing different historical perspectives, different cultural awareness, developing intercultural competence, combating racism, sexism, all forms of prejudice and discrimination, raising awareness of the state of the planet and building social skills. Although the article is focused on the Indonesian curriculum, it contributes to the development of an inclusive curriculum in a broader context, especially in multicultural countries that have a centralised exclusive national curriculum.

The paper entitled *Teachers' Acceptance of Curriculum Reform in the Czech Republic: One Decade Later* written by Karolína Pešková, Michaela

Spurná and Petr Knecht contributes to the main topic by analysing primary and lower secondary teachers' attitudes towards the current curriculum reform in the Czech Republic. The paper is based on the results of empirical research carried out on a sample of 701 teachers in 2016. A questionnaire was distributed to teachers in an electronic version via headmasters. The main research goals were to identify attitudes of teachers towards the curriculum reform 10 years after its implementation and the factors that influence the teachers' attitudes toward the reform. The results indicate that teachers hold rather negative and neutral attitudes to the reform. Three factors that significantly influence the teachers' attitudes were identified: the approach to the curriculum, school level, and the post that teachers have within the curriculum implementation. According to the findings, the teachers' acceptance of the reform tends to increase when teachers use curriculum documents regularly and have higher self-efficacy. The research results do not point to a significant difference in the attitudes of teachers regarding their gender, the length of the teaching experience, and the involvement of teachers in school management.

The final paper in the focus section, *Research-Based Learning in Initial Teacher Education in Catalonia* written by Ingrid Agud and Georgeta Ion, discusses changes in the teaching profession in the contemporary society marked by the shift from teachers' role as 'knowledge users' towards their role as 'knowledge creators'. It draws on the preliminary empirical findings of a project focused on an investigation of the development of research competence in initial teacher education, as one of the core teachers' skills. A questionnaire was administered in 2016; 113 students for the Primary Teacher Education Degree at the Universitat Autonoma de Barcelona completed the questionnaire. Also, in order to review the research component of initial teacher education curricula, a documental analysis of the syllabus of each course of the BA in Primary education was conducted. The questionnaire findings indicate that students are more consumers than producers of research. The results of the analysis of the syllabi are in accordance with the questionnaire findings. Specifically, they reveal a very low representation of the research component in the curriculum of the BA programme in teacher education. These preliminary findings indicate the problem of traditional teacher education and emphasise the need for its modernisation as well as the need for a deeper investigation of teacher education.

The VARIA section consists of two papers dealing with teachers and, therefore, is thematically connected with the focus topic of this special issue. The paper, *Development of Teachers' Beliefs as a Core Component of their Professional Identity in Initial Teacher Education: A Longitudinal Perspective by* Vlasta Vizek Vidović and Vlatka Domović, is a research report presenting the findings

on the shift in professional beliefs of students attending initial teacher education in Croatia. The focus is on the student teachers who are preparing for class teaching and the shift in their beliefs about the teacher-pupil roles. The research was carried out in two waves, at the beginning and at the end of the five-year study programme, using a metaphor technique derived from the cognitive theory of metaphor; 62 students participated in the project. The findings indicate that the study programme did not have a significant impact on changes in the student's beliefs.

As its title says, the article *The Teacher as a Lesson Designer* written by Ljerka Jukić Matić also explores teachers. Its main goal is to explain how a mathematics teacher designs a lesson using the mathematics textbook. The research on which the paper is based was designed as a case study. Lesson observations and pre-lessons and post-lessons interviews were conducted. The textbook content was also analysed. The research design draws on the analytical framework created by Leshota (2015). The results indicate that, during lesson planning and the lesson itself, the teacher was using the textbook in a way that demonstrates the teacher's shift from a mediator of the curriculum to a designer of the teaching. Since only one teacher participated in the research, the findings do not allow drawing of general inferences, but they provide an in-depth and extensive description of the researched issue.

This CEPS Journal issue also includes a review on the book: *Contextualizing Teaching to Improve Learning*: *The Case of Science and Geography*, Nova Science Publishers: New York, NY, 2017; 303 pp., edited by Laurinda Leite, Luis Dourado, Ana S. Afonso and Sofia Morgado.

Branislava Baranović

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The Heritage of the Cold War in Contemporary Curricula and Educational Reforms

Tomislav Topolovčan*[1] and Snježana Dubovicki[2]

Using a theoretical-critical and historical approach, this paper analyses the implications of the Cold War in national curricula and educational reforms of the second half of the 20th century with emphasis on the 21st century. The context of the time after the Second World War and the beginning of the Cold War is shown, as well as the social and political changes that are significant for education and were prompted by the wars. The emergence of the international Organization for Economic Cooperation and Development (OECD) (whose focus is not educational but economic) and the role of behavioural psychology were also analysed, which explained their significance in later educational reforms. The role of the Cold War in reducing socio-humanistic teaching contents and the implementation of natural sciences and mathematics has also been explained. The synthesis of the analysed aspects suggests that the Cold War military and technological race resulted in the implementation of the STEM area, thus the measurability of learning outcomes, which influenced the psychologisation, standardisation, economisation, and globalisation of education. Most of the current (un)successful national educational and curricular reforms were initiated in that direction without respect for the social, cultural, and historical features of individual countries. These changes have left a mark in pedagogy, in which the humanistic approach appears to counteract other approaches. Some educational systems demonstrate a shift from such trends, from the technical-scientific curriculum towards the didactic tradition of Bildung and the philosophy of education. The reasons can be found in the above-average results on international standardised evaluations of those countries that have national curricula, in contrast to what is recommended by the globalisation and standardisation of education as some of the elements of the Cold War heritage.

Keywords: cold war, educational reform, humanistic-oriented curriculum, OECD, PISA

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Dediščina hladne vojne v sodobnih učnih načrtih in izobraževalnih prenovah

Tomislav Topolovčan in Snježana Dubovicki

V tem prispevku analiziramo učinke hladne vojne na nacionalne kurikulume in izobraževalne prenove v drugi polovici 20. stoletja s poudarkom na 21. stoletju, pri čemer smo uporabili teoretično-kritičen in zgodovinski pristop. Prikazani so kontekst obdobja po drugi svetovni vojni ter začetek hladne vojne ter družbene in politične spremembe, pomembne za izobraževanje, ki so jih spodbudile vojne. Prav tako smo analizirali ustanovitev mednarodne Organizacije za gospodarsko sodelovanje in razvoj (OECD) (ki se ne osredinja na izobraževanje, ampak na gospodarstvo) in vlogo vedenjske psihologije, ki sta osvetlili njun pomen za poznejše izobraževalne prenove. Pojasnjena je bila tudi vloga hladne vojne pri krčenju družbeno-humanističnih učnih vsebin ter vpeljevanju naravoslovja in matematike. Sinteza analiziranih vidikov kaže, da sta vojaška in tehnološka tekma hladne vojne učinkovali na področje STEM in merljivost učnih rezultatov, kar je vplivalo na psihologizacijo, standardizacijo, ekonomizacijo in na globalizacijo izobraževanja. Večina zdajšnjih (ne)uspešnih nacionalnih izobraževalnih in kurikularnih prenov se je začela v tej smeri ter ni upoštevala socialnih, kulturnih in zgodovinskih značilnosti posameznih držav. Te spremembe so močno vplivale na pedagogiko, za katero se zdi, da humanistični pristop nasprotuje drugim pristopom. V nekaterih izobraževalnih sistemih je viden odmik od teh trendov, od tehnično-znanstvenega kurikuluma k didaktični tradiciji in filozofiji izobraževanja. Razloge lahko najdemo v nadpovprečnih rezultatih, doseženih na mednarodnih standardiziranih evalvacijah v državah z nacionalnimi kurikulumi, v nasprotju s priporočili globalizacije in standardizacije izobraževanja kot nekaterimi elementi dediščine hladne vojne.

Ključne besede: hladna vojna, izobraževalna prenova, humanistično usmerjen kurikulum, OECD, PISA

Introduction

Pedagogical science stands before a crossroads. Many phenomena studied in pedagogy are closely related to philosophy, psychology, and sociology (and other sciences).[3] With the help of knowledge and achievements from, for example, philosophical, psychological, or sociological perspectives, one seeks to face pedagogical issues and dilemmas. Many sciences dabble in education. However, the greatest significance goes to pedagogy, which puts education at the centre of its profession. Didactics, as one of the branches of pedagogy, strives for a more successful approach to the educational process. Attempting to make the teaching process as successful as possible, didactics focus on various didactic phenomena that enhance and enrich teaching. One of these phenomena is certainly a reflection of the current theoretical frameworks of the curriculum, that previously had different orientations, which could be reflected in the learning outcomes but also through the influence of educational reforms.

In contrast, with the turbulent development of the phenomenology of education, the last three decades have been marked by turbulent global economic, technological, social, and political changes. One of the crucial moments from the end of the previous century was the fall of the totalitarian communist bloc in Europe, the collapse of the individual states, and the emergence of new ones, as well as the (apparent) end of the Cold War. Starting at the end of the Second World War, the Cold War had an impact on the development of the economy, technology, culture, society and politics of the western and eastern bloc, and the rest of the world. However, the question is to what extent the circumstances of the Cold War had the implications on the education both at national and global levels and whether they still are manifest (Evans, 2011; Hartman, 2008; Tröhler, 2011; Tröhler & Barbau, 2011).

Modern theoretical, conceptual approaches and practical implications are based on the Anglo-Saxon approach towards the curriculum. This approach is based on behavioural psychology and cost-benefit correlation analysis of the curriculum. The approach mostly originated from the Cold War's influence on education. The implementation of practical needs arising from the Cold War has controversial practical implications in curricula, which conflict with the historical European (mostly German) concept of education (German: *Bildung*). In other words, the Anglo-Saxon, Cold War concept of curriculum lacks a humanistic approach towards education. The absence of such an approach is an

3 The relationship between pedagogy, pedagogical science, and some other approaches such as the approach to education from the perspective of that which is called educational science (germ. *Erziehungswissenschaft*) can be seen at Gudjons (1993).

enormous defect in modern education and the conceptualisation of future curricula. Therefore, it is evident that there is a lack of discourse and debate on the relationship of behaviourist, Cold War approaches towards (national) curricula and the humanistic concept of curricula to bring about the conclusion on the value of some curriculum elements of modern education.

In the direction of the aforementioned changes and trends, this paper aims to analyse the implications of the Cold War on education. The historical and conceptual development of the curriculum will be analysed as well as the beginning of the formation of the role of the Cold War. Then, the role of psychology on the formation of new approaches towards learning and teaching will be analysed, as well as the reduction of socio-humanistic content in curricula and their substitution with the content from the STEM area. In this context, the PISA assessment and the role of the OECD will also be analysed. Furthermore, the significance of the European (mostly German) didactic thought of the humanistic approach, as well as the methodological turnaround towards the quantitative research, will be analysed.

In this regard, this paper aims to describe and correlate the features of the curriculum, the role of the Cold War in the formation of modern education, and the relationship of the mentioned elements towards the humanistic and holistic approach to curriculum research. The methodology is based on a historical, theoretical, and comparative study of historical facts and theoretical concepts. The synthesis of the mentioned educational phenomena will attempt to explain, define, and understand the contemporary trends of curriculum development and educational reforms.

The Search for the Contemporary Curriculum – A Look to the Past with a Projection to the Present

If we wanted to define what the modern curriculum implies today, we would first have to answer the question of what a curriculum is. Different definitions are based on different theoretical orientations, and they do not exclude one another, but emphasise the different elements of the curriculum (e.g., Pinar, 2003; Walker, 2003).

The term *curriculum* is taken from US terminology where didactics has not been developed as a branch of pedagogy, whereas the theory of curriculum covers this area in countries with a longer didactic tradition, which therefore have a different approach to this phenomenon. The original meaning of the Latin word *curriculum* is a course that represents a relatively optimum way of acting and reaching a goal.

Poljak (1984) sets the emergence of the term 'curriculum' in pedagogy at the turn from the 16th to the 17th centuries, when it meant the order of learning content by age, which has been, for a long time (even today) identified with the contemporary curriculum. Ratke and Komensky, at the end of the 16th and early 17th centuries, spread the ancient concept of the curriculum towards Western Europe, with their didactic ideas. At that time, the curriculum denoted the scope of knowledge that young people needed to adopt in order to prepare themselves for life and work in their social environment. Since the 18th century, German-speaking areas used the term 'teaching plan and programme', while in the Anglo-Saxon countries still use the term 'curriculum'. From the 1920s, with the appearance of the first scientific analyses of the school curriculum in the US and up to now, the development of the curriculum and its interpretation has undergone several phases (Wiles & Bondi, 1998). The discussion on the curriculum after the United States also affects Europe, and the concept of curriculum experiences an extension of meaning that has not always coincided with the traditional concept of the curriculum. From that time on, the curriculum implies the prescribing of aims and tasks of learning and teaching, teaching contents and topics, methods, media, and evaluation procedures.

The concept of the curriculum extended to the overall function of the school in the 1930s. In the early 1950s, the technological, developmental, or processual forms of the curriculum were placed in the foreground, meaning the procedures that define the curriculum as the content of learning. In the 1970s and '80s, the concept of curriculum expands to the conditions in which learning takes place and encompasses the problem of applying the curriculum. The curriculum conditioned a new systematisation of knowledge sources, as well as new organisation and methods of work. Since that, nothing has been the same in pedagogy and education as it was prior to the curriculum (Mijatović, 1996). Zimmermann (1977) distinguishes four periods in the curricular development since the 1950s: the *1st* period is marked by the philosophy of spiritual-scientific pedagogy; the *2nd* period is marked by Robinsohn's documents that interpret the curricular development as a pedagogical-political requirement, not as a concept and a methodical requirement; the *3rd* period emphasises getting closer to the practice and school with the help of scientifically-based empirical methods, the creation of subject curricula, the formation of the so-called open curriculum, qualitative methodology (action research); the *4th* period begins in the mid-1970s and emphasises the question of curricular planning of the entire teaching.

Speaking of the types of curricula, we can say that different authors cite different types. Glatthorn (2000) states the following types or levels of curriculum: *1) recommended, 2) written or official, 3) derived or taught, 4) supportive,*

5) measured/estimated, 6) taught, and *7) hidden*. Furthermore, two categories of curriculum can be mentioned: 1) non-scientific or non-technical and 2) scientific or technical, which also lists subcategories: behavioural, managerial and systematic (Domović, 2009).

Wojtczak (2002) defines curriculum as a teaching plan and programme with a list of aims to be achieved, content to be taught, and methods to be used for learning, teaching and evaluation. Hrvatić and Piršl (2007) define the curriculum as a set of planned and implicit determinants that guide the educational process and refer to the tasks and content that are consistently derived from the aim, also to organisational forms, methods of work and procedures for checking the success of the teaching process. Tanner (1980) is guided by the definition of the curriculum as planned and guided learning whose expected outcomes are described by the systematic structure of knowledge and experience in the school environment, with the goal of the continuous and complete development of students' personal and social competences.

Matijević and Rajić (2015) point out that in the first half of the 20th century curricular changes took place under the strong influence of the reform pedagogy movement, while in the latter half of the century these changes took place under the influence of pedagogical and psychological scientific discoveries, theories of learning, and curricular theories.

Smith (2000) speaks of the types of curricular orientation and lists four basic curriculum approaches: (1) curriculum as a list of knowledge to be transferred, (2) curriculum as an endeavour for certain achievements in students, (3) a process-oriented curriculum (4) practice-oriented curriculum. If the curriculum has a liberal orientation, the emphasis will be put on the traditional values and elements of Western cultural heritage (founder: C. W. Taylor). The curriculum that has a scientific orientation will emphasise the carrying out of the activities that will prepare a student for life by focusing on setting up tasks (founders: Franklin Bobbitt and Ralph W. Tyler), while the curriculum with a developmental orientation will keep track of the developmental phases of an individual, and accordingly strive to meet his/her interests and needs (founder: G. Stanley Hall). The curriculum orientated towards the social context considers educational institutions (schools, faculties) that have a major impact on the changes in social relations and social justice, and the main task of such a curriculum is to make young people aware and stimulate their sensitivity towards corruption, as well as sexual and any other discrimination (founder: Lester Frank Ward).

To create a productive curriculum, it is important to accept the methodology of its reconstruction, the participation of all interested factors and the understanding of the mentioned construction as a dynamic process of constant

creation and formation (Miljak, 2005). Curricular reconstruction takes place on the go, as a kind of simultaneous, partner curriculum that has its own: philosophy (aims, tasks, expectations), methodology (action, participatory), practice (event and participation) and result (the state of inner satisfaction, competence).

Marsh (2004) speaks of the fundamental categories that are extremely significant for every approach to curriculum development. He systematised them and divided them into the five most important categories: student's point of view; teacher's competencies; a strategy of making a curriculum, planning and development and curricular management. All five of these curricular components are essential for the successful functioning of the educational institution to which the curriculum refers.

Looking at the curriculum as a whole, it is evident that it had a long and meaningful history. Different theoretical approaches in curricula and didactics also provided specific methods, and teaching based on such approaches focused on specific learning outcomes. The multitude of different approaches to the curriculum offers a teaching staff several ways to successfully approach the implementation of the curriculum that would follow curricular ideas but also had the opportunity to implement the individual interests and needs of its participants. The relatively recent and original approach to understanding the curriculum comes from an aspect of chaos theory (Doll, 1993). From that point of view, William E. Doll recognises the elements of chaos theory in teaching and learning (i.e. teaching itself); he believes that education and learning are very flexible, fluent, creative, self-regulating, autopoietic phenomena that shape the settings of constructivist teaching (Doll, 1993; Topolovčan, Rajić, & Matijević, 2017). The curriculum with a starting point in critical-constructive didactics[4] would be the one that makes room for the social interaction of teachers and students, but also of students among themselves, one that respects student interests and desires, which prefers learning by means of discovery; in such a curriculum, emphasis would be on the independent activity of students who would develop self-determination, solidarity, and co-determination.

Regardless of different definitions and approaches towards curricula, the most common practical form is a **scientific or technical curriculum**, which was evidently established in the circumstances of the Cold War.

4 Didactics as the theory of education can be seen in the context of critical-constructive educational science, we approach it as the theory of teaching, as cybernetics-information theory, the theory of curriculum, and as critical theory of teaching (Gudjons, Teske, &Winkel, 1992).

The Genesis of Contemporary Global Approaches to Education

Shortly after World War Two, the illusory co-operation between the US and the USSR disappeared, and a perilous international rivalry forms based on various political, economic, and ideological elements. The USSR attempted to portray the US and the democratic states as bourgeois and exploitative nations. The US considered the USSR a backward state with a determined ideology while considering itself a state 'free of ideology' (Tröhler, 2014). The US also portrayed itself as a world leader of democracy, freedom, citizenship, development and technological, economic and cultural progress and development.

The turning point of the US self-promotion as the leader of the free and advanced part of the world occurred in 1957 when the USSR launched Sputnik into space. That caused the so-called 'Sputnik shock' in the US. Political and expert establishment in the US analysed the situation and concluded that the USSR made the first launch in space because it had invested more material, human and financial resources into science and education. Such a conclusion initiated a new analysis of education in the US, increased investment in education, and encouraged the reform of education and the education system. Education in the US became a political issue predetermined for economists, politicians and experts from different fields of science and significantly less so for pedagogues.[5]

As a result of these events, in 1959, the Woods Hole Conference was held in Massachusetts, USA. The conference, under the leadership of Jerome Bruner, brought together 34 experts from mathematics, biology, psychology, and the like (the fewest experts were from the field of pedagogy) (Bruner, 1999). Conclusions of the conference went in the direction of 'technical' and behavioural approaches to education and curricula and focusing on organising teaching that enabled 'effective' learning. The implications of this conference also emphasised teaching STEM areas, but also on teaching via scientific methods (i.e., inquiry-based learning). These events initiated a **technocratic approach** towards the change and development of educational reform and curricular changes in the US.

Consequently, learning and learning outcomes began to be seen as products that can be expertly produced by appropriate instruction. Furthermore, a technocratic approach began to manifest itself in the dominance of

5 A well-known statement from that time by US Economic Counsellor Walter Heller at the first OECD Education Conference: 'May I say, that, in this context, the fight for education is too important to be left solely to the educators' (OECD, 1961, according to Tröhler, 2013a).

decision-making in education (education system) by economic, economic, and political experts, not by educators (Tröhler, 2014). Thus began a substitution of teachers and educators, starting with the so-called experts for education. Successively to these processes in educational policy, a dominance of significant financial investments in education began, which triggered a process of **economising the education**. In other words, the premise formed that one could boost economic prosperity and take leadership in the Cold War race with the USSR by increasing financial investment in education.

The Cold War race resulted in the reduction of socio-humanistic teaching content, and the implementation of content from the STEM area (Autio, 2017). Emphasis was placed on teaching content from the field of mathematics, natural sciences and foreign languages. Parallelly, the technocratic approach categorised the directions and movements of reform (progressive) pedagogy, in general, the significance of John Dewey's ideas in the US, as inappropriate for teaching in the context of the Cold War (Autio, 2017; Tröhler, 2011). This is also the beginning of stagnation of the development and expansion of reform pedagogy on a global level.

Technocratic and economic approaches and the need for 'effective' learning updated the behavioural approach to teaching. Behavioural psychology took the lead in the organisation of teaching and learning. That is especially significant because attempts were undertaken to make learning as a product operational, visible, and measurable. The behavioural approach of stimulation and reaction (S-R) enabled (apparently) the premise that with precise (effective) teaching one caused exactly the desired learning and outcomes, and then in terms of visible actions, one makes it perceptible and measurable. This approach supported teaching in which students are offered factual knowledge that is specifically controlled and approved. This kind of system, with proper control, could successfully achieve the implementation of the set goals. Thus, the constructed curriculum does not allow freedom to students or teachers: it is managed mostly from the outside (via other educational institutions). By understanding the didactics, and by using the theory of curriculum, we come to the knowledge that there is no so-called 'curricular didactic model' because, according to these two terms, such terminological determination would not have any particular sense (Möller, 1992). Therefore, it is handled as a target-oriented approach. This model was inspired by the behaviourism-oriented works of Skinner, Tyler, and Bloom.

Consequently, it is not surprising that military psychologists Jerome Bruner, Torsten Husén, Skinner, Robert Gagné, Leslie Briggs, John Flanagan et al. (Reiser, 2001; Tröhler, 2013a) were given the task of organising the teaching

in the Cold War context; those psychologists had established behaviourism in learning, while training soldiers in World War II. In this regard, especially in the military perspective, the original pedagogical educational dimension of learning and teaching is negligible. Skills and cognitive abilities are of importance, and they can be developed via exercising (drill). This has significantly contributed to the processes of the **psychologisation of education**. Based on these premises, one can say that the philosophy of education has been eliminated from education and been by the psychology of education.

With the processes of psychologisation and technocration, and especially the economisation of education, financial investments had to be profitable. Thus began the standardisation of education in the US, above all of the learning outcomes and their evaluation. In this respect, standardised national external evaluations came to life. This degraded the role of the teaching profession, as evaluation was an immanent element of it (Autio, 2017). Thus, feedback to the authorities on the effects of investing in education as well as the (apparent) possibility of prediction of certain social, military, political, and economic trends was formed.

Immediately after the Second World War, in favour of the psychologisation of education, the formation of the basic components of the curriculum (i.e. Tyler's Rational) also took place. This also favoured Bloom's formation of taxonomy (Doll, 1993). Alongside the technocratic and expert approach, by implementing curricular content of the STEM area and by economising, standardising and educating psychologists, the implicit educational form of the Cold War influence has taken its manifest form, which will later be implicated in curricula and educational reforms at both the national and global levels.

Cold War Implications in Curricula and Educational Reforms

One collateral element of the Cold War was the formation of the *Organization for Economic Co-operation and Development* (OECD) in 1961. According to Tröhler (2014), the OECD is the successor of the *Organization for European Economic Development* (OEEC), which was initially founded for the development of European states. Due to the internal trade opposition of individual European states, the OEEC expanded to non-European countries, primarily Canada and the US (Tröhler, 2014). That also made the US the leader of the idea of international development.[6] Although the OECD was not conceived as a Cold War element, with the dominance of the US, it became an instrument of

6 Just as the USSR was the leader of the Warsaw Pact, i.e. the Eastern bloc.

the competition between the NATO Pact and the Warsaw Pact. That is evident from it directing its action to assisting in the development of underdeveloped, non-aligned countries, but also those in danger of the USSR influence (Tröhler, 2014). Soon the OECD also became focused on education, which had been labelled as a predictor of economic development. This placed the management of education policies at an international level, i.e. the process of globalisation of education was stimulated. In this regard, Sing (2002) points out that the globalisation wave encompassed all spheres of individual life and became the centre of interest of all sciences (early 21st century). In this regard, it is possible to follow the role of globalisation, which has been offered to smaller countries such as Croatia, as a possibility and/or, which in this context primarily refers to education at all levels.

In contrast, parallel to the globalisation of education and the Cold War meddling in education, with the premise of education being an element of the Cold War race as well as a predictor of economic development, what has recently been called the *pedagogisation of social problems began* (Germ. *Pädagogisierung*) (Smeyers & Depaepe, 2008). *The pedagogisation of (all) social problems is to perceive (mainly by the state administration) that educational actions (education, schools, educational institutions, lifelong learning) can solve (all) social problems (health, cultural, financial, etc.).*

Symptomatic to all of the mentioned Cold War phenomena in curricula and educational reforms, PISA (*Programme for International Student Assessment*) was formed and developed in the last two decades. The PISA evaluation was established by the OECD to measure and compare the individual competencies of 15-year-olds and the prediction of economic development. What is also crucial regarding PISA evaluation, in relation to the Cold War tendencies of the US education policy in the middle of the previous century, and then the globalisation under the auspices of the OECD, is its focus that is put solely on competences and content in the fields of mathematics, natural sciences, and languages. Also, one of the implications of the Cold War is also seen in what is called the **medicalisation of education** (Tröhler, 2016). The medicalisation of education started in the 1970s and 1980s, and it signifies the substitution of educational research paradigm with the biological and medical research paradigm. This is particularly noticeable because the *Centre for Educational Research and Innovation* (CERI) is one of the institutions that is conducting such analyses, and the OECD participated in the formation of CERI in 1968 (Tröhler, 2016).

The Cold War pedagogisation of all social problems was seen especially in the reforms of the educational systems of individual states but guided by national globalist policies. In other words, the implications of the Cold War

are also reflected in educational reforms that have largely been accepted and adapted to the US tradition, which advocated a curriculum in which everything would be measurable, starting from the learning outcomes through grade scales, and curricular research itself. It is interesting that the standardisation, quantification, and economisation of education as a panacea of economic and Cold War political problems led to the need for a new wave of educational reforms. The famous Coleman Report[7] (1966) and Jencks Report (1972) have shown that investing in education did not provide the expected results, which required new educational reforms. A few years later, at the beginning of the 1980s, a report titled *A Nation at Risk* (1983) was issued, and it indicated that the educational system in the US, under the influence of particularly negative Cold War relations and the current economic crisis, did not meet the economic (and Cold War) needs. That triggered new reforms in the US. However, interestingly, under the influence of globalisation, the pedagogisation of social problems, the standardisation and economisation of education, as well as the implicit influence of the OECD, reforms around the world began. To support this interpretation of the implications of the Cold War in reforms, Sahlberg (2011) suggests that the *Global Educational Reform Movement* (GERM) began in the early 1980s. GERM is a manic global reformation of educational systems under the influence of the standardisation of education, standardised measurement, the privatisation and economisation of education, in which curricula are forced to include the implementation and evaluation of content and knowledge in mathematics, natural sciences and languages (Autio, 2017). The global reforms of national education systems mainly failed to achieve the desired results because they did not respect the social, cultural, and historical features of individual nations. Matijević and Rajić (2015) warn that most of the changes that took place in the school system and the teaching mainly referred to change of the duration of the elementary and/or obligatory school, and introducing or leaving behind some teaching courses, while classroom teaching (together with Educational Ecology) has largely followed the logic of frontal teaching. Significant changes also did not occur by introducing modern technologies (LCD projectors, PowerPoint presentations, and smart boards) into classes.

In contrast, Finland is one of the few countries that had success with its reforms; it implemented a successful educational reform by focusing more on the activities of students related to technology, handcrafts, and visual arts (19 hours a week or 684 lessons hours during compulsory schooling) (Matijević & Rajić, 2015). Finland has done the opposite of everything that OECD expected via

7 For a detailed insight into the significance of Coleman's reports, see the special issue of CEPS Journal (Sardoč & Gaber, 2016).

PISA. The Finns put an emphasis on socio-humanistic contents in curricula, neutralised standardisation, moved away from the behavioural theory of learning, maintained the culture of the philosophy of education (and not the psychology of education), provided teachers with autonomy, and implemented elements of the direction and movement of the reform pedagogy in state schools (Autio, 2017; Sahlberg, 2011). Sahlberg (2011) systematises the reform of the Finnish educational system and stresses that the reforms that are being implemented are directed towards the needs of teachers and students, not just the needs of society. Reforms in Finland continue and in the direction of halting the trend of increasing inequalities within schools and between schools, establishing regional equality and improving learning outcomes (Ouakrim-Soivio, 2016).

Methodological transformation

In addition to playing a significant role in curricular and educational reforms, the Cold War also had an impact on the research approaches and methodological frameworks of pedagogical research. The present situation in the research of the pedagogical and didactic phenomena is mainly due to the positivist approach, which asserts in the possibility of a correct understanding of natural and social phenomena, and that the basic task of science is to discover the real nature of reality and its true functioning. Such research has the purpose of achieving an objective understanding of reality based on empirical data. The situation in the research of pedagogical phenomena (especially in the Croatian context) was mentioned earlier by Jagić (2007), Dubovicki (2017) and Dubovicki, Mlinarević, and Velki (2018). Jagić (2007) emphasises that the results of pedagogical research are not to be reduced to statistical indicators (which are the qualities of the positivist paradigm), but that it is necessary to use qualitative data and, at best, a combination of both. Gorard and Taylor (2004) particularly emphasise the importance of data obtained by combining the methods, pointing out that the lack of one research method can be compensated by supplementing another research method, contributing to the credibility of the obtained results.

The positivist approach uses methods that enable accurate measurement, as well as hypothesis testing, which is also a Cold War heritage. Bognar (2012) also writes about the potential dangers of such research and suggests that it can lead to a complete separation of pedagogical theory and practice.

It is necessary to advocate neopositivism (which implies the existence of a reality independent of men), and also a constructivist approach in the research of pedagogical and didactic concepts. Research use different perspectives

and approaches when it comes to defining the research goals, and the choice of research questions and methods. In a constructivist approach, the researcher himself, via placing himself in the research, attempts to answer the legality, questions and dilemmas that have been set in the research. Pedagogy in the postmodern period does not advocate the rejection of all those approaches that had previously been developed in the methodology but also does not advocate choosing just one of them, however, it does advocate an effort to leave behind an exclusively positivist approach that comes down to finding the problems that exist. In other words, by advocating the pluralism of scientific paradigms (Bognar 2012; Dubovicki, 2017), we create conditions in which it is possible not only to explore (detect) the pedagogical problem (positivist approach) but also to point to the causal and consequential implications of particular phenomena, to critically review the results of previous research (critical theory), to influence their change (postpositivist approach) and to participate personally (participatory paradigm[8]) in changes occurring in the educational process with particular emphasis on researching and improving the educational component of teaching.

The Importance and role of Humanistic Curriculum

The curricular approach in technical (i.e. scientific) perspective, established in the Cold War circumstances, emphasising the processes of learning rather than education, behavioural approaches, and the operationalisation of teaching aims received negative reviews in the German didactic tradition in the 1970s (Giesecke, 1993; Winkel, 1994). That is why it is essential to emphasise the importance of the didactic, traditionally German thought on education, especially when the didactic is considered as the theory of education in the original meaning of the term 'education' (*Bildung*) in German language, culture, and didactic perspective (Autio, 2017), in which *Bildung* represents the formation of a free, autonomous, self-critical, socially responsible, moral and proactive person (Autio, 2017), or humanistic approaches to the curriculum through education.

The curricula will be structured in relation to the preferred orientation, and the realisation of the set goals (learning outcomes) will be organised accordingly. We can say that if the curriculum were oriented towards the positions of perennialism and/or progressivism, an orientation towards the humanistic approach would be the closest because the philosophy of these directions favours the development of the whole person and respecting his/her the interests and needs (Table 1).

8 Action research has the most significant role in the participatory paradigm.

Table 1
Theories of education

Theory	Aim	Curriculum	Educational implications	Representatives
Perennialism (based on realism)	Education of a rational person	Hierarchical orientation towards cultivating the intellect, in other words, a curriculum oriented in the positions of perennialism takes systematic care of the education and training of its subjects by providing the necessary conditions (literacy, space, time) and focuses on permanent education	Focus on the care of permanent education as we can see in the great works of Western cultural heritage	Adler Bloom Hutchins Maritain
Essentialism (based on idealism and realism)	Education of a practical and competent person	Focused on providing the basis of education: reading, writing and calculation of all its subjects	Focus on skills and subjects that transmit cultural heritage and contribute to socio-economic efficiency.	Bagley Bestor Conant Morrison
Progressivism (based on pragmatism)	Education of an individual according to their interests and needs	Curricular content is oriented towards students' activities and projects	Providing instructions which include problem-solving and group activities, the professor encourages student activities through his activities	Dewey Johnson Kilpatrick Parker Washburne
Socio- reconstructionism (based on pragmatism)	Reconstruction of society	This approach to the curriculum emphasises the use of social sciences as a reconstructive tool for studying socio-economic problems	Focus on the crucial socio-economic problems of society.	Brameld Counts Stanley

Note. Adapted from Ornstein & Levine, 1989, p. 205.

The dominance of a particular theoretical approach is extremely important because the practice relies on the theory from which it starts; therefore, we can conclude that the organisation and performance of the teaching will take place in the spirit of the dominant theoretical approach. Depending on what we want to encourage and achieve in teaching, we will decide upon one of the theoretical approaches that will, in its conception, advocate the idea that should be achieved via teaching that is organised in such a way.

Regarding the theoretical-methodological approach, the present paper emphasises the *humanistic approach to curriculum*, which is individual-oriented and advocates the concept of open teaching, which enables a creative

approach. A humanistic approach to the curriculum advocates the possibility of learning in a new way: partner, active, collaborative, creative with a comfortable emotional and democratic social climate. Teaching should go hand in hand with the individual student's opportunities and allow the student to grow into the fullness of his potential.

A humanistic curriculum focused on development advocates a pedagogically open approach that is aimed at all participants of the teaching process. This curriculum concept advocated the importance of today's schools and faculties to become more of an educational-social community in which students should be provided with learning opportunities in a new way: with the help of creative activities, a pleasant educational climate and with an emphasis on realising the full potential of each participant of the educational process. Schools and faculties that support this curriculum concept will go hand in hand with the individual capabilities of each student, but will also develop all types of intelligence (Gardner, 1993).

The role of all participants in curriculum development and implementation should be such as to contribute to the development, creation, implementation, and evaluation of the curriculum, as well as the promotion of human knowledge. The role of a teacher (university professor) in the new curriculum should be focused on encouraging students to have an active and critical relationship towards knowledge, the ability to reorganise their existing knowledge, to look for its application, to identify their problems and to resolve their problematic abilities (Sekulić-Majurec, 2007).

It is believed that a key feature of the contemporary curriculum would undoubtedly be an implementation (both in theory and practice) of humanistic theory that advocates the growth and development of every individual, but also satisfying his interests and needs. The curriculum that would be based on humanistic theories would follow the demands coming from the inside (listening to the needs of all participants in the teaching process) but also respect the current social demands. The curriculum that would systematically take care of promoting creativity would be open and flexible and would be created in a living process as the answer to the needs of those who participate in it.

Conclusion

Theoretical-comparative and historical analysis of the role of the Cold War in the formation of contemporary curricula and the encouragement of educational reforms can offer several conclusions. Namely, the 'Sputnik shock' launched the military race of the Cold War for arms and the space race: since

then, education began to be seen as a mechanism of achieving the desired goals, which triggered the process of the **pedagogisation of social problems**. The Cold War race influenced the reduction of socio-humanistic content from the curriculum and their substitution with the content from the STEM area, and stopped the developing and spreading the directions and movements of reform pedagogy. Because of the heavy financial investment in education, learning began to be perceived as a product and, to successfully promote it in teaching, a behaviourism approach was necessary. That created the **psychologisation of education**, which displaced the philosophy of education in didactics. In other words, *education* was replaced by *learning*. That also resulted in the premise that learning can be stimulated by certain instruction activities, and the learned can be measured by standardised tests. The premise that education can influence the takeover of the leading position in the Cold War race led to profitable financial investment in education: the **economisation of education**. Due to the desire to test economic feasibility, the **standardisation of education** was formed.

The formation of certain supranational economic institutions, such as the OECD, led to the **globalisation of education**, while recently we have been speaking about the **medicalisation of education** due to the increasing substitution of educational research in teaching with biological and medical research paradigms (positivism). Processes of psychologisation, economisation, globalisation and education standardisation led to a series of reforms of education systems that move in the direction of supranational (GERM) rather than adequate national education policies. Parallel to this, the OECD formed PISA, which, as with the Cold War educational policy of the USA (and the USSR), emphasises the mathematical, natural and linguistic field. In addition, PISA incorporates the standardisation, economisation, psychologisation, and globalisation of education. Likewise, for measurability, standardisation, and economisation, the methodological shift in education also took place, with an emphasis on the quantitative positivist approach. The Cold War also influenced research in pedagogy, so until today, in the research of education, the positivist approach continues to dominate, and it requires researchers to accurately measure and use statistical stunts that have the purpose of detecting the problem rather than fully researching it, and most importantly, affect its change, directly in practice.

In contrast, the open curriculum would certainly be the one curriculum that would have been a feature of the *humanistic approach*, would create optimal conditions for stimulating creativity, and would not be a 'slave' to the strict execution of the prescribed measures. Such a curriculum would, in its concept, independently implement the contents and activities that are considered primary and desirable (primarily for students and teachers, and secondary for

society as a whole), and its priorities would vary from year to year. A *developmentally-oriented humanistic curriculum* is one that can influence the changes in the quality of learning, but also the changes in personality traits and individual development; it also emphasises some elements of the *Bildung* concept. The benefit of the humanistic approach to the curriculum is proven by the Finnish success in initial PISA evaluations. The Finnish education system achieved outstanding results at PISA, from an education system diametrically opposed to what PISA and globalisation education reforms expect. The Finns emphasised social and humanistic teaching contents, national needs, moved away from a behavioural approach, incorporated elements of reform pedagogy, neutralised standardisation, placed great emphasis on the philosophy of education and the autonomy of the teacher. Precisely such a concept of modern curricula and educational reforms could be one of the guidelines for conducting national education policies of individual countries.

The results of this theoretically-comparative and historical analysis can also be used for practical purposes. Namely, the conclusions can serve as guidelines for critical thinking of the operationalisation of learning outcomes, questioning of measuring and evaluating the effective area of outcomes, and focusing on the importance of the humanistic relationship between the teacher and the student. Bearing in mind the experiences of history, it is essential to focus on the humanistic approach in future curricular concepts that will advocate the integral development of each individual participant of the teaching process, especially on satisfying the interests (cognitive, experiential and psychomotor) and the needs (biological, social and self-actualisation), encouraging the development of divergent thinking and creativity.

Finally, it is worth pointing out that although the interpretations, definitions, explanations and conceptualisations show that there is a slightly controversial legacy of the Cold War in education, that should not be analysed from a negative point of view (as well as the unquestionable positive contribution of PISA, CERI and OECD to the global education) but should rather be seen as an incentive for further reflection on and improvement of modern curricula and educational reforms.

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Understanding the Relation of Policy Discourse and Re-Conceptualising Curriculum: A Kosovo Perspective on a New Meaning of Context

Blerim Saqipi[1]

This article is an analysis of the meaning of context in implementing curriculum reform. It uses an analysis of two Kosovo curriculum reforms in the previous two decades to elaborate on how education systems engage in the transfer of transnational ideas as well as how they face challenges in making those ideas succeed. The article uses Discursive Institutionalism and the debate between the Didaktik and Curriculum Theory Traditions as a framework for analysis to understand the form of ideas and types of discourses that are relevant for successful curriculum reform. While the Kosovo curriculum reform has been struggling to find a balance between the Didaktik and Curriculum Theory Traditions, it is evident that two reform projects did not provide sufficient possibilities for coordinative discourse among key actors in the reform implementation. For reform to succeed, education systems need to balance between both background and foreground ideas as well as communicative and coordinative discourses. In education systems whose professional capacities are limited and whose resources are scarce, such a balance gains greater importance, indicating the need for more school-based development activities. Therefore, the context should not be viewed as solely static, but needs to be assigned a new meaning regarding what it is and should be placed at the service of reform implementation by recognising the importance of critical reflection when adopting a particular curriculum policy orientation and tailoring the discourse for promoting reform ideas.

Keywords: policy discourse, curriculum theory, context, Kosovo, discursive institutionalism, Didaktik curriculum reform

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Razumevanje povezave med političnim diskurzom in novim konceptom kurikuluma: pogled Kosova na spremenjen kontekst

Blerim Saqipi

V članku je analiziran pomen konteksta izvajanja kurikularne prenove. Gre za analizo dveh kurikularnih prenov v zadnjih dveh desetletjih na Kosovem, katere namen je pojasniti način vključevanja izobraževalnih sistemov v prenos transnacionalnih idej in spoprijemanja z izzivi pri uresničevanju teh idej. V članku sta prikazana diskurzivni institucionalizem ter razprava o tradicionalni teoriji didaktike in kurikularni teoriji kot okvir za analizo razumevanja oblikovanja idej in vrst diskurzov, ki so pomembni za uspešno kurikularno prenovo. Medtem ko si kurikularna prenova na Kosovem prizadeva vzpostaviti ravnovesje med tradicionalnima teorijama didaktike in kurikuluma, je očitno, da ta reformna projekta nista omogočila usklajenega diskurza med ključnimi akterji izvedbe prenove. Za uspeh reforme je nujno, da izobraževalni sistemi uravnovesijo neizpostavljene pa tudi izpostavljene ideje ter komunikacijske in koordinativne diskurze. V izobraževalnih sistemih, katerih profesionalne zmogljivosti in sredstva so omejena, narašča pomen tovrstnega ravnovesja in posledično se povečuje potreba po razvojnih dejavnostih v šolah. Zato konteksta ne bi smeli obravnavati kot izključno statičnega, ampak mu je treba pripisati drugačen pomen glede na njegov položaj glede omogočanja izvajanja reform; prav tako mu je treba priznati pomen kritične refleksije pri sprejemanju določene usmeritve kurikularne politike in prilagajanju diskurza za spodbujanje reformnih idej.

Ključne besede: politični diskurz, kurikularna teorija, kontekst, Kosovo, diskurzivni institucionalizem, didaktika, kurikularna reforma

Introduction

Though curriculum policy is considered a national matter, it is not resistant to transnational policies or the policy transfer phenomenon. The transnational policy flow takes different forms in various countries due to the specific historical, social, and cultural traditions (Wahlstrom & Sundberg, 2017). Correctly, research on policy borrowing or policy transfer indicates the need to pay attention to policy re-contextualisation or translation into local context (Steiner-Khamsi, 2012; Wahlstrom & Sundberg, 2017) as it matters where the new idea is introduced and how it is internalised and resourced. Currently, the debate on education policy-making is centred around how policies are shaped, from where reform efforts originate, and how they are re-contextualised. In this regard, the process of policy borrowing has gained greater attention over the last two decades, owing to the increasing focus of education systems internationally on identifying and learning from good practices and models.

Studying curriculum policy can be focused on the values and orientation it prescribes and examining how ideas are taken forward or how the planned curriculum is implemented and delivered at classroom level. When instituting a curriculum reform, it is critical that education systems address the vital aspect of why some ideas succeed or fail to be translated into classroom-level changes. In understanding the reasons for that, there is a need to understand the real meaning and value attached to the diverse contextual variables that play a role in this. As common as they are, the contextual variables are still specific, and they deserve attention in the implementation of both nationally driven policies and policies transferred from elsewhere.

Kosovo education operated under the repressive regime of Serbia until 1999 and for a decade education had been banned for the majority Albanian population. In circumstances in which education provision was merely a survival tool, issues such as curriculum development and reform were not on the agenda. With the establishment of Kosovo-run institutions under the then international administration led by the United Nations in 1999, Kosovo started to place education reform on its list of priorities. The curriculum reform was one of those, and a new curriculum policy was formally introduced in 2001. The 2001 Curriculum Framework aimed to shift the focus from teacher-centeredness to more learner-centred constructivist approaches to teaching and learning; however, the core curriculum remained content-focused with learning objectives defined per topic within individual subjects and no efforts were made to generate either general or specific standards or competencies (Tahirsylaj, 2018).

To advance towards a learner-centred practice and outcomes-based approach in teaching and learning, Kosovo revised the 2001 curriculum by adopting a new competence-based curriculum in 2011. The 2011 KCF ("MEST", 2011) emphasises the need to organise teaching and learning around a core set of competencies, which interrelate with the European Union 2006 competencies:

- Communication and expression competencies – Effective communicator
- Thinking competencies – Creative thinker
- Learning competencies – Successful learner
- Life, work, and environment-related competencies – Productive contributor
- Personal competencies – Healthy individual
- Civic competencies – Responsible citizen

Furthermore, the purpose of education, according to the new 2011 KCF, is:

- Cultivating the personal and national, state and cultural identity;
- Promotion of the general cultural and citizenship values;
- Developing responsibility towards oneself, towards others, society and environment;
- Developing entrepreneurship and use of technology;
- Developing life-long learning skills.

This study provides an in-depth view of understanding the contextual dimension of curriculum policy to determine the challenges that influence the success or failure of reform policies. The article is an analysis of the Kosovo curriculum reform process in the previous two decades – two significant reform efforts that span over last 20 years (initiated in 2001 and 2011) – which have interacted with the challenges of the education system in one hand and the trends of following specific external policy models on the other. Kosovo is an example of a state undergoing transition from a post-communist and post-conflict context into a democracy, market-oriented environment and a society aspiring to integration in European structures and beyond. Curriculum reform has been projected as a major reform effort to address the specifics of the country in light of this particular context. However, how the system has determined its curriculum policy orientation – in interaction with various curriculum traditions – and the challenges that obstruct the success of reform ideas are not known. Currently, there is an understanding that two curriculum reform projects in Kosovo have failed to move professionals and professionalism in the education system forward and consequently have failed to increase student learning (See "MEST", 2016; Saqipi, 2014).

Empirical evidence on the recently completed piloting of the new curriculum is scant; this study draws on the larger research project of analysing Kosovo's education policy orientation and the author's experience in Kosovo education policymaking in the previous two decades. The study uses the two curriculum policies (2001 and 2011) as a unit of analysis to determine the policy orientation – along the lines of debate between the Didaktik and Curriculum Theory traditions (Hopmman, 2007; Hopmann & Riquarts, 2000) and the Ministry of Education, Science and Technology (MEST) work plans and reports as data to analyse implementation practice for the 2011 curriculum implementation through the framework of Discursive Institutionalism (Wahlstrom & Sundberg, 2017). The study is further structured around analysing the shift in orientation as Kosovo was transiting from the 2001 to the 2011 curriculum reform, which are critical contextual factors that were significant during the initial reform implementation as a way to understand the challenges that are deemed essential for curriculum reform implementation.

Importance of conceptualising curriculum policy

One way of analysing curriculum policy is to look at the dimensions of planning the curriculum, implementing it, and what students learn and experience. Goodlad et al. (1979) identified five domains of curricula. According to Goodlad et al. (1979, 61) when the five domains of the curricula are analysed 'one finds those beliefs, values, attitudes, and the like which society or some dominant group in society wishes the young to acquire'. Although these domains are extensive and open to different possible interpretations, they have been useful in the general analysis of the different processes of the curricula in various contexts, at a theoretical and practical level. Therefore, in any curriculum design process, in addition to ideological and political orientation it is also essential to determine what actually goes to schools as formal curriculum, how teachers and other stakeholders perceive the curriculum, how teachers operationalise the curriculum in schools and how students engage with the curriculum implementation (See Table 1 for a summary of different domains). This is also known as intended, enacted, and achieved curriculum (Anderson-Levitt, 2008) to reflect the three critical dimensions of curriculum.

Table 1

Five Domains of the Curriculum

Domains	Definition of domains
Ideological Curriculum	The abstract political and socio-political level of curricula
Formal Curriculum	A curriculum that has gained official approval by the state and exists in written form
Perceived Curriculum	The perception of other stakeholders such as parents, teachers, learners and politicians about what the curriculum should be
Operational Curriculum	The teaching and learning activities in the classroom and the school
Experiential Curriculum	The learner's experience and their cognitive, emotional and social, practical and experimental processes

Note. Adapted from Goodlad et al., 1979.

The two curriculum reforms in Kosovo have followed the same logic elaborated in Table 1 above. They are meant to be a driving force to support the development of a society that nurtures Western values and develop the skills that are currently demanded for economic and societal development. During the experience of implementing two curriculum reform projects in the last two decades in Kosovo, we can conclude that the critical levels of the curriculum process are the operational and experiential levels, given the challenges faced with in enacting changes at the classroom level (see "MEST", 2016). In other words, how we deliver and how we get students to engage with the curriculum implementation are of critical importance because this makes the difference. The focus of curriculum reform in Kosovo was placed at how teachers act in the classroom and instructions for new curriculum implementation were meant to drive the expected teacher change forward. However, what Kosovo failed to sufficiently address is the way teachers interpret, internalise, and operationalise a curriculum policy.

Connected with the ideological and formal domain of the curriculum, the policy transfer phenomena certainly influences policy discourse at the national level. On a regular basis, education systems struggle to determine their approach to shaping certain policies and curriculum policy area is no exception. The two curriculum reform projects in Kosovo are characterised by an attempt to follow transnational trends in curriculum policy discourse. However, it is hard to say how or what Kosovo has learned from the transnational debates in curriculum policy since there is no written reference to indicate whether curriculum reform was meant to intentionally adopt certain policy inputs from a specific tradition or orientation, though there is evidence of reference models that were taken from European countries. It has been more a matter of policy influence of certain actors, which mainly appeared to be international donors

and policymakers supporting post-conflict Kosovo by promoting specific policy frameworks, such as UNICEF, UNESCO, and the World Bank (Saqipi, 2014).

One can analyse the Kosovo trajectory of curriculum policy shaping through the frames of the ongoing debate on the dichotomy between Didaktik Theory and Curriculum Theory. The German *Didaktik* theory is central to curriculum policies in Continental Europe generally and the German-speaking world specifically, as well as in Nordic countries (Tahirsylaj, 2018b). Being in Europe, Kosovo's curriculum thinking had been influenced in earlier times from the Didaktik tradition if we review the curriculum documents of 2001 (see "MEST", 2001) and before. This was done partly due to the cultural model of policy transfer (see Steiner-Khamsi, 2013), in the context of the cooperation of academics and the easy flow of ideas within Europe.

Curriculum Theory, in contrast, is a widely used theory amongst many countries, primarily in the English-speaking world (Hopmann, 2007). Table 2 below presents a summary of the characteristics of *Didaktik Theory* and *Curriculum Theory* in relation to the theory and practice of teachers as well as education research. The key term in understanding *Didaktik Theory* is 'Bildung', which implies the need to focus on child formation rather than the achievement of specific pre-determined outcomes and skills (Hopmann, 2007; Hopmann & Riquarts, 2000). Westbury (2000) characterised the Curriculum Theory tradition as being focused at the organisational level or otherwise known as 'curriculum-as-manual' (Autio, 2014) as a tool to guide, shape and control what goes on in school. Though in any curriculum tradition, education systems have some sort of plan that outlines the goals and content, the difference is in how the education system and its actors conceptualise and operationalise it in view of the roles of teachers and purposes of schooling.

Table 2

Didaktik and Curriculum Theory compared

Level	Curriculum	Didaktik
Lesson planning		
Core question	How	What and why
Content as	Object	Example
Lesson plan as	Task	Goal (direction)
Teaching as	Course action	Frames of reference
	Enactment	Licensed
Research		
Focus	Individual teacher Teacher thinking (interpretative)	Art of teaching, Didaktik analysis (hermeneutic)
Assessment of successful teaching	Student achievement (scores & standing)	Professional appropriateness, reflection

Level	Curriculum	Didaktik
Theory		
function	Preparation	Initiation
sequence	Subject matter comes first	Bildung comes first

Note. Adapted from Westbury, Hopmann, & Riquarts, 2000.

The two traditions have argued over the role of teachers, autonomy, and approaches to curriculum conceptualisation and delivery. In principle, the *Didaktik* and *Curriculum Tradition* do not differ much at first glance. They address the same matters of the role of the content, definition and meaning of teaching goals, the ways learning results are evaluated, etc. (Westbury, 2000). There is significant overlap between the two, and one can tell that there has been influence from both directions in the way curriculum and teaching is perceived and delivered in both traditions. So, the difference is noticed more at the operational and experiential levels. Many education systems may find themselves in policy discourses about this or drawing on both traditions unintentionally or owing to how they engage with policy transfer phenomenon.

Analysing Kosovo curriculum reform projects of the last two decades, it can be considered that curriculum policy has been seen as a tool for the state to control the development of the education system (Saqipi, 2019). In 2001, Kosovo introduced a new curriculum: the first after decades of difficult circumstances of school operation and overall functioning of the society. In the situation of restoring peace and democracy in Kosovo after 1999, when the war ended, it was justifiable that Kosovo, under the supervision of the international community (Kosovo was administered by the United Nations in the period from 1999 until 2008, when it declared independence), opted for a curriculum policy that is detailed and installed state control in terms of content and suggestions for teacher instructional decision, which almost reached the stage of ready-made models to be executed. In addition, the Kosovo education system started to place more emphasis on external standardised testing. In such circumstances of post-war revival in which teachers lacked the opportunities to access professional development activities and teacher education had been conducted under limited resources and insufficient quality (Saqipi, 2014; Saqipi & Vogrinc, 2017), taking a more centralised approach to curriculum implementation was considered adequate and expected. In general, the research identifies the challenges for teacher education to prepare teachers well for the realities of school (Brouwer & Korthagen, 2005; Darling-Hammond, 2000; Huang, 2016), while this theory-practice gap becomes even more relevant when a new ambitious reform is introduced. In the Kosovo school system, the capacities at the school

level (including resource availability and teacher and director professional capacities) had been too limited to undertake activities around designing and interpreting curricula (Saqipi, 2019).

Therefore, the Kosovo education system considered it more appropriate to adopt centrally designed detailed curricula that teachers will follow during their routine work without the need to engage in curriculum design in greater depth. This was also occurring in line with the ever-increasing trends of countries around the world adopting performativity agendas, otherwise known as 'standardisation in education' or 'results-based approach', which place a high focus on accountability policies and uniformity in education system (Day, 2002; Hargreaves & Shirley, 2009; Helsby, 1999; Sahlberg, 2007, 2011; Smeed et al., 2015). Looking in a greater depth where Kosovo stands in between the *Didaktik* and *Curriculum Theory* traditions, there has been no formal analysis to determine which of the two streams has dominated in shaping curriculum policy in Kosovo in the last two decades. However, analysing curriculum policy documents of 2001 ("MEST", 2001) and, more strongly 2011 curriculum policy ("MEST", 2011), one can conclude that Kosovo has embraced *Curriculum Theory* reasoning. This can be seen in the orientation of centrally prescribed curricula, focus on detailed learning outcomes, administrators determining teaching strategies and lack of expectation for teachers to demonstrate autonomous professionalism by undertaking initiatives at the school level for creating materials, adapting to student development, and deciding on innovative assessment strategies for student learning. More specifically, the 2011 curriculum policy was driven by the philosophy of competency-based curricula. This approach, in practice, overshadowed the critical agenda of the social and emotional development of young people, which has been present in the discussion but only slightly in the actions related to curriculum implementation ("MEST", 2011, 2016).

The two curriculum reform projects in Kosovo were supported by the technical assistance of various donor projects and, in light of the inclination to align the education system to the various international models, it is clear that the Kosovo curriculum reform was not driven by an internal professional motivation to change the situation on the ground. It was more a persistence of a recently established state to follow the good models and practices from various education systems. A valid question, however, remained: whether the reform projects have moved towards the achievement of the desired success. In such a situation of transferring policy ideas, the question of why some ideas succeed while some good ideas fail to do so remains (Wahlstrom & Sundberg, 2017). Wahlstrom and Sundberg (2017) suggest Discursive Institutionalism (DI) as a model of analysing the reasons behind the failure or success of the ideas.

Analysing Kosovo curriculum reform projects to understand the meaning of context

Research on policy transfer and implementation recognises the need to pay attention to the context in which the policy is implemented (Steine-Khamsi, 2012; Wahlstrom & Sundberg, 2017). However, there is a need to understand the meaning of context and determine the variables that are particularly important in making ideas succeed. The concept of Discursive Institutionalism (DI) originated from the work of Vivien Schmidt (2008) who introduced the concept as a reaction to the three traditional institutional approaches (i.e., rational choice, historical and sociological). Schmidt used DI in political science to understand ideas and discourses in much more thorough terms by looking at how global policies are translated into the local context (see Schmidt, 2008, 2009, 2010). DI emphasises the need to determine whether the policy discourse is coordinative (among policy actors) or communicative (between policy actors and the public).

In contrast, DI looks at ideas in policy implementation as being background ideas (underlying assumptions) and foreground ideas (conscious perceptions). Ideas can be cognitive and normative. According to Wahlstrom and Sundberg (2017), normative background ideas are unspoken thoughts on values that fit within the public philosophy, while cognitive background ideas are called paradigms on child learning and purposes of schooling. In contrast, the foreground ideas are more visible and normative ideas and related usually to ideas at the programmatic level on what constitutes the minimum student learning for a particular level of schooling. Cognitive foreground ideas relate to programmatic debate, usually in order to solve various cognitive problems, such as the structure and content of curriculum (Wahlstrom & Sundberg, 2017).

Wahlstrom and Sundberg (2017) used DI in combination with Curriculum Theory to develop a framework for analysing the relationship between policy and curriculum. In other words, this framework directs the focus towards understanding policy ideas at the societal, programmatic, municipal, and school levels against the specifics of ideas and discourses. A similar framework is adopted for this study (See Table 3 below) to analyse the Kosovo curriculum reform implementation in order to provide a deeper look into important contextual elements that play a critical role in determining the success or failure of reform ideas. This analysis of the Kosovo curriculum reform intends to (i) determine the type and form of ideas needed in curriculum reform implementation, (ii) establish the main forms and functions of the discourse, and (iii) determine the important actors and their roles.

Table 3
Understanding the Kosovo curriculum reform through different levels, ideas, and discourses

Level	Ideas	Discourse	Actors
Societal	Normative background ideas on the purpose of schooling	Communicative discourse on a new philosophy	Ministry, Municipal authorities, media
Programmatic	Cognitive foreground ideas on competency-based schooling	Communicative discourse on the benefits of the new curriculum	Ministry, municipal authorities, media
Municipal and Classroom level	Normative background ideas on the meaning of new curriculum	Communicative discourse on knowledge and skills	Teacher educators, directors, teachers

This framework provides a possibility to examine at the discourses and ideas at the societal, programmatic, and local levels (municipalities and schools). At the general societal level, the process of curriculum reform in Kosovo has been partly to help the nation define the real purpose of schooling. Kosovo, as a transitional society, has considered it necessary to place schools as tools for societal transformation and developing democracy, and this is reflected throughout the curriculum documents. The overarching theme of the 2011 curriculum policy ("MEST", 2011) has been characterised by the notion of developing workforce skills connecting the 21st-century skills (competencies) agenda, which overshadowed the dimension of values and attributes at the practical implementation level. The Kosovo education system was not resistant to the ever-increasing trend of following the human capital and skills development agenda advocated by key players, such as the OECD, World Bank and EU, pushed forward through various instruments, including the PISA student assessment programme. This tendency of comparing student achievement and education system indicators is also known as 'governing by number' (Grek, 2013) and is strongly reflected in the *Curriculum Theory* research supporting the orientation to the achievement of pre-determined learning outcomes as a key school function.

The Kosovo curriculum reform process has been characterised by normative background ideas aimed at ensuring a common understanding of the anticipated role of the school in society. The efforts were placed on defining, at the national level, a curriculum that drives forward the development of a skilled workforce. In essence, there is nothing wrong with such an agenda; it is more how the dimensions of nurturing values and developing attitudes among students are intertwined with such an economic development agenda.

The challenges arose around developing a common understanding among key actors as to what the new value system implied for the societal and school levels. The policymakers decided on the new curriculum vision, and they chose a communicative discourse to present the idea to the school community and general public (regardless of the sporadic field consultations). The normative background mode of ideas was not very strong, however. During the stage of conceptualising the 2011 curriculum policy, the focus was more on the implementation level of the curriculum rather than placing the debate at a more conceptual level of what values and aspirations the curriculum is serving. Such a conclusion is reached given the scant and general-level instructions and processes made available to make sure the new policy is transferred at the classroom level in the desired way. In such a situation, when the communicative discourse is placed at a general level and focused on how to deliver a competency-based curriculum, the reform is superficially understood and simplified to determining a set of new teaching techniques and strategies that will support curriculum implementation. This happens due to a failure to embed the reform vision at a broader societal level, which related to how people see the purpose of schooling and the values that drive it.

At the programmatic level, the Kosovo curriculum reform reflected a greater focus on the cognitive foreground ideas and a stronger emphasis on communicative discourse. The public and educators needed to adequately understand what this new role of the school was and how it would translate into how schools and teachers need to behave in the new professionalism. In particular, parents are key stakeholders able to support the reform ideas forward either through working with their children or through their roles in the school. Similarly, the media failed to play their role effectively in the communicative discourse in linking the educators, administrators, and the public on the meaning of new policy intentions and implications. The media paid attention to education reform only during the election campaign in so far as it was connected to the reform and quality at a general level. The ministry, municipal authorities, and school directors adopted the communicative discourse to clarify programmatic ideas related to the meaning and purposes of the new curriculum. This communicative discourse also entailed instructional guidance for teachers.

The municipal and school level has been grouped as one local level due to the specifics of the education context. Though municipalities are granted, according to legislation, the responsibility for the delivery and organisation of instruction in schools, still they are a quite passive actor in education development. They play a rather administrative role, and this is a part of the problem. Under the current circumstances, delivering the new curriculum in the Kosovo

school system is still considered an end in itself rather than a means to an end (for this concept, see Young, 2008). The focus has been predominantly placed on the background normative ideas as to what the curriculum philosophy is about and what it means for the teacher practice rather than how it is translated into individual students. In addition, the practice of the recent curriculum reform has been characterised by a communicative discourse from the levels of ministry to teacher educators and down to schools on the meaning of the new curriculum in practice. There has been a lack of coordinative discourse at the level of helping the school community define the new meaning of teaching that the new curriculum is advocating, which is usually done through professional development activities.

Professional development is key to implementing curriculum reform (Chan, 2010). Within the package of the 2011 curriculum reform project in Kosovo, teachers and school directors were supported through a five-day seminar offered by the Ministry of Education as a form of developing a common understanding of new curriculum approach. The professional development support provided cannot be criticised on how it was delivered, but rather what was offered, the objectives that this served, and the volume of support provided to school directors and teachers. The professional development support offered to schools was in the form of conventional training workshops along with the instructions and guidelines for curriculum implementation. Thus, it is not the quality of workshops that is to be improved. Instead, it needs to be acknowledged that in such major curriculum transformations that target the conceptual level of the role of schooling, a school community needs more time and activities at the school level to internalise and make their interpretations of what the new curriculum is about. This requires sufficient time and input to internalise the reform goals, and the best way to provide this is by involving schools in developing their own coordinative discourse.

This brings us to the point of recognising the importance of how a school system is organised and managed. The school autonomy and the level of initiatives and development activities at school is an essential element in ensuring both communicative and coordinative discourse levels that occur within curriculum reform implementation. Though this should be a regular activity of teacher professional learning communities and joint planning activities, when a new curriculum reform is introduced, it implies the need that school directors and teachers engage in more focused activities to interpret the meaning of certain reform elements into practice. In the Kosovo curriculum reform example, it appeared that policymakers and school communities considered as sufficient the instructions and interpretations determined at the central expert

and administrator level as to what the new curriculum is about. Focusing on coordinative discourse is key to the implementation of reform ideas in education contexts that are challenging in terms of capacities and expertise at the school level. Given that teacher professionalism in the Kosovo education system needs improvement (Saqipi, 2014; Saqipi & Vogrinc, 2017), the need arises for more coordinative discourse in implementing reform so that teachers engage in their own interpretations and understanding of the reform ideas for educational practice. After all, in order for the reform ideas to succeed, it is critical that all actors in curriculum implementation share a common understanding of reform ideas.

Within the process of determining the meaning and practice of the new curriculum policy (communicative discourse for normative foreground ideas), the government established in addition to the curriculum framework also core curricula that detail the topics to be taught to students at various levels as well as the learning outcomes expected at various stages. Furthermore, the instructions on teaching methodologies and assessment strategies to be adopted for the new curriculum have also been detailed centrally by the government. This was all meant to help teachers best contribute to the development of the skills and knowledge deemed relevant for the Kosovar youth. The tendency of the Kosovo education system is to move towards decentralising education competencies (See "MEST", 2016), including greater school autonomy. Implementing curriculum is one of the key areas in which schools can be empowered to take initiatives (See Beatriz et al., 2008; Mona et al., 2011) and school autonomy increased. So, taking a centralised approach to detailing topics, suggesting teaching methodologies and, more importantly, making interpretation of the key principles and practices in curriculum implementation is a measure that goes against the empowerment and decentralisation agenda. Also, the communicative discourse in such a context does not suffice, and the education system needs to empower the coordinative discourse as a tool to link the school community to the new philosophy of teaching and schooling advocated.

The importance of ideas and discourse is closely linked to the need of seeing institutions not as rule-following constructs, while institutional change as dynamic and norms as dynamic constructs (Schmidt, 2008). The three elements require a good mix of communicative and coordinative discourse. The difference is made by the professional capacities of key actors, and when speaking about curriculum reform, the professionalism of teachers becomes critical. Teacher pedagogical thinking and practice are key to determining how the institution treats the reform inputs. In order to ensure a dynamic and meaning-making orientation to policy inputs, centralised approaches and prescribed

curricula do not provide for sufficient coordinative discourse to internalise such inputs. The Kosovo curriculum reform did not manage to take the curriculum reform debate to this level. The debate remained at the general level of deciding what the new policy is and how it should be best implemented. All the specifics of interpreting the norms and meaning-making processes were overshadowed by the high focus on a set of pre-determined skills, which should only serve as reference points to the complex task of teachers in current societies to look at teaching as a complex and dynamic activity.

Understanding the importance of the curriculum implementation context

Developing contexts and transitional societies are greatly influenced by policy transfer from more developed economies of the world, and this naturally translates in how the national curricula are shaped. This phenomenon has been strongly evident in the Kosovo curriculum design project in the last two decades. The 2011 reform predominantly reflected the inclination to connect the European Union competencies for the 21st century, making these a central theme of the curriculum package. It is evident in the current context of globalisation that curriculum reform projects in Kosovo are not exempt from the policy transfer phenomenon. Kosovo's participation in the international assessments and the path towards European integration as well as the inclination to place education at the service of economic development will likely continue to increase motivation in the education system to engage in transnational policy transfer.

However, regardless of how countries engage with transnational policy flow and the dynamics of the reform projects, it is essential for education systems to pay due attention to the purpose the curriculum and its actual delivery are serving. As Lundgren (2015) refers to how Herbart elaborated three different ways of teaching:

> One of education without teaching, in which teachers educate with disciplinary methods, another is teaching without education, where the student is a passive receiver, and there is a third possibility, education by teaching, where the process will take place as a formation (Bildung) of the child directed towards dealing with an unknown future. (p. 7)

After all, the latter is what matters in current societies while putting curriculum reform into service, and preparing the context to support this goal is the responsibility of education policymakers and enactors at the level of

planning and experiencing curriculum. Furthermore, the example of Kosovo curriculum reform indicated the need to ensure a consistent approach between the type of ideas communicated and the discourses used to communicate those ideas in a particular context, which proved to play a pivotal role in what happens in schools.

It is critical that curriculum reform is supported by the context in which it is implemented, and the analysis of Kosovo curriculum reform projects has demonstrated the importance that is attached to this as a prerequisite for the reform ideas to succeed. Kosovo's experience showed that while trying to address the conceptual level of curriculum to change the school system, it may happen that at a practical level the curriculum development ends up being seen as an end in itself. Thus, any education system needs to address the implementation approach to curriculum reform (Chan, 2010). The Kosovo experience reflected the approach of normative background ideas and placed the focus and priority on communicative discourse under a centralised mode of functioning. Given the need for the public and the school community to be mobilised for the reform introduced, the communicative discourse was more easily managed within the time and resources available in Kosovo circumstances. The curriculum vision to develop skills for the economy in Kosovo was not sufficiently processed and internalised by all policy enactors as a result of lack of more substantial communicative discourse and almost missing coordinative discourse between policy enactors. Given the acknowledged challenges of Kosovo student learning (see "MEST", 2016; OECD, 2016), the implementation process of Kosovo curriculum reform has failed to address the level of teacher pedagogical thinking, their preparedness, and commitment, which should have been an important theme in the decisions around the types of ideas and discourses applied during the reform projects. Furthermore, knowing the traditional knowledge-oriented education system culture, not addressing these critical context variables would certainly lead to the same low results of student performance despite the innovative expectations of the new curriculum.

Conclusion

Though curriculum policy in any education system generally advocates the idea of developing democracy, as well as the societal values and skills needed for current societies, it is necessary to recognise the choices education systems make in conceptualising and operationalising the curriculum. The critical part is thus deciding the nature of ideas to be pushed forward and discourses adopted for that purpose. The Kosovo curriculum reform had a strong focus on

the achievement of pre-determined skills overshadowing a broader perspective of curriculum goals in terms of values and attributes aspired for new generations. Partly, this relates to the choice of discourse in pushing the ideas forward as well as due to the inclinations to absorb the principles of the *Curriculum Theory* as a general international benchmark that was adopted without any critical reflection. Weak communicative discourse in defining the real meaning and purpose of the curriculum policy and a lack of foreground types of ideas have significantly influenced the level of support that can be generated in promoting professionalism in the teaching profession. This article concluded that when a curriculum reform is ambitious and professional capacities in the school system limited, education systems are faced with the risk of not ensuring sufficient coordinative discourse to serve the purpose of proper understanding and internalising the reform objectives.

One important contextual variable in deciding the adequate forms and means of pushing ideas forward is the way schools are managed and the organisational culture they reflect. This is important for operationalising curricula and ensuring that the school community develops an adequate understanding of the ideas promoted. Hence, policymakers and policy enactors need to acknowledge the new meaning of context by assigning adequate value to the time spent on reform planning and implementation, as well as determining a realistic ambition for the reform. As regards reform planning, education systems in transition face difficulties in deciding between what models to follow when shaping a curriculum policy and lack capacities to internalise the inputs that derive from various models they chose to study or that come to them within the package of technical assistance through the intervention of donor partners.

Determining a true meaning of contextual variables and reaching a coherence between the ideas the reform promotes and deciding the right balance between communicative and coordinative discourse are key to making curriculum reform a driver of changing teacher professional practice. In addition to addressing professional capacities in the school system, policymakers and enactors need to recognise the curriculum tradition of the particular education system and the evolution of the curriculum tradition from a historical perspective. For the curriculum to serve its multiple goals of skills and values agenda, it is critical that education systems are pushed away from practices of 'curriculum-as-manual' (Autio, 2014) and seeing learning only as something to be measured and quantified. Therefore, the key to success is how to use the capacity building as a tool to place context at the service of reform implementation in order to move policy enactors towards the desired professionalism through the application of adequate communicative and coordinative discourse. Introducing

innovations requires a new approach to reform in cases the traditional way proved unsuccessful. Doing 'more-of-the-same' will not suffice. Once a successful reform project is implemented, it will safeguard a successful reform implementation model for the system. One important assumption is that the system makes the right and evidence-based choice for curriculum policy orientation following a critical review of models being considered.

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Curriculum Reform in Indonesia: Moving from an Exclusive to Inclusive Curriculum

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The goal of education is to foster all students' intellectual, social, and personal potential to their highest level by providing them with an equitable and equal education irrespective of their characteristics (e.g., ethnicity, social class, language use, religion, and other human differences). Different students and communities should not be excluded in terms of curriculum. At the micro-level classroom, student engagement is central. Teachers should go beyond the prescribed curriculum by working with their students and by including their voices. However, how can students be successful academically and socially if the school curriculum is anchored in the mainstream curriculum, primarily promoting the dominant groups? For example, given that the books, curriculum, and standardised testing are centralised in Indonesia, the content is, of course, generalised for all students. Teachers and schools throughout the country should use the same materials for all students. However, for the disadvantaged children coming from poor, rural, and remote areas, such policies lead them to trouble. They learn the books and materials that are similar to those that the affluent schools and students use in cities, but their values and perspectives are excluded. Also, how can students who are racially, culturally, and linguistically marginalised and low-income families succeed if the curriculum is organised exclusively to maintain the current social structure? The purpose of this paper is to explore the need to move from an exclusive to inclusive curriculum in Indonesia so that all students can succeed academically and socially. The orienting questions for this study are: (1) What do we mean by an exclusive and inclusive curriculum? (2) What are the components of an inclusive curriculum? (3) What should be reformed to create an inclusive curriculum? (4) What kind of leadership is required to guide the reform from an exclusive to an inclusive curriculum?

Keywords: curriculum reform, exclusive curriculum, inclusive curriculum, inclusive leadership

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Kurikularna prenova v Indoneziji: prehod od izključujočega k vključujočemu kurikulumu

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Cilj izobraževanja je spodbujanje najvišje ravni vseh intelektualnih, socialnih in osebnih potencialov učencev z zagotavljanjem pravičnega in enakopravnega izobraževanja za vse učence ne glede na njihove značilnosti (npr. etnična pripadnost, družbeni razred, jezikovna raba, religija in druge razlike). Kurikulum naj ne bi izključeval različnih učencev in skupnosti. Na mikroravni, v učilnici, je vključenost učencev osrednjega pomena. Učitelji morajo presegati predpisani učni načrt z delom z učenci in vključevanjem njihovih mnenj. Poraja se vprašanje, kako so lahko učenci akademsko in socialno uspešni, če je šolski kurikulum del glavnega kurikuluma, ki predvsem spodbuja prevladujoče skupine. V ponazoritev navajamo dejstvo, da so knjige, kurikulum in standardizirani testi v Indoneziji centralizirani, kar pomeni, da je vsebina posplošena za vse učence. Učitelji in šole so dolžni uporabljati enaka gradiva za vse učence v vsej državi. Tovrstna politika povzroča težave deprivilegiranim otrokom z revnih, s podeželskih in z oddaljenih območij. Ti si kupijo knjige in gradiva, podobna tistim, ki jih uporabljajo premožne šole in učenci v mestih, vendar so njihove vrednote in pogledi pri tem izključeni. Naslednje vprašanje je, kako so lahko uspešni rasno, kulturno in jezikovno marginalizirani učenci in družine z nizkimi dohodki, če je namen kurikuluma izključno ohranjanje trenutne družbene strukture. Namen tega članka je raziskati potrebo po prehodu od izključujočega k vključujočemu kurikulumu v Indoneziji, da bodo lahko vsi učenci akademsko in socialno uspešni. Usmeritvena vprašanja za to raziskavo so: 1) kako opredelimo izključujoč in vključujoč kurikulum; 2) kateri so sestavini deli vključujočega kurikuluma; 3) kaj bi bilo treba spremeniti, da bi izoblikovali vključujoč kurikulum; 4) kakšno mora biti vodstvo, ki bi usmerjalo reformo z izključujočega v vključujoč kurikulum.

Ključne besede: kurikularna reforma, izključujoč kurikulum, vključujoč kurikulum, vključujoče vodstvo

Introduction

Education is essential for every human being. Developing all children's social, intellectual, and personal potential to their uppermost level is the primary mission of education (Bennett, 2003; Nieto & Bode, 2008) through providing them with an equitable, equal, and high-quality education (Banks, 2002; Nieto & Bode, 2008) regardless of students' characteristics, including race, ethnicity, social class, language use, gender, sexual orientation, religion, ability, and other human differences. To achieve its mission, at the school level, Ryan (2003) contended that various students and communities should not be excluded in terms of curriculum, patterns of communication or interactions, decision making, and policy considerations. At this level, educational programmes, practices, and policies should address various students' potential. At the micro-level classroom, student engagement is central. Teachers should go beyond the prescribed curriculum by working with their students and by including their voices and experiences (Kamil, Mukminin, Jamin, Yusuf, & Idrus, 2013; McMahon, 2003). 'Teachers need to deconstruct their curricular content and pedagogical approaches to uncover and move beyond assumptions of neutrality' (McMahon, 2003, p. 259). In addition, McMahon (2003) wrote that student engagement could take place when students have 'a teacher who presents material in an interesting way or who uses a variety of strategies to convey information' (p. 260). Teachers should have high expectations for all students. They should facilitate students to develop their intellectual, social, and personal promises by teaching with various methods and approaches and by not using materials solely from the dominant sides (Mukminin, 2012, 2019; Mukminin & Mcmahon, 2013). In addition, Olmedo (2003) stated that the schools that could narrow the achievement gap were those that have well-trained and motivated teachers, a culturally sensitive and challenging curriculum, and a school culture promoting high academic achievement among all students. In other words, a school's mission is to support all students in the experience of high academic and social success through being 'empowered not only by studying their own culture but also by being exposed, through a variety of pedagogical perspectives, to different perspectives' (Nieto & Bode, 2008, p. 338).

However, how can students be successful academically and socially if the school curriculum is anchored in the traditional or mainstream curriculum, which primarily promotes the dominant or elite groups 'in scope including bias in textbooks, trade books, and other instructional media' (Bennett, 2003, p. 299)? For example, given that the books, curriculum, and standardised testing are centralised in Indonesia, the content is, of course, generalised for all

Indonesian students. Teachers and schools throughout the country should use the same materials and books for all students (Kamil, Mukminin, Jamin, Yusuf, & Idrus, 2013; Kamil & Mukminin, 2015; Kamil, Mukminin, Ahmad, & Kassim, 2018). However, for the disadvantaged children who come from the poor, rural, and remote areas, these policies lead them to trouble. They learn the books and materials that are similar to those that the affluent schools and students use in cities, but their values and perspectives are excluded. Such policies have led to repetition rates at the primary level that are four times higher among the poorest children than among their richest peers. The poorest children have dropout rates between 2 and 3 per cent compared with rates below 1 per cent for children from high-income families (World Bank, 2006). Such policies, from the perspective of the cultural capital theory, although schools are an apolitical and neutral forum, actually favour the dominant groups through their symbolic representations of cultural domination (Sadovnik, 2007).

Another important question related to the curriculum is how can students who are racially, culturally, and linguistically marginalised and low-income families succeed if the curriculum is organised exclusively in order to maintain the current social structure? The purpose of this paper is to explore the need to move from an exclusive to inclusive curriculum in Indonesia so that all students can succeed academically and socially. The orienting questions for this study are: (1) What do we mean by an exclusive and inclusive curriculum? (2) What are the components of an inclusive curriculum? (3) What should be reformed to create an inclusive curriculum? (4) What kind of prospective leadership is needed to guide the reform from an exclusive to an inclusive curriculum?

Literature Review

The Educational System in Indonesia

The educational system in Indonesia, consisting of 250,000 schools with more than 50 million students and 2.78 million teachers, is managed by two ministries: the Ministry of National Education (MoNE), which is responsible for 84 per cent of schools and the Ministry of Religious Affairs (MoRA), which manages the remaining 16 per cent (Jalal, Samani, Chang, Stevenson, Bagatz, & Negara, 2009; World Bank, 2007). The educational system in Indonesia implements a 6-3-3-4 school-based education structure), comprising six years of primary school, three years of junior high school, and three years of senior high school, and four years for an undergraduate university degree. Since 1994, the

Indonesian government has declared a system of nine-year basic education. The policy for this requires all Indonesian children who are between 7 and 15 years old be provided with a basic education comprising primary and junior secondary school education (Azkiyah & Mukminin, 2017). After finishing their basic education, all children may continue their next level of education to senior secondary schooling consisting of two paths: general and technical/vocational school education. Furthermore, they may continue to higher education, which is an extension of secondary education and consists of academic and professional education (Azkiyah & Mukminin, 2017; Jalal et al., 2009).

The educational system in Indonesia used to have a centralised and bureaucratic mode, as introduced by the Dutch as the colonial power. However, the downfall of Suharto's regime in May 1998 had meaningfully changed the Indonesian education policy from centralisation to decentralisation. The change was due to the emergence of the Law No.22/1999 (later reviewed by the Law 32/2004) on 'Local Government' (provinces and districts), which was officially implemented in January 2001. Both laws describe the relationship between the central government and local governments in their powers and authorities regarding education. Both laws have logical consequences requiring educational administration, management and leadership, goals, budgets, personnel, structure, and curriculum be adapted to the soul and the spirit of autonomy. The central government introduced the idea of educational decentralisation through both laws; however, in fact, the curriculum remains centralised as described in the following.

The History of the Indonesian National Curriculum Policies

The history of Indonesian curriculum has changed over the years. Since independence in 1945, the nation's educational curriculum has changed several times, in the years of 1947, 1952, 1962, 1968, 1975, 1984, 1994, 2004, 2006, and 2013. All Indonesian curricula have been designed in accordance with Indonesian national principles (the so-called *Pancasila*) and the 1945 Constitution of Indonesia ("MoNE", 2012).

The 1968 curriculum policy and before – The first Indonesian curriculum was the 1947 curriculum known as *Rencana Pelajaran* (Learning Plans). Hien (1962) stated that the 1947 curriculum was outlined into three main categories: courses, learning hours, and learning materials. It was established to reform Indonesian education from the influence of the Netherlands-based educational system aiming to produce students with character (Dewantara,

1977; Hien, 1962). In addition, the content of the curriculum focused on character education, state consciousness, and community awareness. There were 16 courses taught, including the Indonesian language, local languages, algebra, natural science, life science, earth science, history, drawing, writing, art, handwork, female art, physical education, hygiene and health, and character education ("MoNE", 1996). Religious instruction was then introduced and added to the 1947 curriculum in 1951 ("MoNE", 1954).

The 1947 curriculum was revised in 1952 through the Indonesian act No. 4 ("MoNE", 1954). This act was first established to determine Indonesian educational provisions on curriculum, teachers, schooling, school fees, supervision, school holidays, and the relationship between school and students' parents. The articles of the act also included the Indonesian educational goals, and some courses were listed, namely religious teaching, physical education, and the national language (Indonesian). In brief, the stated purpose of the act was to produce wise citizens who were democratic and accountable for the welfare of society and the land. The curriculum was then named *Rencana Pembelajaran Terurai* (Detailed Learning Plan) 1952.

In 1964, the new revision of the 1952 curriculum had been proposed for the betterment of the Indonesia educational system through the Indonesian Ministry of Education Decree No. 2/1962 (Gunawan, 1986; "MoNE", 1996). The curriculum, *Rencana Pendidikan* (Education Plan), focused on the development of patriotism and nationalism, which was aimed at orienting national, international, and religious values to improve students' intelligence, emotion, and physiques. Courses were classified within five groups: morality, intelligence, emotion, skills, and physique. More emphasis in primary education was placed on the development of general knowledge and practical, functional activities (Gunawan, 1986).

The next curriculum reformation happened in 1968 with *Kurikulum* (Curriculum) (Hien, 1962; "MoNE", 1996). This reformation was in line with the political reformation from President Soekarno's 'Old Order' to President Soeharto's 'New Order'. In this curriculum policy, basic views and concepts regarding the Indonesian educational foundation, objectives, and contents were reformulated ("MoNE", 1996). The education foundation was *Pancasila* (the five principles), and the objective of the curriculum was to develop Indonesian people who applied the spirit of *Pancasila*. The objective of the education stated in this curriculum was to solidify Indonesian students' morality, mentality, and faith, and to enhance the students' intelligence and skills as well as to develop their physical condition ("MoNE", 1996). English was introduced as the first foreign language course taught in the Indonesian educational system, along

with other courses, such as history, geography, civic, algebra, and natural science ("MoNE", 1996).

The 1975, 1984, and 1994 curriculum policies – The Indonesian Ministry of Education established a new curriculum, the 1975 curriculum, to replace the previous one, the 1968 curriculum. It was issued on January 15, 1975, by the Decree of Education Minister No.008d/U/1975 and 008e/U1975. The curriculum was the first in Indonesia developed based on theory-based processes and procedures of curriculum development (Bobbit, 1981). However, the development of the 1975 curriculum continued to be influenced by political aspects because almost every curriculum in that era was affected by politics (Apple, 1979). This curriculum was designed to develop the quality of the Indonesian national education. This curriculum was an objective-oriented guide for teachers who needed to understand students' objective in learning; knowledge, science, or skills to engage active learning in the instructional activities; it was named *Cara Belajar Siswa Aktif* (Student Active Learning Method) (Gunawan, 1986; Hasan, 1984; "MoNE", 1996). The integrated approach began to adapt, as did the structuralism philosophy, which was set as the foundation of the curriculum. The 1975 curriculum was influenced by behavioural psychology that emphasised the stimulus to response and training ("MoNE", 1975). The significant change of the curriculum content relied on the local language, which was shifted to become an optional course. In addition, the vocational schools' system, curriculum, and management were covered by this break-through curriculum (Gunawan, 1986; Hasan, 1984; "MoNE"1996).

Almost a decade later, a new curriculum was established to rectify the 1975 curriculum. It was called *Kurikulum 1984*. There were no significant changes in this curriculum due to the same political situation. However, one additional compulsory course, part of a history course, was introduced; it was named *Pendidikan Sejarah Perjuangan Bangsa* (Education History of the National Struggle), which focused on Indonesia's history of independence (Hasan, 1984; "MoNE", 1996). Additionally, local language was reintroduced as a compulsory course within this curriculum. The *Cara Belajar Siswa Aktif* (Student Active Learning Method) was still applied in the 1984 curriculum as a continuation of the 1975 curriculum to provide students' with active learning and to focus on students' communicative competence (Gunawan, 1986; Hasan, 1984; "MoNE", 1996).

In 1994, the 1984 curriculum was revised based on the Indonesian Act No. 2 /1989 about the Indonesian national educational system (Indonesian Republic, RoI, 1989). There were no significant changes or revisions from the

previous curriculum. However, a few changes were made to the history course because it was not considered a comprehensive course for the 1984 curriculum and was revised to be more comprehensive. *Pendidikan Sejarah Perjuangan Bangsa* (Education History of the National Struggle) as an additional compulsory course introduced in 1975 was adapted and updated in the 1994 curriculum (Hasan, 2007; "MoNE", 1994, 1996). Science courses dominated in this curriculum, compared to social science courses: this reflected the government's priority to develop more science-based education in embracing 20th-century education (Habibi, Mukminin, Sulistiyo, & Sofwan, 2017; Hasan, 2007).

The Competence-Based Curriculum (CBC) or the '2004 Curriculum' was applied as a response to the structural change of the Indonesian government system from a centralised to a decentralised government, stated in Act No. 22 and 25 of 1999 about '*Otonomi Daerah* (local autonomy)' or regional autonomy (Bjork, 2005; Kristiansen, 2006). Technically, the CBC was established with three levels of competencies: (1) competence of graduates: students should have certain levels of competence after they complete a certain level of education; (2) general competencies: the competencies required for students to accomplish certain subjects at particular educational levels; (3) basic competence: the competencies that should be possessed students when they follow a particular subject at a particular time (Habibi et al., 2017; "MoNE", 2003).

Unlike the previous changes of the Indonesian curriculum, which took more or less 10 years to revise, the 2004 curriculum was replaced two after years it was introduced by the new curriculum known as 'School-Based Curriculum' or the 2006 curriculum (Habibi et al., 2017; "MoNE", 2005; Raihani, 2007). It was developed by the operational and implemented in each educational unit (school). There was no essential difference between the two curriculums. However, the 2006 curriculum complied various national education standards to ensure the educational achievement for the students: (1) content standard, (2) process standard, (3) graduate competence standard, (4) educational personnel standard, (5) facilities and infrastructure standard, (6) management standard, (7) financial standard, and (8) educational assessment standard ("MoNE", 2005; Raihani, 2017). Two of the eight national education standards, the content standards and the graduates' competence standards were the primary references for the education unit in developing the curriculum ("MoNE", 2005)

The most recently implemented curriculum is the 2013 curriculum of *K-13* (Habibi, et al., 2017; "MoNE", 2012; Raihani, 2017). In this curriculum, there are four educational standards amended by Indonesian Government Regulation No. 32/2013; 1) the standard of content, 2) the standard of graduate competency, 3) the standard of process, and 4) the standard of evaluation

("MoNE", 2012). The Indonesian curriculum has been changed with an integrative-thematic concept implemented in the junior and senior high schools' levels (ibid.). The idea of the 2013 curriculum is a response to a number of critics on the gap between expectations and results. In this case, the students are expected to focus more on the cognition process rather than moral character, which could produce bad behaviour. In addition, the preparation of the curriculum implementation was still limited, which caused some problems regarding teachers' competence, evaluation process, school facilities, and materials (Febriya & Nuryono, 2014; Gershon, 2011; Habibi et al., 2017).

Discussion

Exclusive and Inclusive Curriculum

In this part, we will discuss the definitions of exclusion, inclusion, and curriculum and then, the definitions of exclusive and inclusive curricula. Ryan's (2006) definition of exclusion refers to 'refuse to admit, consider, include; keep from entering or being; reject; bar; put out; force out; expel; or banish' (p. 6). Following this definition, when applied to social institutions like schools, it will become more complex. At the school level, students might be excluded physically, academically, and socially. In terms of physical exclusion, students may experience 'suspension and expulsion' (Ryan, 2006, p. 6). Academically, they may be excluded from the learning process because they have no cultural capital such as 'the ability to talk, act, and think in particular ways' (Ryan, 2006, p. 7) and they may be excluded given that schools favour particular knowledge, languages, values, perspectives, and voices of the dominant groups (Banks, 2002; Bennett, 2003; McMahon, 2003; Nieto & Bode, 2008; Ryan, 2006). In addition, students are excluded socially in relation to limited access to various activities, such as extracurricular activities or programmes in schools.

From the definition of exclusion, it can be stated that the definition of inclusion applied to school is related to the situations in which students, regardless of their characteristics, are included physically, academically, and socially (Ryan, 2006). In terms of academic matters, students' values and perspectives are taken into account. In this sense, students feel that they belong in the school. Nieto and Bode (2008) stated, 'When students feel connected to school, they identify as learners, and they have a far greater chance of becoming successful learners' (p. 340).

In relation to curricula, various definitions exist. Broadly, a curriculum can be defined as something related to the experiences, both overt and covert,

that students have in school (Bennett, 2003; Oenstein & Hunkins, 1998). Oenstein and Hunkins (1998) specifically defined a curriculum 'as a plan for action or a written document that includes strategies for achieving desired goals and ends' (p. 10). Additionally, Nieto and Bode (2008) defined that curriculum was related to 'what should be learned and under what conditions it is to be learned' (p. 127). Given that the curriculum is related to what is important for students to know, it includes 'the knowledge, attitudes, and traditions valued in society' (p. 127). Following the definition of curriculum and of inclusion, for the purpose of this paper, an inclusive curriculum is defined as one that focuses on the planned experiences in school that are intended to develop and provide students with understanding, values, perspectives, attitudes, knowledge, skills, and behaviours needed to participate 'within their ethnic cultures, within the mainstream cultures, and within and across other ethnic cultures' (Banks, 2002, p. 40).

Components of the Inclusive Curriculum

The current challenges for schools and teachers related to an inclusive curriculum are not only to include various perspectives into the curriculum but also to involve students' voices and experiences as a source for learning rather than controlling them in teaching and learning processes (Tetreault, 2003). Following the definition of an inclusive curriculum above, which is defined as one that focuses on the planned experiences in school that are intended to develop and provide students with understanding, values, perspectives, attitudes, knowledge, skills, and behaviours needed to participate 'within their ethnic cultures, within the mainstream cultures, and within and across other ethnic cultures' (Banks, 2002, p. 40), the question is what are the characteristics of an inclusive curriculum? We will adopt Bennett's (2003) ideas regarding the characteristics of an inclusive curriculum, although she did not specifically mention an inclusive curriculum, but a multicultural curriculum; she proposed six major components of a multicultural curriculum, which can be adopted to develop an inclusive curriculum. The six components are developing various historical perspectives, developing cultural awareness, developing intercultural competence, combating racism, sexism, and all forms of prejudice and discrimination, increasing awareness of the state of the planet and global dynamics, and building social action skills (Bennett, 2003).

By adopting the six components, an inclusive curriculum should first enable students to develop their various historical perspectives, which refer to 'the knowledge and understanding of the heritage and contributions of diverse nations and ethnic groups, including one's own' (Bennett, 2003, p. 305). This

component is intended to raise students' awareness of the past and current experiences among various nations and ethnic groups (Banks, 2002; Nieto & Bode, 2008).

The second component is to develop students' cultural awareness. It is related to the recognition and awareness of the variety of ideas and practices found around the world and 'some recognition of how one's own thoughts and behaviours might be perceived by members of differing nations and ethnic groups' (Bennett, 2003, p. 305).

The third component of an inclusive curriculum is to strengthen students' intercultural competence, which is related to the skills of students to interpret intentional communications (languages), some unconscious signs, and customs or traditions that are not similar to theirs (Bennett, 2003).

Another critical component is to combat racism, sexism, and all forms of prejudice and discrimination by teaching students specific humanistic, moral, and democratic values such as the negative sides of racism, stereotypes, and prejudices (Banks, 2002; Bennett, 2003; Nieto & Bode, 2008). This component is intended to provide students with antiracist behaviours and attitudes based on the consciousness of historical and current evidence of individual, institutional, and cultural racism or discrimination in one's own country and elsewhere in the world (Bennett, 2003; Nieto & Bode, 2008).

The fifth component is to increase students' awareness of the state of the planet and global dynamics by teaching and providing them with knowledge about the current world conditions and developments (Bennett, 2003). This will motivate students to become involved in global society regarding health, poverty, war, and conflicts.

The last component of an inclusive curriculum is related to building students' social action skills, which consist of the knowledge, attitudes, perspectives, and behaviours necessary to participate in resolving significant problems not only in their own country but also in the rest of the world (Banks, 2002; Bennett, 2003).

What should be reformed to create an inclusive curriculum?

If included in an inclusive curriculum, the six components will help schools and teachers not only to make adjustments of curriculum and instruction to the uniqueness and various needs of students from various cultural, ethnic, and social-class groups but also to provide students with critical thinking, giving students various perspectives or ways of viewing issues and problems or seeing the globe (critical pedagogy). Through critical pedagogy, students are

encouraged to 'take risks, to be curious, and to questions […]to seek their own answers' (Nieto & Bode, 2008, p. 56). McMahon (2003) stated, 'Critical pedagogy can serve as a means of opening the door and inviting all students to fully engage' (p. 262). They are empowered and engaged in the learning process.

However, those components of an inclusive curriculum will not take place, if the school variables such as assumptions, values, beliefs, structures, programmes, and policies, which favour the elite groups, are not radically reformed or restructured. School variables that must be restructured are first, the school staff's attitudes, perceptions, and low expectations for language minority students, low-income students, working-class students, and students of colour (Banks, 2002; Bennett, 2003; McMahon, 2003; Nieto & Bode, 2008; Ryan, 2006).

The second variable is the formalised curriculum, instructional media, and the hidden curriculum that favour the traditional and mainstream knowledge and voices, such as bias in textbooks and other instructional media (Banks, 2002; Bennett, 2003; McMahon, 2003; Nieto & Bode, 2008; Ryan, 2006).

The third reform is related to the learning, teaching, and cultural styles that are practised in the school, which tend to favour the dominant styles. This reform is based on the assumption that every child has a different style or preference for learning. For example, 'Some work well in groups; others prefer to work alone; some need absolute quite in order to concentrate' (Bennett, 2003, p. 185). Consequently, when differences in learning preference are not taken into consideration by teachers, they can lead to school failure or an achievement gap (Banks, 2002; Nieto & Bode, 2008).

The fourth school variable is the languages and dialects that are used in school. Ryan (2003) stated that the styles of interaction and communication frequently excluded language minority students, low-income students, and working-class students from school and classroom activities. For example, although standard English must be taught to all students, schools and teachers should use language minority students, low-income students, and working-class students' first languages and dialects to assist them in learning standard English and in achieving high academic standard (Banks, 2002; Bennett, 2003; McMahon, 2003; Nieto & Bode, 2008; Ryan, 2006). The miscommunication between teachers and students may result in school failure, which may be unavoidable if the reform is not taken (Banks, 2002; Nieto & Bode, 2008).

The last reform should deal with unfair assessment and testing procedures. Nieto and Bode (2008) asserted, 'Another practice that impedes equity in schools is the uncritical use of standardized testing, particularly when employed to sort students rather than to improve instruction' (p. 122). They further stated that standardised test scores had been used to segregate and sort

students, particularly students with cultures and languages that are not similar to the mainstream. In addition, such policies may lead language minority students, low-income students, and working-class students to be underrepresented in gifted and talented classes (Banks, 2002). Standardised testing may lead schools to force teachers to 'teach to test' and make it impossible to develop an inclusive curriculum that will address the diverse needs of various students. For example, a study on the use of the national standardised test in Indonesia by Mukminin, et al. (2013) found that the use of the test had brought about adverse unintended consequences to the curriculum and instruction, teaching and learning, teacher motivation, student motivation, less attention to non-tested disciplines, and widespread cheating. To guide the reform from the exclusive and inclusive curriculum, the kind of prospective leadership there should be will be discussed in the following.

Inclusive Leadership: The ASPIRE Model

Various models of educational leadership have been proposed, such as situational leadership focusing on leaders that should adapt to various situations (Northouse, 2007) and transformational leadership, related to a process that changes and transforms people through idealised influence, inspirational motivation, and individualised consideration (Burns, 1978; Northouse, 2007). However, in terms of transformational leadership, Ryan (2003) stated, 'Transformational leadership could, at least in principle, be pursuing exclusive ends' (p. 52). In addition, McMahon (2007) wrote, 'transformational leadership fails to question the morality of the organizational goals of education and the means by which they are achieved' (p. 685). These models of leadership rely only on leaders to make changes. When applied to the school setting, these models mostly depend on school staff or favour school principals as sole leaders.

What kind of educational leadership do we need to move from an exclusive curriculum and to develop an inclusive curriculum? To reform schools from the exclusive to inclusive curriculum, educational leadership may not be successful if it relies on particular individuals or principals. In their article, *Framing equitable praxis: Systematic approaches to building socially just and inclusionary educational communities*, McMahon and Armstrong (2006) proposed and presented a polyfocal approach to school leadership. They called it 'the ASPIRE model'. It is 'a comprehensive systematic model whereby individuals, schools, and systems can generate positive, sustainable change in their daily interactions with minoritized students and their families with urban schools' (p. 305). Interestingly, this framework does not privilege particular individuals

as leaders in school. Rather, it considers leadership to exist at all levels in school. 'Leaders include not only school staff but also students, their parents and guardians, and members of the local community and leadership embedded in relations between and among actors' (p. 306).

The ASPIRE model, consisting of assessment, synthesis, planning, implementation, review, and evaluation (McMahon & Armstrong, 2006), has great potential to be employed to reform an exclusive curriculum because it involves all actors in the decision-making process in school. The involvement of all individuals at every level will enable identifying and interrogate the root causes that exclude language minority students, low-income students, and working-class students academically and socially from school programmes and activities reflected on the exclusive curriculum. In addition, the participation of parents and community in developing what knowledge their children should know will bridge the incongruence between home and school cultures such as 'languages, values, behaviour styles, and perspectives' (Banks, 2002, p. 51). The parents and community involvement in student learning are essential and the lack of their involvement will influence student achievement. Ladson-Billings (2006) wrote, 'We lack complex understandings of how individual, family, community, school, and societal factors interact to create school failures for some students' (p. 106).

In addition, the strength of the model is that it employs 'multiple lenses to examine equity practices at the individual, institutional, and system levels' (McMahon & Armstrong, 2006, p. 305). By examining the attitudes, behaviours, and practices at the individual, institutional, and system levels, the ASPIRE model will potentially enable all actors at all levels to work together to execute 'a fundamental examination of the goals, values, and purposes of schools and a reconstruction of them' (Banks, 2002, p. 40). In short, the ASPIRE model with its six overlapping phases will allow all leaders at all levels to address and reform all school variables above such as the issues of low expectations, the differences in learning, teaching, and cultural styles, the hidden curriculum, biases in textbooks, and instructional media, and differences in languages and dialects. The reforms on such school variables are required in order to develop an inclusive curriculum.

Moving from an Exclusive to Inclusive Curriculum in Indonesia

Developing all students' intellectual, social, and personal potentials to their highest level (Nieto & Bode, 2008; Bennett, 2003) by providing them with an equitable, equal, and high-quality education will not become a reality (Nieto

& Bode, 2008; Banks, 2002) if the curriculum still privileges the elite or dominant groups, while excluding the other groups, particularly students whose cultures and languages are different from the mainstream (Nieto & Bode, 2008; Ryan, 2003, 2006).

The exclusive curriculum tends to exclude students from the non-mainstream groups physically, academically, and socially from various activities (Ryan, 2003, 2006). Schools should be reformed from an exclusive to inclusive curriculum, which is defined as the one that focuses on the planned experiences in school that are intended to develop and provide students with understanding, values, perspectives, attitudes, knowledge, skills, and behaviours needed to participate 'within their ethnic cultures, within the mainstream cultures, and within and across other ethnic cultures' (Banks, 2002, p. 40). An inclusive curriculum should address at least the six issues: developing various historical perspectives, developing cultural awareness, developing intercultural competence, combating racism, sexism, and all forms of prejudice and discrimination, increasing awareness of the state of the planet and global dynamics, and building social action skills.

Those six issues may not be achieved if the current school variables such as assumptions, values, beliefs, structures, programmes, and policies, which favour the mainstream groups, are not thoroughly reformed or restructured. In particular, reform is essential to address issues such as low expectations, the differences in learning, teaching, and cultural styles, the hidden curriculum, biases in textbooks, and instructional media, and differences languages and dialects. However, to lead the reform, we cannot rely on traditional models of school leadership, which tend to privilege particular individuals or leaders. Consisting of assessment, synthesis, planning, implementation, review, and evaluation, the ASPIRE model is one potential model of school leadership to reform the current school variables (McMahon & Armstrong, 2006). This model requires leaders to include actors, such as school staff, family, community, guardians, and students. By using this model, the reform will enable all actors to interrogate and interrupt the continuation and maintenance of the dominant values and perspectives in school in order to develop an inclusive curriculum, which serves various needs of students from various backgrounds and which facilitates them to succeed academically and socially.

Conclusion

In Indonesia, the curriculum and its components (e.g., books and learning materials) are centralised and generalised for all students across the country.

However, for the underprivileged schools and children coming from the unfortunate, rural, and remote districts, the curriculum and its components might lead them to difficult situations as their characteristics, values and perspectives are excluded from the curriculum (Muazza, Mukminin, Habibi, Hidayat, & Abidin, 2018). In other words, the exclusive curriculum might not develop and provide underprivileged schools and children with understanding, values, perspectives, attitudes, knowledge, skills, and behaviours facilitating them to participate 'within their ethnic cultures, within the mainstream cultures, and within and across other ethnic cultures' (Banks, 2002, p. 40). This kind of curriculum might exclude underprivileged students physically (suspension and expulsion), academically (excluded from learning processes) and socially (their characteristics are excluded). Therefore, the exclusive curriculum should be reformed to create an inclusive curriculum consisting of six components including developing various historical perspectives, developing cultural awareness, developing intercultural competence, combating racism, sexism, and all forms of prejudice and discrimination, increasing awareness of the state of the planet and global dynamics, and building social action skills. To guide the reform from an exclusive and inclusive curriculum, one promising type of school leadership is the ASPIRE model (assessment, synthesis, planning, implementation, review, and evaluation). The ASPIRE model facilitates school leaders to include all school actors (school staff, family, community, guardians, and students) to develop an inclusive curriculum serving numerous demands of students from diverse backgrounds so that they succeed academically and socially inside and outside school.

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Teachers' Acceptance of Curriculum Reform in the Czech Republic: One Decade Later

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Similarly to other Visegrád Group countries, the most recent curriculum reform in the Czech Republic brought substantial changes in the curriculum documents for schools. The purpose of this study is to investigate Czech primary and lower secondary teachers' current attitudes towards curriculum reform. The results of a survey (n = 701) indicate that teachers have adopted rather negative attitudes. The acceptance of reform tends to increase among the teachers who use curriculum documents regularly and among the teachers with higher self-efficacy. In addition, teachers with system-centred/curriculum-oriented approaches are willing to accept the reform. There is no significant difference between teachers' gender, their length of teaching experience, and their involvement in school management. Within the general frame of the Concern-Based Adoption Model (CBAM), the study draws on data from one country, but the implications for further educational development are potentially applicable across countries with similar educational policy backgrounds.

Keywords: curriculum reform, teachers' attitudes, acceptance, resistance, curriculum documents

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Sprejetje kurikularne prenove učiteljev na Češkem: desetletje pozneje

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Podobno kot v drugih državah Višegrajske skupine je najnovejša kurikularna prenova tudi na Češkem bistveno spremenila šolske učne načrte. Namen te raziskave je preučiti trenutno mnenje osnovnošolskih učiteljev o kurikularni prenovi. Glede na izsledke raziskave (n = 701) so ji učitelji precej nenaklonjeni, vendar pa učitelji, ki redno uporabljajo kurikularne dokumente in ki so učinkovitejši pri svojem delu, bolje sprejemajo reformo. Prav tako so učitelji, katerih pristopi se osredinjajo na sistem/kurikulum, pripravljeni sprejeti reformo. Ni pomembne razlike med spolom učiteljev, številom let izkušenj s poučevanjem in njihovo vključenostjo v vodenje šole. Pod splošnim okriljem modela, ki se osredinja na prilagoditve na osnovi problematike (Concern-Based Adoption Model – CBAM), se raziskava opira na podatke ene države, vendar so njeni učinki na nadaljnji razvoj izobraževanja potencialno uporabni v državah s podobnimi izobraževalnimi politikami.

Ključne besede: kurikularna prenova, odnos učiteljev, sprejemanje, odpor

Introduction

Curriculum reforms are often promoted as promising in terms of an increase in the quality of education. Therefore, the implementation of curriculum reforms as one of the forms of educational change is broadly reflected in manifestations of educational policy and programmes. In reliance upon Fullan (2014), we understand the implementation of curriculum reforms as a developmental process leading from the birth of a reform idea to its final implementation. The vitality of curriculum reforms depends on the teacher's acceptance of the reforms and their principles, because the teachers are expected to put reform ideas into practice (Park & Sung, 2013). Various forms of teacher resistance may block the implementation of new reforms, since responding to reforms is an interpretive act that is personal, interactive, and continuous (cf. Bantwini, 2010). Teachers' resistance is a natural reaction to the changes manifested in their effort to resist reform practices assertively (Berkovich, 2011; Noyes, Wake, & Drake, 2013).

Disconnections between educational policies and teachers' practices are extreme (cf. Meyer, 2010) as actors of curriculum reforms at different levels operate in 'relatively independent political arenas'; if their interests are in conflict, they might use resources to advance, sabotage, or ignore the efforts of actors at other levels (cf. Meyer, 2010; Spillane, 2002, p. 734). During curriculum implementation, teachers obviously ask substantially different questions than policymakers whose focus is on the system, not real individual classrooms, do.

The situation is similar in the Czech Republic, where teachers act as implementers of the obligatory state curriculum. However, research evidence explaining how teachers perceive the implementation of the new curriculum is only limited to the research area in the Czech Republic. Generally speaking, the curriculum reform introduced in the Czech Republic 10 years ago is a typical representation of managerial accountability of technologies (Ball, 2003) that do not work well for effecting longer-term culture changes (Noyes et al., 2013). Therefore, it is necessary to investigate the teachers' understanding that enters the implementation because change (reform) is a subjective process in which teachers construct personal meanings from experience (cf. Fullan, 1982). To find a solution for the successful implementation of curriculum reforms, we first need to explore the teacher's interests and reasons for accepting or rejecting the reforms. Teachers are positioned differently in relation to the educational policy at different levels – at different stages of their careers, with different amounts of experience, aspirations and competences (Ball, Maguire, Braun, & Hoskins, 2011). These represent factors that have been taken into account when

researching the acceptance of reform. As international research predominantly deals with teachers' attitudes towards reform during or after a few years of its implementation (see further), this study examines the acceptance of curriculum reform in the late stage of its implementation (10 years after its introduction). A distinctive feature of the late stage of the reform implementation is teachers' emotional detachment, losing appeal for innovative procedures, and making the impact of reform visible such as (in)consistency between the expected aims, output, and outcome (cf. Becheikh, Ziam, Idrissi, Castonguay, & Landry, 2010).

The purpose of this study is to investigate the primary and lower secondary teachers'[4] attitudes towards curriculum reform on a continuum from acceptance to resistance and to determine which variables are directly related to these attitudes. To better understand teachers' attitudes towards curriculum reform in a broader context, and to theorise about the areas of the teachers' attitudes, this study independently follows the comprehensive Concern-Based Adoption Model ("CBAM") as proposed by George, Hall, and Stiegelbauer (2013), which has been further elaborated by other researchers (for more detail, see Kwok, 2014). This model allows us to view the attitudes not as a single construct as is common in similar studies in this field (e.g., Kwok, 2014; Vrabcová, 2016) but in relation to other vital variables connected to the practical use of the new curriculum documents, for example, the length of teaching experience, or teachers' involvement in school management (for more detail, see Pešková, Spurná, & Knecht, 2017). The study aims to respond to calls for more comprehensive research on the implementation process (Altinyelken, 2010) by examining the experience from the Czech Republic. It draws on data from one country, but the research implications are potentially applicable across Central/Eastern European countries with similar educational policy backgrounds.

Setting the scene: Curriculum transformation in the Czech Republic

Similarly to other Visegrád Group countries (CZ, H, SK, PL), Czech curriculum transformation as a part of the broad-based educational transformation was initiated after the fall of communism in 1989. The process of educational transformation comprised specific phases of: (1) deconstruction (de-ideologisation), (2) stabilisation (characterised by 'hasty' changes in the

4 In the Czech Republic, the primary (ISCED 1, for 6 to 10-year old children) and lower secondary school (ISCED 2, for 11 to 14-year old children) levels are connected in one type of school. In this article, we refer to both levels separately to be clear in an international context.

legislative, organisational, and pedagogical dimensions of education), and (3) reconstruction and implementation implying 'systemic' discussions about the future development of national education and its application into curricula (see Birzea, 2003; Greger & Walterová, 2007). The centrally developed curriculum moved to school-based curricula and teachers were no longer regarded as the executors of the centre's decisions on curricula (see Švecová, 2000). A significant shift of this kind of curriculum transformation resulted in the curriculum reform introduced in 2007: A two-level system of curriculum documents, specific to the state level and the school level, was developed. The Framework Education Programmes (FEPs, see VÚP, 2007) created the state-level curriculum, while the school-level curriculum was formulated in the School Education Programmes (SEPs). The FEPs articulate the outcomes of education expected by the state to be attained by all students who have completed the particular educational stage. The FEPs emphasise the principle of applicability of acquired knowledge in practice as well as the idea of lifelong learning skills, and the introduction of key competencies. The SEPs support the educational autonomy of schools as well as teachers; it is an instrument that enables schools to define themselves. However, regarding the educational content and objectives, the SEPs have to be harmonised with the FEP.

The curriculum documents are based on various expert analyses of the situation of Czech education (Spilková, 2005) and reflect common European priorities and strategies in educational policy defined by the European Union around the year 2000 (e.g., in A Memorandum of Lifelong Learning; Commission of the European Communities, 2000), but the speed and conceptualisation of the changes apparently do not allow the teachers to interiorise them as their own. After the completion of the first decade of the implementation of this particular curriculum reform in the Czech Republic, small-scale studies suggest that the reform was not readily accepted (Janík et al., 2018; Tůmová, 2012) and, in the course of time, an increasing tendency to ambivalence or resistance became apparent (Vrabcová, 2016).

Teachers' acceptance of curriculum reform: State-of-the-art

Teachers' responses to changes might be understood as different manifestations of their agency when undergoing these changes ranging from supportive and proactive manifestations to resistant conduct (Sannino, 2010). Resistance is an affective, cognitive, or behavioural response aimed at maintaining the status quo, manifested as active resistance (disagreement, expressed

verbally), passive resistance (conformity, external consent to innovation, but no activity), or as an indifference manifesting a neutral attitude, unconcern, or lack of interest. Resistance ultimately delays active involvement as teachers look for reasons not to introduce innovation or similar elements (Van Veen, Sleegers, & Van de Ven, 2005). Acceptance represents positive evaluation, positive emotions, and a tendency to take action in favour of introduced change (Roggenbrodt, 2008). Both acceptance and resistance are closely related to participants' experience and attitudes. They often involve several obstacles depending on the context and culture of the particular school and school system (cf. Park & Sung, 2013) and teachers' personal characteristics (Lee & Yin, 2011).

A link between teachers' attitudes towards curriculum and curriculum reform was pointed out by Vollstädt, Tillmann, Rauin, Höhmann, and Tebrügge (1999) who found that, considering the prevailing approach to curriculum, German teachers with a 'subject-matter-centred' teaching approach adopt the most negative attitudes. In contrast, teachers who primarily focus on learners and their needs and teachers who focus on fulfilling the content of curriculum tend to accept reform to a greater extent.

In relation to demographic variables, research generally showed that teachers with longer working experience (more than 15 years) tend to refuse curriculum reform more than their junior colleagues did (Porubský, Trnka, Poliach, & Cachovanová, 2015; Tůmová 2012; in contrast to Ha, Wong, Sum, & Chan, 2008). According to the results of Christou Eliophotou-Menon and Philippou (2004), novice teachers are less afraid of the consequences of reform but more sceptical about reform concerning collaboration than more experienced teachers are. Gender differences were proven to be significant in the study of Haney, Czerniak, and Lumpe (1996) who reported more the positive attitudes of female teachers. A higher degree of acceptance of curriculum reform is evident in members of school management – headteachers and their deputies (Roggenbrodt, 2008). According to Vanderlinde and van Braak (2011), and Charalambous and Philippou (2010), an essential factor influencing teachers' attitudes towards curriculum reforms is self-efficacy[5] for implementing a new curriculum in their own lessons. For example, teachers who highly valued their teaching skills without using a curriculum were more critical of it (cf. also Liou, Moolenaar, & Daly, 2016).

To summarise, international educational research shows the dominance of research focused on finding the attitudes, commitment, and willingness of teachers to implement curriculum changes, particularly in the context of

5 The concept of self-efficacy originally introduced by Bandura refers to one's perceived ability to plan and execute actions to accomplish a specific goal (further see Bandura, 1997).

selected school subjects or educational settings. However, as of now, few quantitative studies have empirically tested teachers' attitudes towards curriculum reforms on a systemic basis at a national level. The literature overview shows a gap calling for large-scale studies reflecting on the implicit conditions involved in curriculum implementation policies and educational practices in post-communist countries.

Research questions and data collection

In our research, we aimed at answering the following research questions: (1) What attitudes do Czech primary and lower secondary teachers hold towards curriculum reform 10 years after its implementation? (2) What factors influence teachers' attitudes towards the curriculum reform? Following previous research, we monitor the dependent attitude variable in relation to the independent variables: *use of curriculum documents* (Tunks & Weller, 2009), *self-efficacy* (Charalambous & Philippou, 2010), a *teacher's approach to curriculum* (Vollstädt et al., 1999) and *demographic characteristics* of teachers, such as gender, the length of teaching experience, the position in school, and the role within the school curriculum implementation (Kwok, 2014).

When investigating Czech teachers' acceptance of curriculum reform, we primarily focused on the variables relating to the dimensions of attitudes based on the *Concern-Based Adoption Model* (CBAM; George et al., 2013). The CBAM is applicable to this current study for two reasons. Firstly, the model corresponds to the personal, social, and context-related factors that have emerged in the literature review. Secondly, the model has previously been successfully applied to investigate teachers' attitudes towards curriculum reforms (Cheung & Yip, 2004; Kwok, 2014). The CBAM indicates the integral components of teachers' perception of implemented changes (innovations), such as cognitive (beliefs), affective (worries) and behavioural (conduct, use). The overall model consists of three components: 1) characteristics of innovation (*Innovation Configuration Map*), 2) dimensions of attitudes (*Stages of Concern*) and 3) dimensions of use (*Levels of Use*). As with other studies that used the CBAM to measure the teachers' attitudes (see Anderson, 1997), it was necessary to modify the dimensions of attitudes (*Stages of Concern*) to fit the data better and to reflect the other factors, such as the cultural contextual factors and the type of innovation being carried out. The CBAM model was freely adapted for the purpose of the survey to reflect the context of Czech curriculum reform ten years after its introduction. For the development of the questionnaire items, we used individual dimensions of two crucial components of the CBAM: *attitudes*

(concerns) and *use*.[6] They constituted the framework for the development of a scale. Individual items were freely adapted from the questionnaires based on the CBAM (Charalambous & Philippou, 2010; George et al., 2013), other questionnaires dealing with teachers' attitudes and use of curriculum documents (Broadhead, 2001; Sargent, 2011) or were developed according to our design. A five-level Likert scale for specifying the level of agreement (strongly agree – strongly disagree) was used for the items regarding a variable of attitudes (29 in total), a four-level frequency scale for specifying the frequency of activities related to curriculum documents (always – never) was used for the items regarding a variable of use (25 in total).

The questionnaire consisted of items of a variable *self-efficacy*[7] (12 in total, adapted from the Czech School Inspectorate, TALIS 2013) measured on the five-point Likert scale. The questionnaire also included a variable *teacher's approach to curriculum*, which was identified using three labels (items) representing attitude to the curriculum: learner-centred, field of study/subject matter-centred, and system-centred/curriculum-oriented approach (cf. Vollstädt et al., 1999)[8]. Complementary contextual and demographic characteristics of respondents included 22 items in total.

The questionnaire was piloted in seven schools; consequently, a component analysis was carried out (including reliability analysis and construct validity assessment). The final version of the questionnaire after minor adjustments included 91 items (for more detail regarding the development and description of the research tool, see Pešková, Spurná, & Knecht, 2017).

Participants

The final version of the questionnaire was distributed among 56 out of 200 addressed primary/lower secondary schools in the Czech Republic selected by means of random sampling (response rate at the school level was 28%). The

6 The component *attitudes* monitored these dimensions (stages): *awareness*, *informational*, *personal*, *management*, *consequences*, *collaboration* and *refocusing*. The component *use*, related to the use of curriculum documents, included similar dimensions like the model: *orientation*, *mechanical*, *routine*, *refinement*, *integration* and *renewal* (for more detail, see Pešková, Spurná, & Knecht, 2017). The third original component of the CBAM called the *Innovation Configuration Map* was operationalised in our tool in the static form to grasp the construct of curriculum reform and related changes (within objectives, content, forms etc.). It served only to illustrate the context and is not in the centre of our attention.

7 This variable was operationalised by means of the three areas: a) managing learners, b) learners' motivation and active involvement, and c) teaching procedures, which corresponds to Bandura's definition of self-efficacy, preferred by Charalambous and Philippou (2010).

8 The items (three short paragraphs) reflected teachers' priorities in teaching in different relation to the curriculum. Teachers selected one from the three approaches which described the best their priorities.

questionnaire was distributed to teachers mainly in an electronic version via headteachers or persons acting under their responsibility during the spring of 2016.

A total of 701 respondents completed the questionnaires. Our research sample consisted of 107 men (15%) and 594 women (85%), which corresponds to the gender distribution in the teacher population in the Czech Republic. The respondents taught at the primary (34%), lower secondary (38%) or at both levels of school (29%). They were predominantly teachers with teaching experience longer than 10 years (83%). The highest proportion of respondents was comprised of teachers (76%), while members of school management (headteachers and deputy headteachers) represented only 13%. Regarding qualification to teach the particular subject, the largest category group was respondents teaching different subjects at the lower secondary school level (see Appendix A – combination, 48%) or subjects at the primary school level. More than half of the respondents participated in the SEP development (53%), and 8% held the role of a SEP coordinator in the school. The respondents with teaching experience longer than 30 years (29%) participated most in the SEP development, next those with teaching experience of 16–20 years (19%). The great majority of respondents were the teachers who preferred a learner-centred approach to the curriculum (80% in total; further see Appendix A).

Data analysis

After completing the data by respondents, the negative items (ca. 50%) were reverse-coded. Exploratory Factor Analysis (EFA, PCA, Oblimin rotation because of higher KMO) was used to test the construct validity. It showed that the measured construct *attitudes* did not match the expectations according to the initial theoretical model (for more detail, see Pešková, Spurná, & Knecht, 2017). EFA resulted in a three-factor model (see Table 1) with a total variance of 42% (13 items were then excluded).

Table 1

Extracted values of factor analysis of the construct 'attitudes'

Items	α	Factor Benefits	Factor Demands	Factor Need to Retrospect
Reform contributed to the improvement of learners' knowledge and skills.	.87	.76	.07	.04
Reform contributed to the fact that learners learned to collaborate more actively in lessons.		.70	.01	.11
Reform contributed to closer collaboration between schools (e.g., regarding projects, sharing teaching materials).		.70	-.02	-.13
Reform led to more open collaboration with school administration institutions (e.g., the Czech School Inspectorate, primary school administrators, etc.)		.70	.00	-.10
Reform contributed to the improvement of relationships within the school staff of my school.		.69	-.06	.05
Reform resulted in the favourable conditions for the learners' attitudes and values development.		.69	.08	.05
Reform stimulated more intense debate between teachers and parents regarding the subject matter.		.65	-.06	-.05
Owing to reform, I obtained more freedom in deciding the content of my lessons.		.64	.07	.13
Obligations associated with reform mean extra work for me.	.80	.05	.86	.05
Obligations arising from reform are rather time- and energy consuming for me.		-.02	.78	-.06
Thinking over teaching methods and strategies and their implementation regarding the objectives of curriculum reform is difficult.		-.05	.74	.05
I would like to learn more about the improvements that resulted from reform in comparison with the previous situation.	.67	-.05	.09	.85
I am interested in information about the consequences of the reform.		-.05	.05	.84
Variance %		21.18	12.86	4.91
Eigenvalue		6.14	3.73	1.42

Despite obtaining the three-factor construct *attitudes*, it may be regarded as one-dimensional and of a prevailing cognitive nature – with the highest ratio of the variance of 21% (these are items detecting subjective belief). Affective items (those detecting respondents' emotions and worries) were excluded by analysis. A conative component of attitudes was covered only by two items but with a higher value of internal consistency ($\alpha = .67$)[9].

9 This component of attitudes was covered by the construct *use*, which was evaluated separately.

We suggested an interpretative range of the mean scores to interpret the construct *attitudes* clearly on a continuum from acceptance to resistance. Table 2 shows higher values related to positive attitudes expressing the degree of acceptance and lower values related to negative attitudes with resistant polarity.

Table 2
Interpretation of the range of intensity at the construct 'attitudes'

Continuum	Resistance		Neutrality	Acceptance	
Mean scores interval	1.00–2.74		2.75–3.25	3.26–5.00	
Interval size	1.74		.50	1.74	
Attitudes	Distinctly negative attitudes	Negative attitudes	Neutral Attitudes	Positive attitudes	Distinctly positive attitudes
Mean scores interval	1.00–1.87	1.88–2.74	2.75–3.25	3.26–4.13	4.14–5.00
Interval size	.87	.87	.50	.87	.87

Similar analyses and procedures were performed in the construct *self-efficacy* and *use*. EFA (PCA, varimax rotation) extracted a three-factor design with a small deviation from the original for both constructs (for more details, see Pešková, Spurná, & Knecht, 2017).

Differences between groups and interrelationships between constructs were analysed using inferential statistics (ANOVA and LSD post-hoc test, regression analysis with the ENTER method, Pearson correlation coefficient). The measurements were carried out at the confidence level $p < .001$, $p < .01$, and $p < .05$ using the software SPSS, Statistica, and RStudio.

Results

Attitudes towards curriculum reform on the continuum

Within the theoretical framework of the CBAM, the variable *attitudes* represent the area through which the degree of respondents' interest, worries, and beliefs regarding innovation (i.e., curriculum reform), may be understood. The total mean value obtained of the construct *attitudes* is well within the range of neutrality ($x = 2.81$, $SD = .49$), respectively at the lower limit approaching negative values (see Table 3). This can mean that teachers do not hold any unambiguous attitudes towards the reform; they do not find the reform meaningful and do not have relevant information to evaluate the reform.

Table 3
Descriptive values of the variable 'attitudes'

Attitudes		95% Confidence interval for mean		SD	Minimum	Maximum
		Lower bound	Upper bound			
Mean	2.80	2.77	2.84	.49	1.36	4.29

Based on the mean score of attitudes, each of the respondents can be placed on the continuum of acceptance-resistance (see Table 4). The largest group (45%) consists of the respondents whose scores have the lowest mean values, i.e., within the values of resistance. Their statements can be characterised as rejecting the reform. Neutral attitudes towards the reform were identified in 37% of the respondents. The smallest group consisted of respondents accepting reform (19%). This fact implies the limited potential of the reform from the perspective of teachers' agency and reform enactment. A more detailed description of the variability of the attitudes towards curriculum reform is presented in Appendix B.

Table 4
Distinguishing the continuum acceptance-resistance: mean scores and numbers of respondents

Scale	Totally resistant	Slightly resistant	Neutral	Slightly acceptable	Totally acceptable
	1.00–1.87	1.88–2.74	2.75–3.25	3.26–4.12	4.13–5.00
N	32	282	257	127	3
n (%)	4.65	40.23	36.66	18.12	.43
Mean	1.71	2.45	2.99	3.46	4.21
SD	.14	.22	.13	.17	.06
Measured interval	1.36–1.86	1.93–2.71	2.79–3.21	3.29–4.07	4.14–4.29

Teachers' self-efficacy and use of curriculum documents

Another investigated area was *self-efficacy* (x = 4.12, SD = .45) and *use* (x = 2.35, SD = .38) as explanatory variables. The total mean values of the constructs show that in comparison with the prevailing neutral attitudes, teachers had higher self-efficacy, even though they said they sometimes used curriculum documents.

Differences in attitudes among groups

All groups of teachers' selected demographic characteristics reached the neutral attitude values, i.e., ambivalent level of the continuum (see Table 5). Taking a closer look at a picture of a 'typical' teacher with positive attitudes, we can observe his/her following characteristics according to their reached levels of acceptance. It is a woman, a novice teacher (0–5 years of teaching experience), holding a position in school management (headteacher/deputy headteacher) and teaching art (music, arts and crafts) or PE.

Statistically significant differences in the values of attitudes were found only among groups divided according to *approach towards curriculum*, *teaching at the primary/lower secondary school level*, and the *role within the SEP implementation* (Table 5). The respondents who tended to adopt the system-centred approach to curriculum reached the highest values of the whole sample (x = 3.00; SD = .05), i.e., neutral attitudes. The respondents teaching at the *lower secondary school level* had more resistant attitudes than those teaching at the *primary school level*. Regarding the *role within the SEP implementation*, the SEP coordinators had more resistant attitudes than those having no role during the implementation.

Table 5

Differences among the groups of respondents according to the demographic data: mean scores of 'acceptance' and results of the analysis of variance

		X	SD	F	P
Gender	Female	2.82	.02	F(1.70) = 2.61	p = .11
	Male	2.73	.05		
Length of teaching experience	0 –5 years	2.90	.06	F(6.69) = .70 LSD post-hoc test	p = .65
	6 –10 years	2.86	.07		
	26 –30 years	2.80	.05		
	21 –25 years	2.80	.05		
	more than 30 years	2.79	.03		
	16 –20 years	2.78	.05		
	11 – 15 years	2.77	.05		
Position in school	(Deputy) headmaster	2.84	.05	F(2.70) = 1.96 LSD post-hoc test	p = .14
	Teacher	2.81	.02		
	Subject leader	2.70	.06		

		X	SD	F	P
Subjects taught	Art and physical Education	2.93	.11	F(5.70) = 1.13 LSD post-hoc test	p = .46
	Primary school subjects	2.86	.03		
	Science	2.80	.05		
	Combination	2.78	.03		
	Languages	2.75	.07		
	Humanities	2.71	.11		
Approach to curriculum	System-centred	3.00*	.05	F(3.70) = 9.98 LSD post-hoc test	p = .00
	Learner-centred	2.80*	.02		
	Subject-matter centred	2.54*	.07		
School level	Primary level	2.85*	.03	F(2.70) = 2.37 LSD post-hoc test	p = .03
	Both levels	2.82	.03		
	Lower secondary level	2.76*	.03		
Role within the SEP implementation	None	2.85*	.03	F(2.70) = 2.30 LSD post-hoc test	p = .03
	SEP coordinator	2.80*	.06		
	SEP co-creator	2.77	.03		

Note. * = Indicates the category within the variable that reached the particular confidence level according to the last column.

Teachers' *attitudes* towards curriculum reform and towards the *use* of curriculum documents are interlinked by 16% ($r = .40$, $p < .01$) and teachers' *self-efficacy* is related to their *attitudes* by 5% ($r = .22$, $p < .01$). While considering the constructs *use* and *self-efficacy* as explanatory variables (see Table 6), we obtained 17% out of the total variability of attitudes ($R^2 = .16$, $\Delta R^2 = .17$, $p < .01$). The result indicates that the considerable degree of this variability is explained in terms of the construct *use*. In addition to the construct *use*, there is a percentage of the inexplicable variability consisting of other variables (not detected by the research tool used).

Table 6
Results of the regression analysis in terms of the dependent variable 'attitudes'

Model 1	Standard coefficient		Sig.	95% Confidence interval for β		Collinearity		ANOVA			
	β	SE β		Lower bound	Upper bound	VIF	Sum of squares	df	x^2	F	Sig.
(Constant)		.16	.00	.96	1.60		27.60	2	13.80	70.08	.00
Use	.37	.05	.00	.37	.56	1.14	137.65	698	.20		
Self-efficacy	.10	.04	.00	.03	.18	1.14	165.05	700			

Discussion

The findings have brought new insights and fostered critical debate about the role that teachers play in educational development. The results of our research must be interpreted with regard to the specific context and conditions in which the curriculum reform was implemented in the Czech Republic. As such, curriculum reforms are influenced by the local context, politics, administration, organisation, and participants and may, therefore, show specific patterns, which differ from country to country.

Overall, respondents adopted a neutral and negative attitude towards the reform, which corresponds to the current research and theories perceiving teachers' resistance as an accompanying phenomenon of curricular reforms (Porubský et al., 2015; Reichman & Artzi, 2012). Even though teachers adopt resistant attitudes towards the reform, they are interested in learning more detailed information about the reform.

The most important contribution of the research is the finding that the groups of teachers adhering to different general conceptions of the curriculum have different attitudes towards curriculum reform (cf. Vollstädt et al., 1999). While the teachers with system-centred/curriculum-oriented approaches are willing to accept the reform, which is not surprising, the rest of teachers who focus on the development of learners' abilities or on the development of learners' subject knowledge tend to be more reluctant to accept the reform. Interpreting these findings may be rather questionable within the international context because it depends on the nature of examined reform. Subject matter-centred teachers may be afraid of a decline in learners' knowledge (Young, 2013), whereas learner-centred teachers may be concerned about formalism and decreasing autonomy if they had to take the prescribed state curriculum into account when implementing the school curriculum, which is in conflict with the declared objectives of reform.

Concerning the attitudes towards curriculum reform, the analysis showed that there is no significant difference between teachers' gender, teachers' length of teaching experience, and teachers' involvement in school management, which corresponds to the conclusions of other researchers (e.g., Porubský et al., 2015; Roggenbrodt, 2008; Tůmová, 2012). Moreover, the SEP coordinators accepted the reform more reluctantly than ordinary teachers did, which can be attributed to coordinators' greater awareness of the demands and duties resulting from their roles. Based on the theoretical model of social interaction (Huberman, 2002), we can also interpret our finding through the role of a connection between the knowledge (innovation) producers and their users. The knowledge of the producers is spread by 'diffusers' (linkage agents) who help disseminate it – they translate and communicate it to the users so that the users implement them successfully (cf. Becheikh et al., 2010). Because the coordinators are the linkage agents of the reform, their attitudes matter and, if they are poor, they could be infectious. Therefore, a substantial question might be raised: Can we even expect teachers to have positive attitudes when their coordinators do not?

The research demonstrated that an essential factor regarding the attitudes towards curriculum reform is if the respondents teach at primary or lower secondary school. The respondents teaching at the lower secondary school level had more resistant attitudes than those teaching at the primary school level did for the probable reason that teaching at the first stage (including more subjects) provides teachers with more space for fulfilling the reform objectives as well as greater autonomy than teaching individual school subjects. However, this fact has not yet been proved in other research.

Charalambous and Philippou (2010) and Vanderlinde a van Braak (2011) pointed out the significant role of self-efficacy in accepting curriculum reforms, which our research proves as well. Our findings revealed that the use of curriculum documents and self-efficacy have an impact on the respondents' attitudes towards curriculum reform. We can say that the more teachers use curriculum documents, the higher self-efficacy they have and the greater their tendency to accept curriculum reform was. Despite this fact, in accordance with Liou, Moolenaar and Daly (2016), we understand the concept of self-efficacy only as one of the sub-constructs that help comprehend the complexity of teachers' attitudes in a broader context. The use of curriculum documents and self-efficacy are clustered into the construct *attitudes* in approximately 17%. In particular, the factor of the use of curriculum documents appears to be critical for investigating the impact of the reform on professional practice. In order to define a successful change, daily routines and behaviour patterns should be taken into

account. Also, teachers' characteristics, such as their character, ability to face uncertainty, historical experience, traditions, cultural characteristics, rituals, etc., could play an essential role in explaining the attitudes (Lee & Yin, 2011).

Regarding the retrospective evaluation of empirical adequacy and theoretical conclusiveness of the CBAM, which served as inspiration for developing questionnaire items, our research has revealed a causal link between the two integral components of the model: attitudes towards curriculum reform and use of curriculum documents. Contrary to the original model (as proposed by George et al., 2013), the component of attitudes showed that teachers' attitudes in our research represent a one-dimensional construct. These findings are crucial because research based on the CBAM has always measured attitudes as a multidimensional variable (Charalambous & Philippou, 2010; George et al., 2013; Kwok, 2014). The reason for a low level of representation of the affective component is apparently a ten-year interval and emotional distance from the introduction of the reform, so teachers' attitudes may be explicit and rational, which is reflected in reliability of the cognitive component of attitudes. By way of illustration, Cheung and Yip (2004) have already pointed out the developmental nature of the concerns in the CBAM model. Another possible cause may be polysemy in respondents' perception of the components of affective nature or limitation of the selected data collection method when respondents were probably not willing to focus on other components than cognitive in the questionnaire. To validate and interpret our findings in greater detail, we recommend extended interviews with individual teachers to probe their questionnaire statements and to reflect the impact of the reform in a wider school context.

Conclusion

We determined that the primary and lower secondary school teachers in the Czech Republic have adopted rather resistant attitudes towards curriculum reform 10 years after its introduction. This finding represents another contribution to international research documenting and proving the failure of curriculum reform implementation (Bantwini, 2010). The most important finding of the research is that we identified three significant variables related to the teachers' acceptance of reform: approach to the curriculum, school level (primary/lower secondary school), and the position they had within the curriculum implementation. Next, the research revealed that teachers' acceptance of the reform tends to increase in the case of the teachers using curriculum documents regularly and the teachers with higher self-efficacy.

Acts of teachers' resistance often indicate the fundamental importance of altering authority relations (Gitlin & Margonis, 1995). Therefore, teacher resistance should be taken as a potential source of new ideas for improvement. This remark is highly relevant to the Czech Republic and countries with similar historical and educational backgrounds where the educational system is hindered by low levels of expertise among teachers, headteachers, and policy-makers (Straková & Simonová, 2013).

The results suggest that a 10-year period of time is not sufficient for the change in teachers' mindset with respect to educational change. As Hamot (1997, p. 4) assumes, after forty-three years of totalitarian communism, it is not possible to expect complete democratic educational reform to result from one curriculum development project. The reason that so many teachers hold negative and neutral attitudes to the reform might be also explained by teachers' engagement with other issues currently being dealt with at schools as declared in new strategic plans of the educational policy (*Strategy for Education Policy of the Czech Republic until 2020*), for example, with a new system of inclusion of children with various personal disadvantages in education. Teachers were not given enough time for the curriculum acceptance as the policy makes further conceptual decisions that need to be transferred to practice immediately. This might be the clue also for the other Visegrád Group countries that are trying to catch up with the Western European countries after 40 years of totalitarian centralised education and meet the requirements of the educational policy of the European Union.

The implications of the study for educational policy are suggested at different levels: Firstly, curriculum reforms should be connected to systematic monitoring and evaluation, not only during the implementation but also after a longer interval from their introduction before they wash out over time as funds and energy disappear. Secondly, the support of linkage agents should be strengthened. The attitudes of people (SEP coordinators) who are responsible for the dissemination of reform ideas are crucial for successful reform implementation. Thirdly, professional development of teachers should be promoted at the state level, especially in the form of promoting teacher collaboration within the schools, particularly between primary and lower secondary schools (e.g., in the form of learning communities, see Van Driel, Beijaard, & Verloop, 2001). The fact that teachers teaching at primary and lower secondary schools perceive the curriculum documents differently suggests recommendations for curriculum document development. As for the secondary school teachers, it is necessary to define the educational aims in a different way than in the primary school curriculum. The reform ideas should be explained at the level of individual school subjects.

A challenge for further research is to focus on accepting teachers who, despite general criticism of the reform, hold positive attitudes towards it. This research could discover further variables that play a role in the teachers' attitudes.

It is evident that teachers should be involved in a long-term preparation of the reform process (Gitlin & Margonis, 1995) so that their voices can be heard. They should enter and be given sufficient time to assimilate to the proposed changes (Fullan & Miles, 1992). This would enable the reform to respond to the teachers' specific needs and experience and support their ownership of the reform (Sandholtz, 2002).

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Appendix A

Characteristics of a research sample in absolute and relative values

		n	%
Gender	Female	594	84.7
	Male	107	15.3
Length of experience	0–5 years	70	10.0
	6–10 years	50	7.1
	11–15 years	90	12.8
	16–20 years	104	14.8
	21–25 years	100	14.3
	26–30 years	89	12.7
	More than 30 years	198	28.2
Role held within the SEP implementation	SEP coordinator	58	8.3
	SEP co-creator	369	52.6
	None	274	39.1
School level	Both levels	200	28.5
	Primary	237	33.8
	Lower secondary	264	37.7
Post held in school	Subject leader	75	10.7
	School management	94	13.4
	Teacher	532	75.9
Subjects taught	Languages	43	6.1
	Science	83	11.8
	Primary school subjects	202	28.8
	Humanities	20	2.8
	Art and physical education	20	2.9
	Combination	333	47.5
Approach to curriculum	Subject matter-centred	47	6.7
	Learner-centred	563	80.3
	System-centred	85	12.1
	Not selected	6	.9

Appendix B

Distribution of attitudes (continuum) according to the demographic data in absolute and relative values

Variable		N			% Out of a total			
		Accepting	Neutral	Resistant	Accepting	Neutral	Resistant	Sum
Gender	Female	*109*	*220*	*265*	*15.5*	*31.4*	*37.8*	*84.7*
	Male	21	37	49	3.0	5.3	7.0	15.3
Length of teaching experience	0–5 years	18	21	31	2.6	3.0	4.4	10.0
	6–10 years	7	18	25	1.0	2.6	3.6	7.1
	11–15 years	20	36	34	2.9	5.1	4.9	12.8
	16–20 years	22	30	52	3.1	4.3	7.4	14.8
	21–25 years	15	46	39	2.1	6.6	5.6	14.3
	26–30 years	11	37	41	1.6	5.3	5.8	12.7
	More than 30 years	*37*	*69*	*92*	*5.3*	*9.8*	*13.1*	*28.2*
Role within the SEP implementation	SEP coordinator	10	20	28	1.4	2.9	4.0	8.3
	SEP co-creator	*66*	*143*	*160*	*9.4*	*20.4*	*22.8*	*52.6*
	None	53	94	126	7.6	13.4	18.0	38.9
School level	Both levels	37	82	81	5.3	11.7	11.6	28.5
	Primary	45	77	115	6.4	11.0	16.4	33.8
	Lower secondary	*48*	*98*	*118*	*6.8*	*14.0*	*16.8*	*37.7*
Post in school	Subject leader	9	31	35	1.3	4.4	5.0	10.7
	School management	17	39	38	2.4	5.6	5.4	13.4
	Teacher	*104*	*187*	*241*	*14.8*	*26.7*	*34.4*	*75.9*
Subjects taught	Languages	7	20	16	1.0	2.9	2.3	6.1
	Science	15	30	38	2.1	4.3	5.4	11.8
	Primary school subjects	40	70	92	5.7	10.0	13.1	28.8
	Humanities	4	2	14	.6	.3	2.0	2.9
	Art and physical education	4	7	9	.6	1.0	1.3	2.9
	Combination	*60*	*128*	*145*	*8.6*	*18.3*	*20.7*	*47.5*
Approach to curriculum	Subject matter-centred	2	14	31	.3	2.0	4.4	6.7
	Learner-centred	*106*	*201*	*256*	*15.1*	*28.7*	*36.5*	*80.3*
	System-centred	22	38	25	3.1	5.4	3.6	12.1
	Not selected	0	4	2	.0	.6	.3	.9
Sum	701	130	257	314	130	257	314	701
%	100.00	18.54	36.66	44.79				

Note. In regards to demographic variability, the dominant category at all levels of the continuum was italicized.

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Research-Based Learning in Initial Teacher Education in Catalonia

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The teaching profession is undergoing significant changes, some of which are imposed by the new paradigm of education. This new context marks the shift from the teachers' position as 'knowledge users' towards the more complex position of 'knowledge creators'. In this new professional culture adapted to a changing society, teaching as a profession is understood as undergoing a continuous transformation and innovation process, while the professionals in the educational field appear to be research users and research promoters able to think thoroughly about their own professional needs and the new topics arising in their field. There is, therefore, a shift from a passive to an active position, enabling educators to become aware of how complex their field is and to understand that it cannot be acknowledged and managed from outside the social, cultural, historical, philosophical, and psychological contexts shaping it. Taking into consideration the characteristics of the new professional culture, this paper is focused on the development of research skills as one of the teachers' core skills. The study is framed at the Universitat Autònoma de Barcelona, where the Student Perception Research Integration Questionnaire (SPRIQ) of Visser-Wijnveen et al. (2015) was applied to measure students' perception of research integration in university courses (n=113). Additionally, analysis of the documents on the syllabus of each course of the BA in Primary Education programme was applied to review the research component of initial teacher education curricula. Findings from students' responses show that they are more consumers than producers of research. We emphasise the importance of student teachers being able to both consume as well as produce research in order to develop professionally.

Keywords: research-based learning, research integration in curriculum, teacher education

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Na raziskavah temelječe učenje v začetnem izobraževanju učiteljev v Kataloniji

Ingrid Agud in Georgeta Ion

Učiteljski poklic se spoprijema s pomembnimi spremembami, od katerih so nekatere posledica nove paradigme izobraževanja. V novem kontekstu gre za premik v vlogi učiteljev kot »uporabnikov znanja« h kompleksnejši vlogi »ustvarjalcev znanja«. V tej novi poklicni kulturi, ki se prilagaja spreminjajoči se družbi, se poučevanje kot poklic dojema kot proces nenehnega preoblikovanja in inovacij, strokovnjaki na področju izobraževanja pa kot uporabniki raziskav in spodbujevalci, ki so sposobni celovito razmišljati o svojih lastnih poklicnih potrebah in novih temah na tem področju. Gre za premik od pasivne k aktivni vlogi, ki omogoča delavcem v izobraževanju ozaveščenost o kompleksnosti tega področja in tem, da ga ni mogoče razumeti in upravljati zunaj socialnih, kulturnih, zgodovinskih, filozofskih in psiholoških kontekstov, ki ga oblikujejo. Ob upoštevanju značilnosti nove poklicne kulture se ta članek osredinja na razvoj raziskovalnih veščin kot ene temeljnih veščin učiteljev. Študija, ki je bila izvedena pod okriljem univerze Universitat Autònoma de Barcelona, je uporabila potrjen vprašalnik (Visser-Wijnveen et al., 2015) za merjenje mnenj študentov o vključitvi raziskav v univerzitetne programe (n = 113). Poleg tega so bili analizirani dokumenti učnih načrtov vsakega predmeta dodiplomskega študijskega programa za študente razrednega pouka z namenom pregleda raziskovalnih komponent v učnih načrtih začetnega izobraževanja učiteljev. Ugotovitve na podlagi odgovorov študentov kažejo, da so ti bolj uporabniki kot oblikovalci raziskav. Poudarjamo pomembnost sposobnosti študentov – bodočih učiteljev – za uporabo in oblikovanje raziskav za njihov poklicni razvoj.

Ključne besede: na raziskavah temelječe učenje, vključitev raziskav v kurikulum, izobraževanje učiteljev

Introduction

The development of teacher research competence and research-based teacher education, as an approach and phenomenon of the 21st century, have received increasing interest among policymakers, researchers of teacher education, and teachers in many countries of the world, based on the assumption that they are a means to improving teacher education.

Over the previous decade, European bodies have shown their commitment to the field of teacher education.

The Draft Conclusions of the Council and of the Representatives of the Governments of the Member States, meeting within the Council, on Improving the Quality of Teacher Education adopted in October 2007 (European Union, 2007), provides a useful reminder of the mission of teaching, stating:

> teaching provides a service of considerable social relevance: teachers play a vital role in enabling people to identify and develop their talents and to fulfil their potential for personal growth and well-being, as well as helping them to acquire the complex range of knowledge, skills and key competences that they will need as citizens throughout their personal, social and professional lives. (p. 300/7)

Teachers should possess a set of key competences to carry out this mission; in this framework, the European Union education ministers also emphasised the need for today's teachers to 'develop new knowledge and be innovative through engagement in reflective practice and research (European Union, 2007).

In 2015, the European Commission published a guide on policies to improve initial teacher education. Two of the suggested policy actions are related to teacher research competence. The Commission (2015) recommends: To achieve a creative and reflective teaching workforce, policies and actions should encourage student teachers and teachers to use and engage in new research in their learning and practice. While Initial Teacher Education (ITE) lays the foundations for this, policy actions should foster innovative cultures in schools and ensure they have links with universities and other organisations that support research-informed development of teaching practices.

Action research is suggested, by the European Commission in this guide, as a mode of finding a valid solution to a challenge in classroom practice (European Commission, 2015).

Several researchers have contributed to developing the theory of research in general and teacher research in particular. An impressive number of

papers have been published on research-based education in recent years, to make it a core topic of the educational practices in many countries. Those holding top positions in the international rankings in terms of education quality are the same countries that have contributed the most to developing this paradigm (e.g., Finland and Norway).

Hopkins (2008) presents a rationale for teacher research, focused on three themes that justify and make imperative the concept of classroom research by teachers. He identifies:

> The first is the link between classroom research by teachers and the establishing and refining of professional judgement. The second is making the focus of classroom research the curriculum and teaching learning. The third is the inappropriateness of the traditional research paradigm for helping teachers to improve their teaching. (2008, p. 41)

In this line, Kincheloe (2012) considers that teachers have to deal with new challenges in current society, which highlights the role of the teacher as knowledge constructor and reflexive practitioner. The author summarises the following changes teachers have to deal with:

- Constructing a system of meaning.
- Understanding dominant research methods and their effects.
- Selecting what to study.
- Acquiring a variety of research strategies.
- Making sense of the information collected.
- Gaining awareness of the tacit theories and assumptions which guide practice.
- Viewing teaching as an emancipator praxis-based act.

Taber (2007), explaining the importance of research skills during initial teacher education, summarises:

> […] in the 21st century context of being a teacher, there is an expectation of engaging with, and to some extent in, educational research; in the 21st century context of becoming a teacher, there is an expectation of being prepared to engage with, and to some extent in, educational research; in the 21st century context of becoming a teacher through a postgraduate route, there is an expectation of engaging with educational research at a high academic level. (2007, p. 10)

Considering the importance of student teachers research skills, ETUCE (2009) states that student teachers must acquire theoretical knowledge and skills in research methodologies to organise, implement and analyse research and development work usually within their own classroom or school and elsewhere.

Changing role of teachers from knowledge users to knowledge creators

The teaching profession is undergoing important significant changes, in particular, within the new paradigm of education. This new context marks the shift from the teachers' position as 'knowledge users' towards the more complex position of 'knowledge creators'. In this new professional culture adapted to a changing society, teaching as a profession is understood as undergoing a continuous transformation and innovation process, while the professionals in the educational field appear to be research users and research promoters able to think thoroughly about their own professional needs and the new topics arising in their field.

There is, therefore, a shift from a passive to an active position enabling educators to become aware of how complex their field is and to understand that this field cannot be acknowledged and managed from outside the social, cultural, historical, philosophical, and psychological context shaping it. Teachers thus become aware not only of the students' immediate needs and of the facts occurring during their classes but also of their training and professional needs. According to authors such as Kraft (2001) and Beretter (2002), the teachers become the researchers of their professional practice.

When teachers accept their position as researchers, they take a critical attitude towards the real problems of the educational context in which they carry out their activities, and thus they become active players in the teaching innovation process.

When the teaching activity is based on inquiry, the entire educational process helping to train future experts in the education field is designed around knowledge, producing it, and the skill for using it effectively.

The starting point of this process is obviously the initial training system for education professionals. In a research-based education model, all training courses are in keeping with the investigation and are related to solving real problems issued from the professional field. Krokfors et al. (2011) consider training to be enabling the teachers to be autonomous and reflexive professionals, able to act as researchers and characterised by a high level of self-reflection. The aim is not merely producing researchers, but also endowing students and future

professionals with sufficient competences and knowledge to empower them to apply what they have learnt, to observe the students, to analyse what they think, and to find solutions for the needs identified (Kansanen, 2007; Krokfors, 2007; Toom *et al.,* 2010; Westbury *et al*., 2005, among others).

Several authors have been studying the teaching-research nexus; Healey (2005) provides a diagram that illustrates curriculum design and research-teaching nexus. He has presented four different approaches to the teaching-research nexus using two axes. One classifies approaches to linking teaching and research according to the extent to which they are teacher-focused in which students are seen as the audience or student-focused and treat students as participants. The second axis classifies the approach as emphasising research content or research processes and problems.

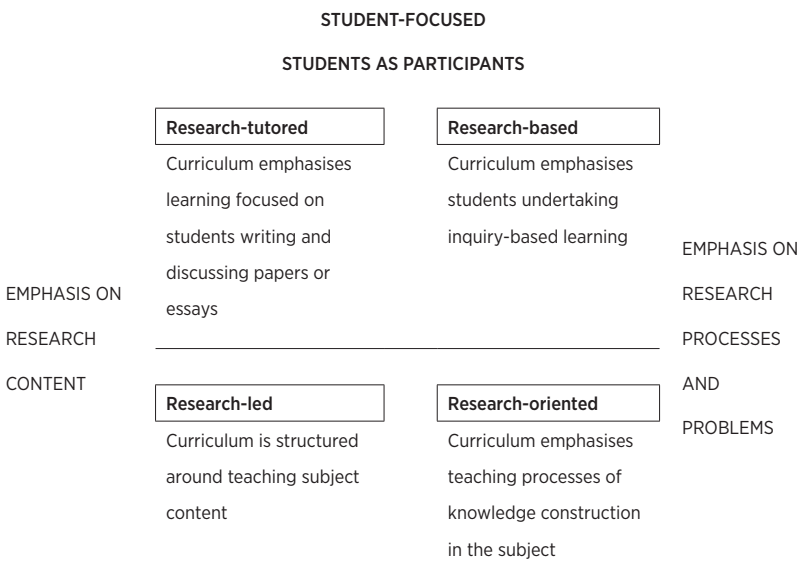

Figure 1. Healey's Diagram. Adapted from Healey, 2005.

Krokfors et al. (2011) think that a research-based training process starts with teachers needing in-depth knowledge of the latest and the most relevant research results in their teaching field. Simultaneously, they need to be familiar with the latest evolutions in terms of teaching and learning methods and techniques. Interdisciplinary research and teaching knowledge are the bases necessary to develop methods that can be adapted to various students' profiles.

The second important element, according to the research-based paradigm, is that the teachers' training can be considered an investigation and research topic in itself. This research work must provide the necessary knowledge of the quality and effectiveness of various educational systems and different teaching approaches. Specifically, any approach of research-based education aims to make the teachers-to-be develop an attitude oriented towards curiosity and research throughout their activity. This means that they learn how to approach their profession in an open and analytical manner and how to build their conclusions on observation and experimentation while carrying out their work in a systematic and complex manner (Niemi & Jakku-Sihvonen, 2006).

The various studies showed that students, both undergraduate and postgraduate, perceived benefits as well as challenges when links between research and teaching were emphasised. Perceived benefits included increased motivation and interest in the subject because of the teacher's enthusiasm and greater credibility (Jenkins et al., 1998; Robertson & Blackler 2006).

Jenkins and Healy (2009) argue that too much of higher education relates to students as an audience and that students would benefit from spending more time as participants in research processes. It is proposed that in preservice teacher education, the vast majority of research related activity that students undertake should be related to research-led learning. Students are expected to relate their assignments, essays and examination papers to prevailing literature and academics see this as a way to promote scholarship in their learning experience. This approach sees undergraduate students as passive receivers of knowledge using the same transmissive pedagogy that most teacher-educators criticise (using arguments such as those presented by Carroll, 1998).

A research-based approach in teacher education is arguably as important as in any scientific discipline, if not more. Unlike many of the sciences in which knowledge and principles are relatively stable from context to context, teaching is a decidedly complex discipline that is highly context dependent. This means that while teachers can draw upon some theoretical frameworks to inform their practice, they may need to extrapolate, reinterpret, or redefine approaches depending on the specific circumstances of their students, classroom environment, school and community. That is to say, research-based approaches to teaching are required in order to be an effective teacher (Buckley, 2011).

Method

This paper presents the preliminary inquiry of a research project which aims to investigate the development of research competence in initial teacher

education and to present ways how to reshape teacher education using a research-based approach.

This research has three main aims: 1) to review the research component of initial teacher education curricula; 2) to gain a greater understanding of how student teachers perceive and experience the research skills development; 3) to identify the quality, motivation, and participation on research during the bachelor's degree.

Setting

The study was implemented at the Faculty of Education Sciences of the Universitat Autònoma de Barcelona (UAB), specifically at the bachelor's degree in Primary Teacher Education, which is a four-year university programme that offers the basic training needed to teach to 6- to 12-year-olds within the context of Catalonia's compulsory education system. This faculty is one of the most innovative higher education institutions in Catalonia for teacher education as well as being a pioneer in offering courses in English, Spanish, and Catalan, applying methodology of the Content and Language Integrated Learning approach[3] (CLIL) (also called 'ICLHE', meaning Integrating Content and Language in Higher Education) (Wilkinson, 2015) in the Spanish context. As a pioneer regarding the internationalisation of faculties, the faculty would also like to pioneer training teachers with research skills to create knowledge from their daily practice.

Sample

For this preliminary analysis, the students of Primary Teacher Education Degree were studied. In total, 240 students were enrolled in the degree programme, and the sample consisted of 113 students who consented to participate in the research (89.4% female; 9,7% male; 0.9% agender). The sample size calculation considering a 95% confidence level for finite populations (p and q=0.5) indicated that the margin of error was ±6.72. Table 1 below shows the sample description regarding the level of the students.

3 Approach for learning academic contents by using a third language (Marsh, 1994).

Table 1
Sample description per academic year

Year	Frequencies	Percentage
1st	38	33.6
2nd	24	21.2
3rd	17	15.1
4th	34	30.1
Total	113	100.0

Regarding the first objective (to review the research component of initial teacher education curricula), we applied document analysis to the syllabus of each course of the BA in Primary Education. Table 2 shows all courses for each year, listed regarding whether they are compulsory or optional subjects.

Table 2
Study plan structure for Primary Teacher Education at UAB

Compulsory Training	
1st year • Education and Educational Contexts • Society, Science and Culture • Educational Communication and Interaction I and II • Contemporary Theories and Practices in Education • Languages and Contexts I and II • Mathematics for Teachers	**2nd year** • Learning and Development I • Teaching Methods and Curriculum Development • Social Context and School Management • Physical Education in Primary Education • Learning Mathematics and the Curriculum • Languages and Curricula • Teaching and Learning about the Natural, Social and Cultural Environment • Musical and Visual Education • Practicum I
3rd year • Learning and Development II • Differences and Inclusion • Languages and Learning • Management and Innovation in the Mathematics Classroom • Musical and Visual Education and Learning • Planning, Research and Innovation • Teaching Experimental Sciences • Teaching Social Sciences • Physical Education and its Teaching I • Centre's Linguistic Project and Multilingualism • Practicum II and III	**4th year** • Practicum IV and V • Bachelor's Degree Final Research Project

Optional Subjects
4th year: Students must choose from the following list: • Religion, Culture and Values • Research and Innovation in the Teaching of Social Sciences • Communication, Image and Simulation in the Social Science Classroom • Education for Citizenship • Educational Values in Science Inside and Outside the Classroom • Laboratory and Virtuality in Primary Education • Sequencing and Assessment in the Learning of Science and Mathematics • Linguistic and Literary Heritage • Projects to Teach and Learn Language • Children's Literature • Linguistic Reception at School • Mathematics to Understand the World • Mathematics at School • Mathematical Games and Activities in Primary Education • Art Projects • Audio-visual Languages and Artistic Expression • Innovative Teaching in the Visual Arts

Instrument and techniques

The questionnaire constructed and validated by Visser-Wijnveen, Van der Rijstn, and Van Driel (2015) was applied to measure student perception of research integration in university courses named *Student Perception of Research Integration Questionnaire* (SPRIQ).

This instrument is a tool of 40 items scored on a five-point Likert scale. The questionnaire consists of three constructs (Visser-Wijnveen et al., 2015, p. 6): 'research integration', 'quality of the course', and 'beliefs about research integration'. Among the 40 items, 36 were scored on a frequency scale, ranging from very rarely to very frequently, while the four questions of the beliefs scale were scored on an agreement scale, ranging from strongly disagree to strongly agree.

The scale applied to the sample shows a high level of reliability with a Cronbach Alpha of .963; being above .80, it proves good internal consistency of the scale.

For the purposes of this research, document analysis of primary education study programmes was carried out, searching for the research component on the syllabus of the different subjects to analyse how research is integrated into the educational curriculum of teacher education.

Procedure

The questionnaire was completed in class in May 2016. Once the data were gathered, univariate and multivariate statistical analyses were performed using IBM Statistical Package for the Social Sciences (SPSS v.20).

Syllabi of the courses were analysed in January 2017 and up to this point they have not been yet modified in the current year.

Results

1. Findings from curricula documents review.

As it described in the degree's presentation note, the Bachelor's Degree in Primary Education aims to provide basic training needed to work as a teacher of the 6- to 12-year age group in compulsory education. The degree is based on the teaching methods of Rosa Sensat, known throughout the country for her tasks as an educator and teacher. The bachelor's degree aims to train professionals prepared to teach within the context of the Catalan school system.

To complete the training, students must achieve a total of 240 ECTS, the distribution of which is shown in Table 3. If the students want to have a European recognition according to the Bologna criteria, they also should do a minimum of 30 ECTS (five courses) related to different specialisation programmes. The specific programmes are: Physic Education; Foreign Languages: English; Foreign Languages: French; Special Educational Needs; Music Education; Language and Literature; Mathematics; Social Sciences; Experimental Sciences; Visual Education and Arts; Scientific Education and Mathematics for Digital Tools; Scientific Education and Social Studies with Digital Tools and Multimedia Resources and Language and Social Studies.

Table 3
European Credits (ECTS) *for the Bachelor of Primary Education at the UAB*

Year	Basic Training	Compulsory	Optional	Final Research Project
1	30	30		
2	18	42		
3	12	48		
4		24	30	6
Total	**60**	**144**	**30**	**6**

Note. Credit (ECTS) point corresponds with 25 hours of academic load.

After reviewing the syllabus of the courses, we were confounded by the fact that the research component in the curriculum of the programme for a BA in Primary Education is only specified as such in the subject *Planning, Research*

and Innovation (6 credits) offered in the third year. We also could find a research component in the Bachelor's Degree *Research Project* (6 credits) planned for the fourth year of studies.

In relation to the curriculum at the UAB, the only skills related to research are formulated as follows:

- Develop learning and academic skills and strategies to acquire a sufficient level of autonomy in one's studies and, at the same time, understand the importance of refreshing one's training on a permanent basis. (Basic)
- Promote critical reading and comment regarding the different scientific domains contained in the school curriculum. (Specific)
- Manage the information related to the professional environment for making decisions and producing reports. Critically analyse the work done. (Transversal)
- Recognise and evaluate the social reality and the interrelation with implied factors in anticipation of any action. (Transversal)

However, we are aware that the introduction of the research component in the Teacher's Training also relies upon the methodologies and learning strategies applied by the professors to enhance research skills. These methodologies are not necessarily specified in the syllabus. Therefore, we recognise the need to develop the study further and add an inquiry to professors in order to be able to identify further research components in their teaching methods.

2. *Student perceptions of research-based approaches.*

We first present a descriptive analysis of Items of the Student Perception of Research Integration Questionnaire (SPRIQ) (Visser-Wijnveen et al., 2015) such are means and standard deviation, as seen in table 4.

Table 4
Means and Standard deviation for the Items of the Student Perception of Research Integration Questionnaire (SPRIQ)

ITEM	UAB	
	M[a]	SD
1. During my studies, I assimilated knowledge about research findings	3.19	.822
2. During my studies I learned to pay attention to the way research is carried out	3.12	.933
3. During my studies, I developed an academic disposition	3.30	.885
4. During my studies, there were opportunities to talk with researchers about scientific research	2.09	.931

ITEM	UAB	
	Ma	SD
5. During my studies, attention was paid to recent developments in the field	2.89	1.097
6. During my studies, the scientific research process was an essential part of the curriculum	2.62	1.020
7. During my studies, I was inspired to learn more about this discipline	3.08	1.045
8. During my studies, my understanding of the most important concepts in the domain has increased	3.48	.917
9. During my studies, attention was paid to research methodology	2.96	.944
10. During my studies, I felt part of the university's academic community	2.89	1.072
11. During my studies, I became familiar with the research carried out by my teachers	2.53	1.010
12. During my studies, my teachers encouraged me not to be satisfied with an explanation too quickly	2.95	1.109
13. During my studies, we searched for answers to unanswered research questions together with the teachers	2.41	1.107
14. During my studies, I became enthusiastic about my scientific domain	2.61	1.081
15. During my studies, my contribution to the research was valued	2.48	1.158
16. During my studies, I came in contact with my teachers' research	2.32	1.029
17. During my studies my participation in the research was important	2.35	1.140
18. During my studies, I got the opportunity to hear about current scientific research	2.78	1.041
19. During my studies, I became familiar with the results of scientific research	2.77	1.009
20. During my studies, I was stimulated to critically assess literature	2.95	1.109
21. During my studies, I felt involved in the university's research culture	2.32	1.029
22. During my studies, my awareness of the research issues that scientific researchers are currently contributing to was increased	2.70	.981
23. During my studies, I learned what kind of studies have been carried out in my field	3.00	1.061
24. During my studies, my interest in research in this area was increased	3.08	1.062
25. During my studies, I made a contribution to development in my field	2.31	1.036
26. During my studies, I learned the ways in which research can be conducted in this field	2.96	1.026
27. During my studies, the teachers encouraged us to ask critical questions about our work	3.72	1.114
28. During my studies as a student, I felt involved with the research	2.69	1.036
29. During my studies, I had opportunities to socially interact with researchers within the university	2.10	.916
30. During my studies. links to current research practices were made	2.66	.997
31. During my studies, I became involved in my teachers' research	2.21	1.089
32. During my studies, my teachers encouraged personal interest and enthusiasm for research in this field	2.92	1.151
33. During my studies, the teachers had sufficient time to support me in my learning process	2.71	1.058

ITEM	UAB	
	M[a]	SD
34. During my studies the teachers carried out their instruction adequately	3.06	.859
35. During my studies, my teachers were able to explain the subject matter effectively	3.15	.858
36. During my studies, I developed an accurate picture of what was expected of me	3.04	1.109
37. My learning is stimulated when education is grounded in research	3.20	1.070
38. It is important to me that my teachers conduct research	3.54	1.134
39. Education in which scientific research is central stimulates my learning	3.18	1.071
40. The research culture at the university stimulates my learning process	2.96	1.093

Note. [a] = On a response scale of 1-5.

First, it is noteworthy that at the UAB students think that *During their studies. the teachers encouraged them to ask critical questions about their work*, presenting this item the higher mean (3.72). According to Visser-Wijnveen et al (2015), this item refers to the academic disposition encouraged my research. Students also state that it is *important to them that teachers conduct research* (M = 3.54), which relates with the beliefs about research integration in class. Finally, the following highest scored item is *During my studies my understanding of the most important concepts in the domain has increased* (M = 3.48), which shows the importance they give to reflection on research product, rather than research process.

In contrast, among the lowest scored items we find *During my studies there were opportunities to talk with researchers about scientific research* (M = 2.09); *During my studies I had opportunities to socially interact with researchers within the university* (M = 2.10*); During my studies I became involved in my teachers' research* (M = 2.21) and *During my studies I made a contribution to development in my field* (M = 2.31).

As we can see, the lowest items scored by students relate to the integration into the research community during their degree and to the contact they experienced with the teachers' research.

Considerable differences were found when comparing means between the level of students. We applied t-test for independent samples to compare the means among independent groups to determine whether there were statistical meaningful differences. In order to achieve meaningful results when performing comparisons of groups, we grouped the students by junior-senior students: Group 1 (junior) are students in the two first year of the degree and Group 2 (senior) are students in the two lasts years of the degree. The results reveal the following statistically significant differences with respect to the level of study (Table 5).

Table 5
Comparison of mean scores between groups

ITEM	Group 1 Students in 1st and 2nd year	Group 2 Students in 3rd and 4th year	Sig. (bilateral) P < .05
7. During my studies, I was inspired to learn more about this discipline	3.40	2.69	.00
10. During my studies, I felt part of the university's academic community	3.13	2.61	.01
12. During my studies my teachers encouraged me not to be satisfied with an explanation too quickly	3.15	2.71	.03
21. During my studies, I felt involved in the university's research culture	2.50	2.10	.03
24. During my studies, my interest in research in this area was increased	3.29	2.82	.01
27. During my studies, the teachers encouraged us to ask critical questions about our work	3.92	3.47	.03
39. Education in which scientific research is central stimulates my learning	3.37	2.94	.03

Students in the first two years gave higher scores than the students in the two last years of the degree, especially significant in those items related to, first, academic disposition (items 12 and 27) or students developing approaches and dispositions towards knowledge development and research, defined as intangible aspects by Neumann (1992). This was followed by the integration of research (items 10 and 21) and beliefs towards research (item 39). Moreover, finally, related to motivation for research were items 7 and 24. This fact should be taken into consideration and work towards finding the reasons motivation decreases in students who are in the last two years of their bachelor's degree, as those are the years in which they develop their final research project, and the subjects have a higher research component.

Regarding the students' perception of research integration, we can affirm that students agree that education in which scientific research is central stimulates their learning and that research culture stimulates their learning process. Therefore, research improves their academic disposition. They also feel they did not contribute to development in the field, so they should be more involved in real empirical research in the primary teaching professional context.

They affirm there are not enough opportunities to be integrated within the research community because they did not have the opportunity to talk with researchers, being involved in teacher's research or being aware of research done on the topics related with the curriculum subjects.

We strongly believe this is significant data that we should not neglect when transforming and improving the education of future teachers.

Discussion

To understand the way students perceive research integration in their courses is essential in order to improve the curriculum in teacher education, especially when the goal of universities is to strengthen the links between teaching, learning, and research.

To apply this study in our faculty has been very useful to provide information to teachers and degree coordinators by increasing their understanding of student's perceptions. In UAB, most professors develop research themselves. This close link between teaching and research is considered by Elen and Verburgh (2008) to be at the heart of academic institutions. However, when examining the results from SPRIQ, the link appears to be not sufficient for professors to engage students in research or even to transfer knowledge and skills in the university class. There is a lack of research process and research result components in the different courses of the degree.

From the findings of our research, we conclude that teacher education programmes should reshape the development of research skills based on contemporary approaches. Universities need to reshape the teacher education programmes, because the traditional approach to educational research is not of much use to teachers. Teacher education programmes should be focused on effective implementation of research-based approach to ensure closer relation between classroom realities and pedagogical theories and practices, in order to prepare student teachers to integrate research in their future career.

Based on our research data, we underline the need to improve the development of research skills from the first years of initial teacher education, focusing on a range of skills necessary for doing research, including information-seeking skills, methodological and data analytical skills, communicating skills.

Students' research final projects need to be related to on-going research at the university and/or development projects in school. In this way, universities promote and push forward research priorities, and students will be able to be involved in the real research life of the institution to which they belong.

The most suitable form of research for student teachers at the bachelor's level is recommended the action research type of work as it will prepare prospective teachers to examine their professional practice and continually improve teaching and learning in their classrooms and beyond.

Findings from students' responses show that they are more consumers

than producers. We emphasise the importance of student teachers being able to both consume as well as produce research in order to develop professionally.

Conclusions

This paper supports the idea that it is imperative for the future teachers to have the capacity to integrate research into their professional practice because of a number of reasons, including the sensitive nature of their context, the rapidly evolving nature of teaching, needing to test new pedagogical approaches and understand their impact on learning, needing to determine the effectiveness of their teaching strategies and make judgments, needing to find and analyse problems they may face in their future work, and needing to study and develop their own professional practice on a continuous bases. We uphold the idea that it is no longer sufficient for teachers to be limited to classroom research; connecting teacher research, school development, and system reform is recommended.

We find the development of the national curriculum guidelines on teacher education that will provide the policy for the institutions' programme descriptions to be useful. They will ensure a nationally coordinated teacher education that satisfies the quality requirements of the teacher education programmes for pre-school, primary and secondary education.

In the framework of research-based approach implementation, we suggest taking into consideration two best practices:

1. The Finish model of research-based teacher education. ITE in Finland is research-based, and the objective is to educate teachers to have the capacity to utilise the most recent research in the fields of education and the subjects taught. This model has four characteristics: 1) the study programme is structured according to a systematic analysis of education; 2) all teaching is based on research; 3) activities are organised in such a way that students can practice argumentation, decision making and justification when inquiring about and solving pedagogical problems; and 4) the students learn formal research skills during their studies (Toom et al., 2008).
2. The Norwegian experience that has already drawn international attention. Report of European Commission (2013) states: In Norway, the Ministry of Education and Research has started a research programme for teacher educators (PRAKUT), engaging them in practice based educational research in close cooperation with schools. This programme is supported by a national graduate school in teacher education (NAFOL),

where teacher educators can join PhD programmes. While supporting the development of teacher educators' research expertise, this initiative also contributes to the development of the knowledge base on teaching, teacher education and teachers.

Achieving the target of developing student teachers as researchers will remain a goal for universities.

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Development of Teachers' Beliefs as a Core Component of their Professional Identity in Initial Teacher Education: A Longitudinal Perspective

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The main aim of this research is to longitudinally examine the shift in teaching students' professional beliefs about the teacher-pupil role during the course of their studies. The starting assumption has been that teachers' professional development is largely dependent upon their beliefs about various aspects of their professional role. The beliefs about the teacher-pupil role are the building blocks of teachers' professional identity, which strongly influence the way they teach and communicate with pupils. The participants in the research are 62 student teachers, from three teacher education faculties, who were prepared to teach in the lower grades of primary school. The research was carried out in two waves, at the beginning and at the end of the five-year study programme. The beliefs were explored using a metaphor technique derived from the cognitive theory of metaphor. The results indicate that exposure to the study programme did not considerably affect the change in the belief orientations, meaning that pre-professional beliefs remained unchanged, especially in the perception of the pupil's role. That finding has been discussed in relation to the possible implications for the initial teacher education curriculum and its implementation.

Keywords: teachers' beliefs, teacher's role, metaphors, teacher education curricula

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Razvoj pogledov učiteljev kot temeljne komponente njihove poklicne identitete v začetnem izobraževanju učiteljev: longitudinalna perspektiva

Vlasta Vizek Vidović in Vlatka Domović

Glavni cilj longitudinalne raziskave je preučevanje spremembe v strokovnih pogledih študentov razrednega pouka glede vloge učitelj – učenec med njihovim študijem. Izhodiščna predpostavka je bila, da je poklicni razvoj učiteljev v veliki meri odvisen od njihovega dojemanja različnih vidikov njihove poklicne vloge. Pogledi na vlogo učitelj – učenec so gradniki poklicne identitete učiteljev, ki močno vplivajo na način poučevanja in komuniciranja z učenci. V raziskavi je sodelovalo 62 študentov razrednega pouka s treh pedagoških fakultet, ki so bili usposobljeni za poučevanje v nižjih razredih osnovne šole. Raziskava je potekala v dveh delih – na začetku in ob koncu petletnega študijskega programa. Njihove poglede smo preučili s tehniko metafore, ki izhaja iz kognitivne teorije metafore. Izsledki kažejo, da vpetost učiteljev v študijski program ni bistveno spremenila njihovih pogledov; ti so ostali nespremenjeni tudi po nastopu službe, zlasti za to, kar zadeva dojemanje učenčeve vloge. Ta ugotovitev je bila obravnavana z vidika mogočih posledic za pripravo učnega načrta za izobraževanje učiteljev in njegovo izvajanje.

Ključne besede: pogledi učiteljev, učiteljeva vloga, metafore, učni načrti za izobraževanje učiteljev

Introduction

Initial teacher education can be regarded as a starting period for the professional development and socialisation of teachers. The traditional perspective of initial teacher education emphasises the importance of the acquisition of specific domain (subject) knowledge and teaching skills but is less oriented toward building teachers' professional identity through development of teacher's professional values, beliefs, and attitudes (Beauchamp & Thomas, 2009; Feiman-Nemser, 2001; Rogers, 2011; Sutherland & Markauskaite, 2012).

Zeichner and Gore (1990) describe teachers' socialisation as a three-stage process. It starts with educational experiences prior to formal teacher education (anticipatory socialisation), followed by the period of initial teacher education and continuing throughout teaching service in schools. The initial teacher education is a stage of teacher socialisation in which students begin constructing their professional identity.

Professional identity is recognised as a complex and challenging concept, without a generally accepted definition but, at the same time, there is a general agreement on its significance and influence on teachers' professional behaviour (Beauchamp & Thomas, 2009; Izadinia, 2013; Thomas & Beauchamp, 2011). Rodgers and Scott (2008) summarised basic assumptions for the analysis of teachers' professional identity as follows:

- identity is dependent upon and formed within multiple contexts that bring social, cultural, political, and historical forces to bear upon that formation,
- identity is formed in relationship with others and involves emotions,
- identity is shifting, unstable, and multiple,
- identity involves the construction and reconstruction of meaning through stories over time.

For Kosnik and Beck (2009), teachers' professional identity means the way teachers perceive themselves professionally including their sense of their goals, responsibilities, style, effectiveness, level of satisfaction, and career trajectory. Some authors have defined professional identity as an image that teachers have of themselves (Singh & Richards, 2006) and some believe that teachers' professional identity is a conceptualisation of a certain type of person in a specific context (Gee, 2000). Korthagen assumes that 'professional identity often takes on the form of a Gestalt: an unconscious body of needs, images, feelings, values, role models, previous experiences and behavioural tendencies, which together create a sense of identity' (2004, p. 85). Beijaard and Meijer (2017)

define teachers' identity as one's image of oneself as a teacher, depending upon the interplay of personal and professional factors. In that sense, the authors claim that 'becoming a teacher results from the interaction between student teachers beliefs […] and educational context in which they find themselves including generally accepted theories of teaching and learning' (2017, p. 177).

Teachers' beliefs have an essential role in their identity formation, which later has a strong impact on their professional behaviour and actions. Beliefs can be understood as mental representations of reality that are often emotionally coloured and experienced as something true without the need for rigorous examination. Teachers' beliefs cover a wide range of concepts that serve as a tool for understanding and steering their professional activities and roles (Pajares, 1992; Zheng, 2009). As they are often rooted in early educational experiences of being a pupil, the affective component is relatively pronounced and can influence teachers' professional conduct irrespective of the knowledge and skills acquired during initial teacher education (Gürsoy, 2013; Raths, 2001).

Teachers' professional beliefs can be classified into four broader categories: educational beliefs, beliefs about teacher role, beliefs about learning and learners and beliefs about self-efficacy. Educational beliefs refer to implicit theories about the purpose of education. Beliefs about teachers' roles refer to teachers' competences and tasks. Beliefs about learning and pupils refer to the understanding of the learning process and the nature of pupils' capabilities and capacities for learning. Beliefs about self-efficacy refer to the perception of personal competence in a concrete professional context. In all belief categories, a distinction between constructivist, student-centred views, and traditional, teacher- and discipline-centred views of teaching and learning emerges as a common theme (e.g., Bandura, 1997; Brophy & Good, 1986; Domović, Vizek Vidović, & Bouillet, 2016; Dweck, 2000; Eccles & Wigfield, 2002; Zheng, 2009,).

The more recent research (Morrison, 2013; Pillen, Beijaard, & den Brok, 2013) in the field of professional identity formation reveals that its development can be hindered by the conflict between personal and professional beliefs. Morisson (2013) identified three trajectories in the identity formation of beginning teachers: emergent, distressed, and tenuous. The first refers to the beginning teachers who did not experience deep conflicts between their personal and professional beliefs. Those teachers showed confidence in their competences and optimism regarding their future teaching career. Such positive feelings were mainly due to adequate professional support. The distressed trajectory refers to teachers who experienced significant tensions between their professional and personal beliefs. Therefore, they felt insecure and had low self-confidence in what they did. Often, they felt isolated and lacking adequate professional

support. They were at the high risk of leaving the profession. The tenuous trajectory refers to teachers who oscillated between the emergent and distressed trajectory. In their research on professional tensions, Pillen et al. (2013) pointed out that most beginning teachers will have to cope with the tensions related to their professional identity. In their research, they identified 59 tensions, which were grouped into three broader categories: the changing role from student to teachers, the conflicts between desired and actual support given to students, and the conflicting conceptions of learning to teach. It has been observed that these tensions are often accompanied by feelings of helplessness, frustration, and anger. The tensions also can have positive growth effects on teacher identity development if they are successfully resolved. If a teacher does not possess adequate coping strategies to overcome these tensions, it may lead to professional crises (Alsup, 2006; Pillen, 2013).

The enhancement of teacher capacities for coping with those tensions mainly depends upon the availability of adequate support for understanding and resolving potential conflicts between personal and professional beliefs during the initial teacher and induction. In that respect, the teacher educators and school practice mentors should be able to address students' conflicting beliefs, emphasising the need for reconciliation between personal beliefs and professional expectations. Some of the most useful tools for addressing student beliefs appeared to be combinations of dialogs and narratives embodied in the teaching process, the creation of an atmosphere of openness and mutual trust between students and teachers, and the usage of a variety of dialogs (self-dialog, peer dialog, and supervisory dialog) (Leijen et al., 2014, in Beijaard & Meijer, 2017). Yet another approach at the individual level is necessary for building the competence for self-reflection. The concept of reflection is often inherent in teacher education study programmes. However, closer inspection of the nature of reflection in practice shows that it is more directed to a solution of practical problems than to the underlying beliefs and self-images that strongly influence teachers' behaviour. Those insights led Korthagen and Vasalos (2005) to the development of the model of structured reflections, which enables a person to realise what happens in the deeper layers of personal and professional self (mission, identity, beliefs), which affect motivation and actions in teaching. In that respect, the authors see such 'core reflection' as a primary tool for the enhancement of professional growth (Korthagen & Vasalos, 2005; Korthagen & Verkuyl, 2002).

Samuel and Stephens (2000) state that during initial teacher education the prospective teachers' identity is influenced by three rival spheres of influence: the personal sphere, which encompasses students' previous educational

and social experience; the institutional sphere, which encompasses the influence of institutional factors, such as curricula, teaching methods, teaching staff and school-based practice; and the contextual sphere, which refers to the factors of the wider educational and social environment.

The development of teachers' professional identity during their initial education should be especially addressed in the teaching and learning process. Intuitive beliefs and stereotypes about teachers' roles, which prospective teachers bring to the initial professional education, should be raised to the level of student awareness, increasing the opportunity for their change in line with the professional approaches to teaching and learning. If this is not done, these intuitive beliefs will continue to act as strong perceptual, cognitive filters affecting the impact of educational context and professional behaviour (Domović, 2011; Domović & Vizek Vidović, 2013; Feiman-Nemser, 2001). In respect to that, as the key task of initial teacher education, some authors identify the development of the awareness of the complexity of the role of the teacher and the gradual transformation of intuitive beliefs about learning and teaching into professional beliefs based in educational sciences/concepts (Lamote & Engles, 2010; Lopes & Pereira, 2012; Tryggvason, 2012).

Feiman-Nemser (2008) describes the complexity of teachers' roles by assuming that there are four fundamental aspects of teachers' learning: learning to think, feel, know, and act as teachers. The first two aspects, 'learning to think as teachers' and 'learning to feel as teachers', relate to the development of pedagogical thinking and the development of intellectual and emotional aspects of professional identity, including beliefs, attitudes and expectations. The other two, 'learning to know as teachers' and 'learning to act as teachers', comprise cognitive requirements and behavioural aspects of teacher practices.

This study aimed to verify whether exposure to a five-year study programme brought about shifts in professional beliefs by comparing students' beliefs about teachers' and learners' roles at the beginning and at the end of their initial teacher education. Institutions of initial teacher education are assumed to have an important role in the construction, as well as in the reconstruction of the future teachers' professional identity. Teachers' perceptions of their professional role and competencies affect their self-efficacy as well as their willingness to cope with professional challenges and ability to implement innovations in their teaching practice (Beijaard, Verloop, & Vermunt, 2000). The hypothesis is that during initial teacher education the shift should occur from students' pre-professional beliefs of teachers' and pupils' roles developed at earlier educational stages toward the understanding of teaching and learning based on educational sciences (Feiman-Nemser, 2008).

Research context: Initial teacher education in Croatia

In Croatia, all categories of school teachers are educated at the university level, but depending on the educational level at which they teach and their profile, they are enrolled in different types of study programmes at different university institutions. These categories are teachers who teach in Grades 1 to 4 of elementary school (class-teachers), subject teachers in Grades 5 to 8 of elementary school, subject teachers in secondary academic schools (*gimnazija*), teachers of general education subjects in secondary vocational schools, and teachers of vocational subjects in secondary vocational schools. In this paper, the focus is exclusively on student teachers preparing for class teaching (Grades 1 to 4 of elementary school).

Major changes in the initial education of class-teachers occurred with the implementation of the Bologna process in higher education. Since the 2005/6 academic year, class-teachers are educated at teacher education faculties through five-year integrated study programmes leading to a master's degree in education (300 ECTS credits). The underlying rationale for adopting the integrated model instead of a two-cycle model supported by the Bologna principles has been the complexity of the teacher's role in the first four grades of schooling, in which one teacher teaches all subjects to the same cohort of pupils over four years. After graduation, class-teachers are qualified to teach six subjects in the lower grades of elementary schools: native language, science and society, mathematics, visual arts, music arts, and physical education (Domović & Vizek Vidović, 2011). To develop their teaching competences, the study programme for prospective class-teachers includes courses devoted to subject knowledge, educational sciences, teaching methodology courses, and school-based practice. Although there are some variations of curricula across teacher education faculties, approximately 40% of study time is devoted to subject knowledge, 15% to educational sciences, 35% to teaching methodology courses and 10% to school-based practice. In general, the focus of the first three years of study is on the subject knowledge and educational sciences, while the last two years are mainly devoted to subject teaching methodologies and school practice (Domović, Vizek Vidović, & Bouillet, 2016). The inspection of the study programme documents reveals that they are conceptually rooted in the constructivist approach to teaching and learning. It is supposed that the teacher educators would adhere to implementing the constructivist perspective across curriculum courses. Therefore, it might be expected that if such a perspective is consistently applied at all levels of the study programme, the graduate students will demonstrate professional beliefs that emphasise the constructivist conception of the teacher as a facilitator of pupils' meaningful learning.

Research questions

The research questions were formulated as follows:

- What are the students' intuitive beliefs about teachers' and pupils' roles upon the entrance to professional education?
- Is there any shift in students' beliefs about teachers' and pupils' role from the beginning and to the end of their initial teacher education?

Method

Participants

Participants were students from three Croatian teacher education faculties who were preparing to be classroom teachers of Grades 1 to 4 in elementary school. They were invited to participate in the research twice: in study year 2011/2012 in the first year of their studies (N=150) and again in 2015/2016 in the fifth year, at the end of their study programme (N=62). All participants were female.

Research Design

The research was based on a prospective longitudinal design (Cohen, Manion, & Morrison, 2005; Menard, 1991). In this case, the longitudinal study was carried out over an extended period. Data were collected in two waves with the five-year interval. The cohort consisted of individuals from three teacher education faculties who were invited to participate twice: at the beginning and at the end of their study programme. The first data collection occurred at the beginning of the first semester with 150 participating students. In the last semester of the study programme, all students enrolled in the fifth year were invited to participate in the second wave, but only 100 of them responded. Among those 100, only 62 individuals were eligible for the analyses as they participated on both occasions.

As the study was conducted anonymously, the same individuals were identified by using the same code each time. The code, which consisted of their mother's initials and birth date, was such that they could easily remember it after a five-year period. In that way, their responses could be easily paired for comparison. At both times of data collection, the same answer sheets were administrated by researchers during regular classes. The completion of the answer sheets took about 20 minutes. As mentioned above, after comparing students' codes, 62 students who participated in the first and the second part of the study could be identified, and their responses were analysed.

Instrument

Although the importance of teaching students' beliefs about teachers' and pupils' roles is often emphasised, both quantitative and qualitative measures are relatively scarce (e.g., Woolley, Woan-Jue, & Williams Woolley, 2004). The present study is a part of a larger research project on teacher professional development. For the purpose of the project, a comprehensive inventory was constructed using both quantitative and qualitative measures of teaching students' characteristics. Quantitative measures were used for the investigation of several motivational and personality variables (e.g., self-efficacy, motivation to teach, personality characteristics linked to the Big-5 model) related to teaching students' early professional socialisation, while student teachers' beliefs were assessed only qualitatively using a metaphor technique.

Regarding the development of teachers' professional identity, the metaphor technique is used as an analytical tool for the exploration of complex experiences and underlying beliefs. The logic of metaphor use is to start with familiar objects or events as a stimulus for the interpretation of concepts or situations, leading to new conceptual insights (Massengill, Barry, & Mahlios, 2008; Saban, 2010; Zhao, Coombs, & Zhou, 2010).

The students were asked to complete two unfinished sentences by focusing on a single metaphorical image. The prompts were formulated as follows:

'*A teacher is like …….. because ……*'

'*A pupil is like …….. because ……..*'

Data analysis

The data analysis was based on a qualitative approach known as inductive thematic analysis (Braun & Clarke, 2006) derived from the cognitive theory of metaphor (Saban, Kocbeker, & Saban, 2007). Thematic analysis is a method for identifying, analysing, and reporting patterns within qualitative data. In the process of data analysis, the key phases and actions described by Braun and Clarke (2006) were followed:

- *familiarising oneself with data* - reading and rereading the data, noting down initial ideas
- *generating initial metaphor codes* - sorting features of the data systematically across the entire data set
- *searching for themes* - collating metaphor codes into potential categories and naming of categories
- *reviewing categories* - checking the fit of coded extracts to the categories
- *merging themes into theoretically derived categories*
- *quantitative data analysis.*

The first two steps of data analysis were done independently by three researchers. In the next step, themes or patterns were established based on common agreement between all researchers. After establishing the key patterns, the authors worked together on data processing and the interpretation of results.

Results

According to the aim of the study, the first step in data analysis was the identification of the main themes derived from the inspection of original metaphors about teachers' and pupils' roles. Following the abovementioned procedure, the researchers agreed upon seven themes of teachers' roles (Table 1) and four themes of pupils' roles (Table 2). In both cases, there were a few responses that could not be classified.

Table 1
Themes with examples of teachers' metaphors – the first and fifth study years

Theme	**Metaphor:** ***'A teacher is like ..... because .....'***
Parent	*1st year* – A teacher is like a parent, because he/she cares about pupils, teaches them, nurtures, and prepares them for the future.
	5th year – A teacher is like another parent, because he/she takes care of children when they are at school.
Source of knowledge/wisdom	*1st year* – A teacher is like a book, because he/she knows a lot.
	5th year – A teacher is like GOOGLE, because he/she must have answers to all pupils' questions.
Guide	*1st year* – A teacher is like wings, because he/she supports children to fly through life.
	5th year – A teacher is like the moon, because he/she shows the path in the dark.
Shaper	*1st year* – A teacher is like an artist, because he/she shapes the pupil.
	5th year – A teacher is like a model, because pupils try to imitate him/her.
Friend	*1st year* – A teacher is like a friend, because he/she is always helpful, comforting and reliable.
	5th year – A teacher is like a friend, because he/she is emphatic, helpful and listens to children.
Authority/power	*1st year* – A teacher is like a ruler, because he/she decides what will be learned.
	5th year – A teacher is like a manager, because he/she imposes knowledge and skills upon pupils.
Self-pity	*1st year* – A teacher is like an artist who is worried about producing a worthless piece of art.
	5th year – A teacher is like a squeezed orange, because everybody is taking something away from him/her.

Unspecified	*1st year* – A teacher is a person who teaches pupils because he/she has adequate education *5th year* – A teacher is a very important person for children, because he/she gives them the most important knowledge.

Table 2
Themes with examples of pupils' metaphors – the first and fifth study years

Theme	**Metaphor:** ***'A pupil is like ..... because .....'***
Object	*1st year* – A pupil is like a sponge, because he/she soaks up all knowledge and information. *5th year* – A pupil is like plasticine, because in good hands he/she can be transformed into a work of art.
Plant	*1st year* – A pupil is like a flower, because he/she grows slowly, is delicate, lovely and needs a lot of warmth. *5th year* – A pupil is like a bud, because he/she needs care and water to become a beautiful flower.
Child	*1st year* – A pupil is like a child, because the teacher is his/her other parent. *5th year* – A pupil is like a small lamb, because he/she is lost in the world and needs help and protection.
Explorer	*1st year* – A pupil is like a curious and restless creature, because he/she is occupied all the time and shows interest in many things. *5th year* – A pupil is like a small bee, because he/she is diligent, inquisitive and always ready for new activities and knowledge.
Unspecified	*1st year* – A pupil is a person who has the task of attending lessons, because it will help him/her to do homework. *5th year* – A pupil is a person attached to the teacher, because he/she spends a lot of time with him/her and sees a lot good in a teacher.

According to Brown and Clarke's (2006) approach to qualitative data analysis, the distinctive step following the steps 'search for themes' and 'review of categories' is 'merging themes into theoretically derived categories'. In this phase, the initial themes were further grouped into broader categories or orientations based on major theoretical concepts about teaching and learning (e.g., Martínez, Sauleda, & Huber, 2001). Four broader categories or orientations for teacher metaphors were recognised: *behaviourist orientation*, *facilitating orientation*, *protective orientation*, and *self-referencing orientation*.

The *behaviourist* orientation is based on the conventional stimulus-reaction paradigm. In that perspective, the teacher is seen as an active agent (stimulus) who transmits knowledge to a passive learner, who takes in the content and stores it directly in long-term memory without additional processing (reaction). This orientation covers the following themes for teachers: 'knowledge/wisdom', 'authority/power', and 'shaper'.

According to the *facilitating* orientation, a learner is an active agent in the construction of concepts and meanings, while a teacher acts primarily as a facilitator of learning. This orientation refers to the cognitive constructivist approach to teaching and learning, and it covers only one theme: 'guide'.

The *protective* orientation is more related to the favourable conditions of learning than to the learning process itself. In this role, the ethics of care are emphasised, and a teacher is primarily responsible for creating an emotionally warm and safe learning environment. This orientation stems from the pre-professional concept of the teacher as an extended family member, and it covers the themes of 'parent' and 'friend'.

Recently, the fourth orientation has emerged as a distinct category in teacher metaphors which was previously usually labelled as a 'miscellaneous' one. Some authors recognised that the common denominator for those metaphors was the *self-referencing* perspective (Leavy, *McSorley,* & *Bote*, 2007) mainly reflecting students' insecurity and doubts about their capacities for fulfilling their future teaching roles. The rest of the unspecified responses were arranged into the category 'other'.

Those four orientations were used as the basis for the comparison of teaching students' beliefs about the teachers' and pupils' role in the first and fifth (final) years of study. In Tables 3 and 4, changes in orientations could be observed. The ways that each orientation changed from the first to the final year of study could be detected by observing the rows in the tables. In contrast, the shifts in the prominence of each orientation in the fifth year can be seen in the columns.

Teaching students' metaphors for the teacher's role

In the students' metaphors for the teacher's role, all four orientations were identified as described above. The results of the comparison of the 1st year and 5th year students' responses are shown in Table 3.

Table 3
Teacher metaphors: The comparison of teaching students' orientations in the first and the final years of study

Orientation - 1st year	**Orientations - 5th year**				
PROTECTIVE (N)	Protective (N)	Behaviourist (N)	Facilitating (N)	Self-referencing (N)	Other (N)
37	16	4	8	4	5
BEHAVIOURIST (N)					
12	4	1	-	3	2
FACILITATING (N)					
3	1	0	2	-	-
SELF-REFERENCING (N)					
3	0	2	2	1	-
OTHER (N)					
7	1	2	-	1	3
Total (N = 62)	**22**	**9**	**12**	**9**	**10**

Table 3 shows that the most prominent orientation (more than half of the responses, 37 out of 62 cases) referring to the teacher's role in the first year is the *protective* one. Metaphors with a *behaviourist* orientation appear in almost one fifth of the responses (12 out of 62 cases). *Self-referencing* and *facilitating* are the least present, with only three answers in total. In the final year of study, the most prominent orientation remains the *protective one*, but less frequently than in the first year. The number of responses for the *behaviourist* orientation is slightly decreased (12 vs 9). The highest increase could be observed for the *facilitating* orientation (3 vs 12) and for the *self-referencing* orientation (3 vs 9). It should be noted that in the responses of both the first-year and the fifth-year students, the category 'other' appears (7 vs 10), which contains responses that were mainly simple textbook definitions of the teacher's role.

Teaching students' metaphors for pupils

The inspection of teaching students' metaphors for pupils produced three major orientations (*behaviourist*, *facilitating*, and *protective*), while a self-referencing orientation did not emerge. In the case of pupil metaphors, the *behaviourist* orientation covers various objects, such as: 'sponge', 'blank slate', 'empty box/glass', and 'white paper'. The *facilitating* orientation reflects the cognitive-constructive approach, in which the teacher acts as a facilitator of pupils' learning and as a creator of a stimulating learning environment (Domović,

Vizek Vidović, & Bouillet, 2016) while the pupil is perceived as a growing entity or explorer. The pupils' themes within this orientation are: 'growing plant' and 'explorer'. The *protective* orientation is related to the ethics of care covering the theme 'child' for the pupil metaphor.

Table 4
Pupil metaphors: The comparison of teaching students' orientations in the first and in the final years of study

Orientation - 1st year	**Orientations - 5th year**			
BEHAVIOURIST (N)	Behaviourist (N)	Facilitating (N)	Protective (N)	Other (N)
29	18	2	5	4
FACILITATING (N)				
10	3	2	0	5
PROTECTIVE (N)				
7	1	0	3	3
OTHER (N)				
16	10	2	1	3
Total (N = 62)	**32**	**6**	**9**	**15**

Table 4 shows that the most prominent orientation (almost half of the responses, 29 out of 62 cases) in the first year is the *behaviourist* one. The next orientation is *other* as unspecified (16 out of 62) followed by the *facilitating* orientation (10 out of 62). The least frequent responses are in the *protective* orientation (7 out of 62). In the final year of study, the most prominent orientation remains the *behaviourist* one, showing a slight increase (29 vs 32).

It should be noted that in the category *other* the number of such unspecified responses is quite high for both the first-year students (N=16) as well as for the fifth-year students (N=15). A significant decline can be observed in the fifth-year students (N=3).

Discussion and conclusion

Recent authors in the field of teachers' professional development presume that initial teacher education should not only be focused on content knowledge and pedagogical skills but should simultaneously put efforts into supporting the development of prospective teachers' professional identity.

The metaphor technique can be a useful tool for reaching the deeper

layers of students' selves or – as Korthagen (2004) labelled it – their core identities. Beijaard and Meijer (2017), who perceive beliefs as the building blocks of a teacher's professional identity, point out that it is important to identify discrepancies between students' lay beliefs and research-based teaching and learning concepts. Such tensions, if not properly addressed and successfully resolved during their studies, might provoke deep personal crises combined with professional insecurity and low self-confidence.

The main goal of the present study was to examine whether the educational experience during the initial teacher education influences teaching students' pre-professional beliefs about teachers' and pupils' roles and brings about a shift toward constructivist understandings of teaching and learning as a dominant professional perspective in current teacher education. As the professional identity formation involves the construction and reconstruction of meaning (beliefs) of educational and life-experiences over time (Rogers & Scott, 2008), the longitudinal research design was used in order to identify changes in beliefs about teachers' and pupils' roles over a five-year study period.

In the study, teaching students' implicit beliefs about teachers' and pupils' roles, expressed using metaphors, were analysed using conceptual tools based on theoretical frames of reference derived from the work of Martinez, Sauleda, and Huber (2001). The four main frames of reference for teacher metaphors were identified: *behaviourist*, *facilitating*, *protective*, and *self-referencing* orientation. In contrast, only three orientations were identified in the analysis of pupil metaphors: *behaviourist*, *facilitating*, and *protective* orientation.

It is evident that related to pupil metaphors the relatively high proportion of responses was classified as '*other*' indicating that teaching students have difficulties in producing metaphoric images of pupils, offering instead concrete definitions of pupils' tasks. It might be assumed that their more distinctive elaboration of teacher metaphors than pupil ones is affected by still-present teacher-educators/teacher-centred approaches to teaching and learning during studies without pupils in clear focus.

Examination of the metaphors for the teachers' roles reveals the somewhat different distribution of responses at two points of the study. Although, on both occasions, the *protective* orientation is the most dominant one, in the final year of study it somewhat decreases in favour of the *facilitating* orientation, while the *behaviourist* orientation remains relatively stable. It should be noted that contrary to some other findings (e.g., Richardson, 1996) in which students predominantly expressed the *behaviourist* orientation at the beginning of their studies, the prevalence of the *protective* orientation in this study indicates the pre-professional, naive understanding of the teacher's role as a

substitute parent. As the *behaviourist* and *protective* orientations are the most prominent at the beginning of the studies, these results correspond to the views of other researchers (Leavy, *McSorley,* & *Bote***,** 2007) who state that beginning student teachers do not spontaneously develop constructivist beliefs about teaching. It is encouraging that the *facilitating* orientation increased at the final year of study, although not to the degree that should be expected on the basis of the declared curriculum outcomes. The observed increase in the *self-referencing* orientation at the end of studies might indicate that some students with unresolved professional tensions become more uncertain and anxious about their future profession. That result certainly deserves closer investigation to obtain insight into how the academic experience affects those students and their perception of the teacher's role.

The comparison of metaphors for the pupil and teacher role reveals that there is little correspondence between them. While student teachers perceive teachers as dominantly *protective*, their perception of pupils is dominantly *behaviourist* at both points of investigation. As such, the perception of the pupils' role does not change considerably over time, it might be expected that the future teachers will mostly adhere to the traditional approach to teaching (*behaviourist orientation*), in which the teacher is an active transmitter of content, and the pupil is a passive recipient.

The slight shifts in the perception of the teachers' role could be observed, but not always in the desirable, constructivist direction. The more upsetting result is the static perception of the pupils' role. It seems that throughout their studies, teaching students remained rooted in their pre-professional beliefs, which were not affected by their academic experience. The inspection of the study programme document reveals that the main goal is the development of teaching competences defined as knowledge and skills. The teachers' professional beliefs and attitudes are not explicitly emphasised and are part of the hidden curriculum agenda. In the documents, the main perspective on teaching and learning is the constructivist approach as a basis for student-centred teaching. It is expected that the teacher educators would implement the constructivist perspective across curriculum courses. Therefore, it might be assumed that if such a perspective is consistently applied at all levels of the study programme, the graduated students would be able to acquire and demonstrate professional beliefs that emphasise the constructivist concept of teaching and learning.

To obtain deeper insight into the student teachers' professional identity development, further exploration in this area should include both students' and teachers' narratives about their academic experience, especially in regard to the tensions between the professional and personal issues as well as classroom

observations of teacher educators in action.

In conclusion, the results of this study might have some implications for teacher education curricula and especially for their implementation. Initial teacher educators should leave more space for reflective approaches toward academic experiences of student teachers in order to address directly intuitive beliefs about teaching and learning and transform them into intended professional attitudes and values (Domović, Vizek Vidović, & Bouillet, 2016). The teacher educators should be especially aware of the potential risk of the appearance of personal tensions in students when their pre-professional beliefs are being challenged. It also means that teacher educators themselves should be able to reflect on their own tacit beliefs about their teaching practices and to understand how that might affect their students.

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The Teacher as a Lesson Designer

Ljerka Jukić Matić[1]

Teachers' pedagogical design capacity is their ability to perceive and mobilise existing resources to create productive instructional episodes in the classroom. To a certain extent, this ability is dependent on the curricular resource used. As the textbook remains the most commonly used curricular resource in mathematics classrooms, the study reported in this paper investigates how and why one experienced mathematics teacher utilises the textbook. Data were gathered using lesson observations, as well as pre-lesson and post-lesson interviews. The teacher used offloading on the textbook, adapting the textbook content and improvising in the lessons to varying degrees, being aware of the affordances and constraints that the textbook has for her teaching practice. That approach to the textbook enabled the teacher to create various opportunities that enhance learning. The results of the study indicate that the mathematics teacher's awareness of what a particular resource offers for teaching practice, and what constraints could be encountered on this journey are significant in terms of the teacher's design capacity.

Keywords: mathematics teacher, pedagogical design capacity, curriculum resources, teaching/learning process, teaching/learning mathematics

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Učitelj kot oblikovalec učnih ur

Ljerka Jukić Matić

Pedagoška sposobnost učiteljev, da prepoznajo in uporabijo obstoječe vire z namenom oblikovanja produktivnih učnih enot, se odraža v njihovi splošni sposobnosti učinkovitega načrtovanja pouka. Ta je do določene mere odvisna od uporabljenega kurikularnega vira. Ker je učbenik pri pouku matematike še vedno najpogosteje uporabljen kurikularni vir, je namen opisane raziskave preučevanje načina in vzroka rabe učbenika izkušene učiteljice matematike. Podatki so bili pridobljeni z opazovanjem pouka ter intervjuji pred poukom in po njem. Učiteljica je uporabila posamezne lekcije iz učbenika, prilagodila njihovo vsebino in v različnem obsegu v razredu improvizirala učenje, pri čemer se je zavedala dostopnosti in omejitev učbenika v svoji pedagoški praksi. Tak pristop k učbeniku je učiteljici omogočil ustvarjanje raznovrstnih priložnosti za izboljšanje učenja. Izsledki raziskave kažejo, da zavedanje učiteljice matematike o številnih možnostih uporabe različnih virov in njihovih omejitev pri poučevanju pomembno vpliva na njeno sposobnost oblikovanja učnih ur.

Ključne besede: učitelj matematike, pedagoška sposobnost načrtovanja, kurikularni viri, proces poučevanja/učenja, poučevanje/učenje matematike

Introduction

For many decades, textbooks have been the main curriculum resources used in mathematics classrooms (Valverde et al., 2002) and this remains the case in most classrooms throughout the world (Fan, Zhu, & Miao, 2013). Many mathematics teachers use the official textbook when planning and implementing their mathematics programmes (e.g., Thomson & Fleming, 2004). Studies have found that many teachers prepare their lessons according to the textbook (e.g., Fan et al. 2013; Pepin & Haggarty, 2001; Pepin, Gueudet, & Trouche, 2013). Further, they showed that teachers relied on the textbook for teaching new content to a great extent, using the proposed pedagogy and the same language as given in the textbook and reproducing similar solved examples on the board (e.g., Pepin & Haggarty, 2001). The practice exercises, which constitute an essential part of students' activity, were also assigned from the textbook, as was homework (e.g., Johansson, 2006; Pepin & Haggarty, 2001).

Previously, curriculum developers and reformers relied on the idea that one can improve teaching only by using quality resources developed by experts, and the teachers would use those resources as intended by the developers (Clandinin & Connelly, 1992). They ignored the role of the teacher and his influence on the teaching practice, which gave the teacher only a mediatory role; teachers were seen merely as conduits or mediators of the curriculum to students (e.g., Love & Pimm, 1996). However, in recent years, there has been a shift in the perception of the teacher's position within the curriculum setting: from simply a mediator between the curriculum and students to a designer of curriculum instructions (Brown, 2009; Remillard, 2005). 'Teaching as design' means the teacher and curriculum resources participate in a dynamic and collaborative relationship, interacting with and influencing each other (Pepin, 2015). During lesson planning, teachers work with curricular resources: they interpret them and transform them as they design instruction. This interpretation and design of resources continue in lesson enactment (Pepin et al., 2013). Within this new perspective, in which the teacher is a designer of teaching, there are many unknowns including how textbooks can constrain or support teacher practice. This paper attempts to partly fill this gap, investigating how one lower-secondary mathematics teacher utilises the mathematics textbook as a curriculum resource to craft instruction.

Theoretical grounding

The textbooks and curricular resources teachers engage with while planning mathematics instruction can be viewed as artefacts (Shield & Dole, 2012), which are defined as outcomes of human activity, created with a precise aim of accomplishing a particular task (Rabardel, 2002; Wartofsky, 1979). As teachers use, shape, and form these artefacts to prepare for their teaching, they establish a particular relationship with the curricular resources. This relationship is a participatory one, in which both the characteristics of the teacher and the characteristics of the resources influence the outcomes in classroom practice (Brown, 2009; Remillard, 2005).

Brown (2009) calls a teacher's capacity to perceive and mobilise existing resources to create productive instructional episodes 'pedagogical design capacity' (PDC). Brown describes a teacher's PDC as a particular design skill that the teacher enacts to put various pieces into play. It characterises a process in which resources such as subject matter knowledge and pedagogical content knowledge are mobilised. Hence PDC is not just about the teacher's knowledge or goals, but about their ability to apply knowledge in new situations (Ball & Cohen, 1999). Perceiving can be regarded as a teacher's act of recognising and interpreting existing resources, evaluating limitations of the classroom setting, and balancing trade-offs (Brown & Edelson, 2003), while Remillard (2005) describes it as a teacher's ability to recognise and observe the potential of resources. In contrast, mobilising emphasises a teacher's enactment to devise strategies and act on or with the resources (Brown & Edelson, 2003). Perceiving and mobilising curricular resources occur both during the lesson planning and enactment.

In the context of mathematics education, Pepin (2015) refers to a mathematics teacher's PDC as a mathematics-didactical design capacity. Gueudet, Pepin, and Trouche (2013) point out that a teacher's pedagogical design capacity is dependent on the used resource to some extent, and on the ways of working with the resource, because each resource has different affordances and constraints. Choppin (2011) connects PDC with learned adaptations, which are knowledge-based adaptations designed with respect to what teachers have learned from prior enactments. In other words, a teacher designs lessons on the basis of his knowledge from prior experience of how curriculum resources can be used to achieve particular outcomes.

To describe how teachers perceive and mobilise resources to design lessons, Brown (2009) coined the terms *offloading*, *adapting*, and *improvising* for different types of curriculum usage. While planning a lesson, teachers often

adopt, adapt, modify, or omit curricular recommendations before they finalise the decisions on what they will teach and how they will perform this teaching (Brown, 2009). In this process, teachers' utilisation of resources happens at varying 'degrees of artefact appropriation' (Brown, 2009, p. 24). *Offloading* denotes relying mostly on the curriculum resources for the delivery of the lesson and giving agency to the materials for guiding instruction. *Adapting* indicates an equally-shared responsibility for the delivery of the lesson between teacher and curriculum resources; it occurs when teachers modify their materials to support instructional goals. *Improvising* occurs when teachers craft instruction spontaneously and without specific guidance from their materials, thus shifting agency to themselves. Here, the teacher relies mostly on external and their own resources for delivering the lesson. Therefore, from the perspective of textbook utilisation, teachers' development of PDC is an essential and critical part of their interactions with the textbook.

Framework for examining teacher's work with the textbook

Leshota (2015) proposed a framework for examining a teacher's work with a particular curriculum resource, i.e., textbook, and teacher's pedagogical design capacity (PDC). The framework examines the mobilisation of textbook content, the teacher's textbook utilisation, the teacher–textbook relationship and consequently delineates teacher's PDC.

The mobilisation of content is determined through the degree of appropriation and opportunities of mediation. The degree of appropriation shows how the teacher offloads, adapts or improvises in the lessons. Opportunities for mediation are examined through injections of mathematical content, omissions of mathematical content, and mathematical errors. Together, these indicators show the extent to which a teacher's mobilisation of the textbook content creates 'opportunities for mediation in the classroom, thus illuminating elements of teachers' PDC' (Leshota, 2015, p. 117).

Offloading, adapting and improvising are described in the previous section; injections and omissions will be elaborated on below. Leshota (ibid.) distinguishes between two types of injections: robust injections and distractive injections. Robust injections of mathematical content are those that enhance opportunities for learning mathematics. They point to the teacher's capacity to perceive what the textbook affords and also what the textbook constrains in the teaching practice. Distractive injections are injections of irrelevant mathematical content that detract from opportunities of learning. This relates to

injections of content that can diverge from the common objectives of teaching and learning the topic, and lead to the introduction of mathematical errors. These injections display a teacher's lack of PDC. There is a difference between improvisations of content brought from other sources to lessons and injections of mathematical content. The category of injection of mathematical content deals with the content that was, regardless, not required by the relevant grade level but which the teacher brought to his/her lessons.

Leshota (ibid.) characterised omissions of mathematical content as productive omissions and critical omissions. Productive omissions do not detract from the opportunities of learning. They relate to leaving out similar examples or practice exercises from the textbook when assigning classroom activity, and they are ineffectual in the teacher-textbook relationship. Critical omissions of content are critical for students' learning of mathematics. They display the teachers' lack of PDC.

Regarding textbook utilisation, Leshota (2015) used the terms 'deliberate textbook use' and 'tacit use'. She described deliberate use as intentional, purposeful, conscious utilisation, characterised by engaging in long and careful considerations. Tacit textbook use referred to a teacher's use of the textbook that is not deliberate, characterised by distractive injections, and critical omissions. However, I will identify textbook utilisation as either deliberate or non-deliberate. Deliberate use will denote the *teacher's intentional decision/action, based upon thoughtful considerations, and thus with explicit pedagogical rationale*. In this way, I wanted to avoid the possible indirect implication that deliberate use could imply that the teacher's interventions are necessarily pedagogically beneficial (e.g., injections are robust, and omissions are productive). The deliberate*, reflective approach far more often leads to* beneficial *outcomes, but these two dimensions are not necessarily* connected. A teacher can deliberately design something to enhance students' learning, but after the classroom experience conclude that it was not productive.

Lastly, by summarising previous evaluations, one can determine the teacher-textbook relationship. Leshota (ibid) used the terms 'intimate' and 'non-intimate relationship'. In essence, she described the intimate relationship as a participatory relationship. However, in this study, the terms the 'participatory' and 'non-participatory relationship' will be used as more appropriate to describe this relationship. The participatory relationship comprises reflective (deliberate) decisions on 'distribution of design responsibility,' i.e., the correct mixture of offloading, adapting, and improvising to enhance students' learning.

1 Research focus

The large-scale study reported by Glasnović Gracin (2011) investigated nearly one thousand Croatian mathematics teachers on the utilisation of mathematics textbooks in lower secondary education in Croatia (Grades 5 to 8). The teachers were examined using a questionnaire with a modified Likert scale with four degrees: never, seldom, often, and almost always. The results showed that teachers use textbooks to a great extent for various activities (lesson preparation, teaching a new topic, exercises and assigning homework) and that textbooks were used more than other curriculum resources. Approximately 52% of surveyed teachers claimed they almost always use the textbook for lesson preparation and an additional 45% do so often; 97% confirmed that they use the textbook as a source of mathematics exercises (51% almost always and 46% often); 99% of participants stated that they use textbooks for giving homework (74% almost always and a further 25% often). The results showed a strong reliance on the officially approved textbooks in Croatian mathematics education. As an extension of the large-scale quantitative study, Glasnović Gracin and Jukić Matić (2016) investigated the use of textbooks with 12 lower secondary mathematics teachers. This qualitative study involved on-site observations and interviews with the goal of determining whether teachers' self-reports on textbook utilisation differ from the actual situation in the classroom. The findings showed that the textbook played a central role in teachers' lesson preparation, as well as in the selection of solved examples and practice exercises for the students.

Glasnović Gracin (2011) also analysed Croatian mathematics textbooks. The results of the analysis point to the predominance of operation activities on the reproductive or simple-connections level with intra-mathematical content (i.e., symbolic exercises without context). The results showed that Croatian textbooks place more emphasis on algorithms and the view of mathematics as a tool rather than as a medium of communication. The analysis also showed that the requirements of the intended curriculum match the ones in the textbooks; thus, the Croatian mathematics textbook can be perceived as a ' conveyor of the curriculum' (Fan et al., 2013, p. 635).

Although previous studies on Croatian teachers, as well as other aforementioned international studies, have shown that teachers rely on the textbook to a great extent for lesson planning and lesson implementation, they neglected the design component. Therefore, the research questions in this study are: How does an experienced teacher design a lesson utilising the textbook, particularly:

1) How does the teacher appropriate/mobilise the textbook for/in teaching and why?

2) What can be inferred from the teacher's relationship with the textbook about the teacher's PDC?

Method

The participants and data collection

The study presented in this paper is a case study. The participant is a female mathematics teacher, Ms D, engaged in lower secondary education in Croatia (Grades 5 to 8) who was selected on the basis of personal acquaintance. Several in-service teachers, who mentor pre-service mathematics teachers, were approached to participate in the study, but they all declined, except for Ms D; therefore, the sample is purposeful (Patton, 2002). Ms D has two decades of teaching experience and, as an experienced and knowledgeable teacher, she represents a valuable participant for the study of textbook utilisation. She has been using the same textbook series for ten years. That mathematics textbook series is used by more than 65% of lower secondary students in Croatia (data retrieved from the Ministry of Education, Science, and Sport). The teacher was not acquainted with the objective of the research, thus preventing any significant changes in her teaching practice.

The data were collected in 2016 using on-site lesson observations and interviews to obtain an in-depth and extensive understanding of the researched issues. Lessons in Croatian schools last 45 minutes; therefore, the lessons were chunked into five-minute intervals. Each activity that took place in the classroom was recorded in the observational table and described in detail. Prior to each observation, the textbook content was examined, which helped in the initial coding during the observation: if the teacher offloaded, adapted, or improvised with the textbook content. The lessons were audio-recorded, which helped in catching the teacher's remarks and comments to students, and in the process of data analysis to connect the teacher's actions in the lesson with the pedagogical design capacity.

The teacher was interviewed before and after each lesson. Each pre-lesson interview focused on the specifics of the forthcoming lessons: to explain how she prepared for the lesson and to explain her lesson plan: what she used from the textbook and why; what she modified from the textbook and why; what she improvised using her personal resources and why; whether she omitted any content from the textbook or injected some mathematical content and why. Each pre-lesson interview lasted about 40 minutes. Additionally, the teacher participated in post-lesson interviews in which she was asked to

evaluate the lesson, to reflect on the lesson outcomes, and to explain if and why the enacted lesson deviated from the planned lesson. Each post-lesson interview lasted about 20 minutes.

One of the weaknesses of the case study is its focus on depth, and not allowing people to generalise findings. Instead of generalisability, Goetz and Le Compte (1984) use the notion of 'translatability', i.e., a clear description of one's theoretical stance and research techniques, and the notion of 'comparability', i.e., whether the results of the study can be used as a basis for comparison. In this kind of research, 'thick descriptions' are thus vital for others to be able to determine if the attributes compared are relevant (Kvale, 1996). Therefore, I provided a good amount of detail about the study.

Data analysis

To examine how the teacher mobilises the textbook and whether the teacher has pedagogical design capacity, this study used the analytical framework created by Leshota (2015), described in a previous section.

To establish whether the teacher offloaded, adapted, or improvised in the lesson, the data from the observation table were compared with the data obtained from the pre-lesson interviews, and then with the textbook content to verify the obtained conclusions. Then content omitted from the textbook was analysed as to whether it was productive or critical. Injections of content were also analysed, and compared with the curriculum programme. Although the teacher provided an explanation or rationale for the omissions and injections, and therefore proposed initial categorisation, I made the main categorisation of omissions and injections based on my background as a mathematician and mathematics educator. Further, I relied to some extent on the analysis of Croatian mathematics textbooks made by Glasnović Gracin (2011), described in the previous section. The results of the analysis of teacher's mobilisation of the textbook content can be seen in Figure 2.

The next step in the data analysis was reviewing the pre-lesson interviews and coding the teacher's explanations in the lesson planning. In the first phase, the data were read to detect the processes behind the teacher's decision to offload, adapt, or improvise. In the second phase, the codes analysing, evaluating, adopting, adapting, creating, and learning adaptations were assigned where appropriate. For instance, for the introduction of rational numbers, Ms D decided not to use the suggestion from the textbook, because she found the pedagogy behind it to be inadequate after analysing the content and evaluating it in terms of her students (Figure 1).

Their [in the textbook] pedagogy is completely wrong, for instance: they write $-\frac{8}{9} = 8 : (-9)$. But the opposite is more important to connect division of $8 : (-9)$ with the fraction $-\frac{8}{9}$. You have to be systematic here, asking them [students] right questions to connect what they know in each step, going from $8 : (-9)$ to $\frac{8}{-9}$ and than to $-\frac{8}{9}$. } analysing, evaluating

Figure 1. Example of data analysis.

The following step was establishing the textbook utilisation type, specifically whether it was deliberate or non-deliberate use. Lastly, by summarising previous evaluations, I determined whether the teacher-textbook relationship was a participatory or non-participatory relationship.

Results

Planning the lesson

To establish how the teacher appropriates the textbook's content, I will first report how the textbook was used for planning a lesson.

When Ms D planned each lesson, she consulted the curriculum programme to establish the goal of the lesson and its expected outcomes. The next phase of planning included deciding on the introduction of new content, solved examples, and exercises. The textbook served as the first and fundamental curriculum resource used in this second phase. The process of examining the textbook content for the introduction of new content, solved examples, and exercises was guided by the teacher's lesson goals and outcomes. Ms D analysed each activity in the textbook and evaluated it in terms of the desired outcomes for the students. If the activity aligned with the outcomes, she took it into consideration and placed it in her lesson plan outline. For the forthcoming lessons, Ms D did not use other curricular resources, but she added that she consults the teacher guide or other textbooks if she does not like the textbook content at all or has no other ideas for the lessons. Then she analyses, evaluates, and adjusts, if necessary, every selected activity.

At the end of planning, Ms D evaluated her overall lesson plan and discarded any activities that were too similar. During the lesson planning process, she consulted her notes from the previous year to see if she had made any remarks about the enacted lesson. She explained that this helps her in lesson planning. This indicated use of learned adaptations.

For the forthcoming lessons, Ms D discarded the textbook approach suggested for the introduction of new content, claiming that the pedagogy behind the introduction was inadequate or wrong. Instead, she decided to introduce

the new content on the basis of her previous experience with the topic or to adapt an activity from the teacher guide.

In the case of solved examples, Ms D adapted some from the textbook or created new ones based on what had been done in the previous phase, i.e., the introduction of new content. Ms D explained that she does not use the solved examples from the textbook as given because she does not see the point of solving what is already solved in the textbook. The exercises for the lessons came from the textbook. They were to be given as practice and as homework. Ms D analysed them and established that they were aligned with her goals.

In terms of lesson planning, Ms D not only plans her lessons on a daily basis but also has a monthly plan, so she can create lessons as a sequence. She explained that in this way she has a broader overview, so she is aware of the key points for each lesson, what needs to be 'done' in each lesson, and what she will use in the following lesson.

2 Enacting the lesson

Here I will compare the lessons observed in Ms D's classroom in terms of planning and enacting. The teacher planned and used offloading, adapting, and improvising in her lessons, but not to the same extent in every lesson. The teacher's mobilisation of the textbook, i.e., the degrees of appropriation and opportunities of mediation are shown in the lesson maps in Figure 2.

The lesson maps (Figure 2) show that the enacted lessons corresponded to Ms D's planned lessons, except for one occasion in which made an in-the-moment decision, deviating from her lesson plan. Students were unable to remember how to divide whole numbers where the dividend is smaller than the divisor, so she stopped the current activity to remind them how to do it, using structured questioning in one example, and giving them several tasks for practice. This knowledge of division was necessary for the current topic. After the lesson, Ms D explained that her in-the-moment decision was necessary because the students were not able to proceed further with the given activity:

> I had to insert that […] I could see that the students didn't know or didn't remember from last year, so we devoted part of the lesson to the revision. Of course, I didn't manage to do everything I had planned, but this was very important [...] Yes, I couldn't go further.

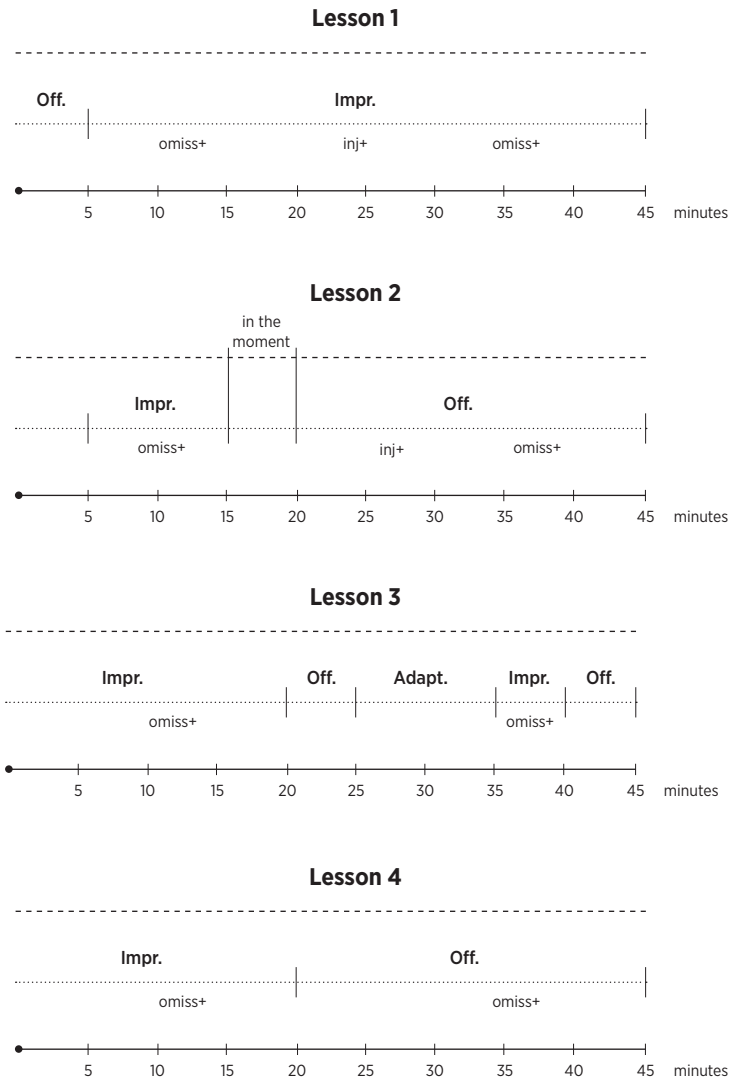

Figure 2. Lesson maps.

After each lesson, Ms D wrote comments for herself: what went well in the lesson, what she did not like in the lesson, and explained that she will consult these notes when she is preparing for the same lesson next year. This action shows the learned adaptations.

> After the lessons I get new ideas, what could be done differently, so I write these comments in my notebook.

Mobilisation of textbook content

Delineation of offloading

In the observed lessons, Ms D offloaded almost all exercises, for practice and homework, from the textbook. In the interview, Ms D said she does not always follow the order of the exercises in the textbook if that order does not support the goals she sets when planning the lesson. She also explained that she attempts to use the textbook for practising when the exercises are aligned with her goals:

> I do have to use the textbook sometimes [laughs] it's been bought and […] I try to use the best of it. […] In these lessons, the chosen textbook exercises have the purpose of reviewing and developing what was taught in the lesson.

All lessons I observed had the same title written on the blackboard as the lesson units in the textbook. Ms D explained that the title of the lesson in the textbook, definitions, and solved examples influence her lesson to some extent, and that she tries to keep them the same as in the textbook. According to Ms D, this helps students when they use the textbook for learning at home.

Delineation of adapting

In the lesson that dealt with the introduction of rational numbers, Ms D used a discovery learning activity to teach students the different types of rational numbers. The activity required students to determine whether every fraction could be written in the form of a decimal number. This activity was adapted from the textbook. The textbook gives an explanatory part on the classification of decimal numbers and then proceeds with the examples for each type of decimal number, i.e., exact and recurring numbers, respectively (Figure 3).

Iz predhodnih primjera možemo videti da se racionalni brojevi zapisuju u obliku razlomaka, ali i u decimalnom obliku, kao decimalni brojevi.
U decimalnom zapisu racionalni su brojevi **konačni decimalni brojevi** ili **beskonačni periodični decimalni brojevi**. U sledječem primeru pokazat čemo kako se neki racionalni brojevi zapisuju kao **konačni decimalni brojevi**.

Primjer 2.
Racionalne brojeve zapišimo u obliku konačnih decimalnih brojeva.

a) $\frac{3}{100}$ b) $\frac{1}{2}$ c) $-\frac{3}{4}$ d) $\frac{-27}{3000}$ e) $\frac{3}{25}$

Rj. To možemo učiniti na dva načina: proširavanjem ili skrsčivanjem do decimalnog razlomka ili dijeljenjem brojnika i nazivnika.

a) $\frac{3}{100}$ decimalni je razlomak pa je $\frac{3}{100} = 0.03$.

Translation
From the previous example we saw that rational numbers can be written in the fraction form, but also, in the form of decimal number. In the decimal form, rational numbers are either **exact decimal numbers** or **recurring decimal numbers**. In the following example, we will show how to write rational numbers as **exact decimal numbers**.

Example 2.
Write rational numbers in the form of exact decimal numbers.

a) $\frac{3}{100}$ b) $\frac{1}{2}$ c) $-\frac{3}{4}$ d) $\frac{-27}{3000}$ e) $\frac{3}{25}$

Solution. We can obtain this in two ways: by expanding or shortening until we obtain decimal fraction or by dividing numerator with denominator.

a) $\frac{3}{100}$ is decimal fraction so $\frac{3}{100} = 0.03$.

Primjer 3.
Racionalne brojeve zapišimo u obliku bezkonačnih periodičnih decimalnih brojeva.

a) $\frac{5}{3}$ b) $\frac{3}{13}$ c) $\frac{11}{6}$ d) $\frac{7}{15}$

Rj. Učinit čemo to dijeljenjem brojnika i nazivnika.

Translation
Example 3.
Write rational numbers in the form of recurring decimal numbers.

a) $\frac{5}{3}$ b) $\frac{3}{13}$ c) $\frac{11}{6}$ d) $\frac{7}{15}$

Solution. We can obtain this by dividing numerator with denominator.

Figure 3. Original textbook content (translation by author).

From the teacher's perspective, the original activity contained too many cases for students to examine and had a significant flaw: dealing with each type of decimal number separately. Moreover, the teacher wanted the students to discover all forms of the decimal number to which fractions can be converted. Therefore, she decided to adapt those two solved examples into a discovery learning activity. Ms D made three worksheets, each containing three positive fractions, and distributed them in the classroom: one with a denominator with the prime factors 2 and/or 5; one with a denominator without the prime factors

2 and 5; and the third with a denominator with a prime factor of 2 and/or 5 and another prime factor (Figure 4). She explained that students would meet two types of decimal numbers during the same activity.

Rational number	Decimal form of rational number	Factorization of denominator
$\frac{13}{50}$		
$\frac{2}{9}$		
$\frac{5}{6}$		

Figure 4. Example of adapting (translation by author).

Ms D set up pair work, followed by a class discussion about the types of decimal numbers discovered. Before the lesson, she explained why she modified the activity citing the students' abilities as the main reason:

> I want them to discover this [points to the examples] by themselves. They [students] are really slow when they have to divide numbers … and we only have 45 minutes [laugh]. So, three fractions are just enough.

After the lesson, Ms D concluded that she was correct not to use as many fractions as were given in the solved examples because her students experienced problems with division. She concluded that if she had used more fractions in the activity, there would not have been time for the whole class discussion, where they made a general conclusion, and the activity would not have been completed.

Delineation of improvising

In the lesson on the comparison of rational numbers, the teacher used a real rope that represented a number line and blue and red socks that had cards with various types of numbers. The blue socks represented wet socks, the red ones represented dry socks, and zero represented the point at which drying begins. The blue socks on the far left, with smaller numbers were wetter than the socks closer to zero. Similarly, the red socks placed on the far right were dryer than the socks on the right, closer to zero. Before the lesson, Ms D said that she wanted the students to get the feeling of 'what comparing numbers means' because she had observed in previous years that students do not fully understand what smaller or bigger means when 'rational numbers come into the picture.' The numbers Ms D used were a mixture of integers, decimal numbers, and fractions. The activity in the textbook

also uses a number line as a model for comparison, but the textbook example has only four fractions and not mix of numbers from various number sets.

Opportunities for mediation

As described earlier, Ms D adapted some solved examples, and she created some herself, which means that several solved examples from the textbook were omitted. A comparison of the omitted examples with those that Ms D created shows that the omitted examples do not contain knowledge critical for students' understanding. Ms D also omitted some exercises. The textbook contains many similar exercises with the same pedagogy behind them; thus, those omitted exercises can be seen as benign in terms of the students' knowledge. Therefore, the omitted exercises and worked examples can be considered to be productive omissions.

Ms D made several injections of mathematical content that is not prescribed by the curriculum or contained in the textbook for this grade level. She introduced standard mathematical notation for rational numbers in the form $\frac{a}{b}$ and mathematical notation for the set of rational numbers $Q = \{\frac{a}{b} : a \in Z, b \in N\}$. These notations are not required by curriculum standards; however, she brought them into the lesson explaining 'It will not hurt them [students] to know a little bit more'. Ms D explained that she injects content that is not in the textbook or curriculum when she thinks this content is important for the students:

> I study the curriculum programme for the upper grades and the lower grades to see connections with was learnt, and what will be learnt […] So I estimate how important something is for them [students]. … Given my experience also, I know what will be important in the next grade, and some things, which I consider important, are not in the textbook.

The teacher introduced both types of recurring decimal numbers, with pure and mixed periods, even though these types of decimal numbers are part of the Grade Eight curriculum in the topic of real numbers. However, in the interview, the teacher emphasised that this is a good place for the introduction of those rational numbers, because students are examining/discovering whether all fractions can be written in the form of decimal numbers and they tend to notice these differences. The introduction of new content could create opportunities to enhance students' learning; therefore, these injections can be regarded as robust injections of mathematical content.

Textbook utilisation and lesson design

From the findings in the previous sections, Ms D's lesson designing for the four observed lessons can be depicted in the following diagram (Figure 5):

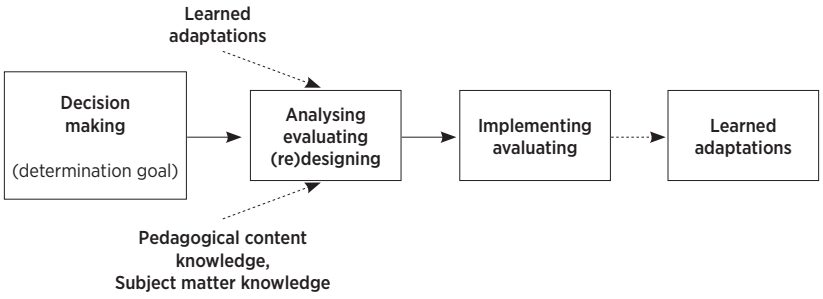

Figure 5. Ms D's lesson design process.

The diagram shows the trajectory or pathway of Ms D's lesson design process. All the obtained results show that the teacher engaged in long considerations of textbook content; therefore, her utilisation of the textbook can be characterised as deliberate. The relationship she has with the textbook is participatory, because both the teacher's characteristics and the textbook influenced the outcomes in the classroom.

Discussion and conclusion

To determine how the teacher appropriated the textbook content, this study used Brown's (2009) scale of offloading, adapting, and improvising. The scale describes the different contributions of instructional resources and distributions of design responsibility. Degrees of appropriation were identified using interviews and on-site observations, but it was the information obtained from the teacher before and after lesson enactment that explained why the textbook is used in such a way and helped in determining the teacher-textbook relationship. Together, those data provided evidence for the teacher's design capacity.

The teacher in this study used offloading, adapting the textbook content, and improvising to varying degrees in her teaching, being aware of the affordances and constraints which the textbook has for her teaching practice. When the teacher offloaded a lesson or part of a lesson, she did so because her goals were aligned with the textbook goals and because she recognised the pedagogical benefit of such offloading. Similarly, Brown and Edelson (2003)

showed that teachers in their study offloaded textbook content not because of their discomfort with the subject matter, but because of their ability to recognise the pedagogical benefit of relying on the materials to accomplish a particular goal. The teacher, Ms D, also adapted some content from the textbook, changing it to better suit her intentions. Related to this issue, Davis and Krajcik (2005, p. 9) point out that 'we should not expect a teacher to invent a new strategy for every new topic.' Therefore, offloading and adapting curriculum materials are justifiable means for achieving the desired teaching outcome. When improvising, Ms D occasionally posed problems that suited her lesson goals more than the problems or tasks given in the textbook. Moreover, she never used the solved examples from the textbooks. This result can relate to the recent study by Klinshtern, Koichu, and Berman (2015), who detected that around 50% of their surveyed teachers see themselves as problem posers. The main reason the teachers gave for posing their 'own' problems was that their problems were somehow different from those in the available resources; for instance, students have not encountered those type problems yet, and the teacher's problems fulfilled teaching needs. All these reasons were evident in Ms D's explanations.

The results of the study show that during lesson planning and lesson enacting, the teacher used the textbook in a deliberate way. Her utilisation of it was conscious, thoughtful, and purposeful. In that utilisation, she made no critical omissions or distractive injections. The interplay of improvising, adapting, and offloading throughout the lessons and the participatory relationship with the textbook shifts the teacher from a mediator of the curriculum to a designer of the teaching. The teacher's design capacity was evident from the robust injections of content that enhanced opportunities for learning, and productive omissions of the textbook content. Moreover, she maintained the focus on the mathematical point during instruction and perceived students' understanding of the mathematical points during the enactment, which constitutes additional evidence for establishing a teacher's pedagogical design capacity, according to Remillard (2016). The teacher in this study took care of students' understanding during the lesson. At one point, she made an in-the-moment decision deviating from her lesson plan in order to strengthen students' understanding. When this understanding was achieved, Ms D steered the lesson back to the planned mathematical pathway. However, she also considered the students' understanding before the lesson, foreseeing possible problems and adapting the activity to the students' abilities. Even though student learning outcomes and students' perspective of learning processes are significant measures of PDC, in this research design, I based the conclusions on different, but also relevant resources. All the above evidence indicates that the teacher was able to perceive and mobilise existing resources in a meaningful way.

One of the key aspects of a teacher's PDC in this study is being aware of affordances and constraints of the textbook, being able to mobilise it effectively and appropriately. The teacher detected these affordances and constraints through the processes she employs when she prepares for the lesson: analysing content/activities and evaluating them in terms of desired outcomes and students' abilities.

The finding of this study could be expressed in relation to the broader public. The mathematics teacher's awareness of what a resource offers for teaching practice and what constraints could be encountered on this journey are essential in terms of the teacher's design capacity. This awareness is the result of the interplay between pedagogical content knowledge, subject matter knowledge, learned adaptations, and the evaluation of implemented activity after lesson enactment, but also the result of the teacher's continuous professional development. The first influence the analysis, evaluation and (re)designing of activities during lesson planning, while the latter accumulate in the form of learned adaptation. Moreover, this awareness can influence the use of the textbook in a deliberate, conscious way and can help the teacher to establish a participatory relationship with the textbook. This, in turn, improves and upgrades the design capacity related to the resource. It would be interesting to replicate the research with a teacher that is less reflective, or not so effective.

If PDC is the ability 'to perceive and mobilise', the teacher must be able to estimate the outcome of an activity in relation to his students, to change it if necessary and use it for a specific purpose. Huizinga (2014) calls the knowledge to analyse, design, and evaluate a task and to overcome its challenges 'curriculum design expertise'. Therefore, an essential component of a teacher's PDC is selecting and analysing curriculum resources and evaluating the outcome of their use. However, this expertise cannot be realised without a good knowledge of the students, i.e., their development level, pre-existing knowledge, skills, intuitive beliefs and attitudes, and their state of mind. The teacher must be sensitive to the process of meaning construction of his students, their construction of knowledge, learning process, potential obstacles, and any signs of misunderstanding or struggling for understanding. Davis and Krajcik (2005) describe PDC as vital for a teacher's involvement in the practice of teaching. Having a high level of PDC enables a teacher to become an agent in curriculum design and enactment, instead of a person who simply implements a set of given curriculum materials.

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Biographical note

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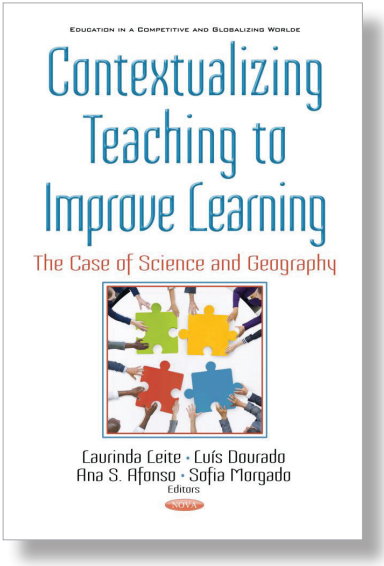
Laurinda Leite, Luis Dourado, Ana S. Afonso and Sofia Morgado (Eds.), *Contextualizing Teaching to Improve Learning: The Case of Science and Geography*, Nova Science Publishers: New York, NY, 2017; 303 pp.: ISBN: 978-1-53611-845-2

Reviewed by Miha Slapničar[1]



In recent years, there has been an increasing interest in contextualising teaching to improve learning (Leite, 2017). In the past two decades, several researchers have sought to prove that context-based learning approaches have had a strong influence on school science in several countries as a way to both stimulate students' interest and motivation and to provide more interconnected content knowledge (King, 2012). A useful definition applied in several approaches is that the context 'is the red thread along which the investigation of the issue in question develops' (Nentwig et al., 2007, p. 1441), and not a mere decoration at the beginning or in the end to illustrate something or motivate students. The context is the starting point from which the teaching proceeds and the foundational principle is that the learner will start from the context and then be aware of the content knowledge to understand the issue in question on a 'need-to-know'-principle (Bulte et al., 2006; adapted from Broman & Parchmann, 2014). Recent developments have heightened the need for contextualising teaching to improve learning because context-based problems combine science content with contexts to make the problem more authentic and relevant; they require complex thinking and higher levels of scientific literacy (Hofstein et al., 2011).

Contextualising Teaching to Improve Learning, The Case of Science and Geography includes contributions by authors from various backgrounds, theorists, and practitioners. This book is organised into three parts. In analysing

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the contextualisation of teaching, researchers explain the significance of the relevance of science and geography knowledge for citizenship (Part 1, five chapters), approaches to improving contextualised science and geography learning (Part 2, six chapters), and curriculum materials and context-based learning (Part 3, five chapters).

In Chapter 1, Linn, Tan, Lim, and Teng note the relevance of biological knowledge for citizenship from a Singaporean perspective. This paper examines the significance of the global community in the rise of scientific grounding in biology. The authors suggest that global citizenship education must take into account the context of biological knowledge, which includes the pressing issues of food security, nutrition, biodiversity decline, and climate change.

In Chapter 2, Parchmann, Blonder, and Broman review a key aspect of chemistry, which is related to every material, question, and topic. Chemical reactions take place in every living organism, in the environment, and in the industrial production of all the different products people use; however, at the same time, the term 'chemistry' still has a negative connotation for many laypersons. In this paper, authors attempt to defend the view that educational links between contexts and the multi-perspective facets of chemistry aim to develop a better foundation for citizenship and responsible research and innovation.

Orion, in Chapter 3, describes a review of the earth science contents. A primary concern of his thesis is that extensive evidence-based data prove beyond any doubt that schools can realise the high relevance potential of all aspects of earth science education. This paper seeks to explain the problem that encouraging findings are not echoed in educational systems throughout the world.

Chapter 4, entitled 'The relevance of geography for citizenship education' (author: David Lambert) gives an account of the relationship between three important ideas: (1) citizenship, (2) education and (3) geography. The chapter opens up many arguments and introduces a capabilities approach as a framework to understand the purpose of geography in education when conceived as powerful knowledge.

The aim of Chapter 5 is to provide a conceptual, theoretical framework based on arguments that physics permeates the life of human beings and that learning physics is a citizen's right. The author Moreira presents different topics (e.g., knowledge and competences, meaningful learning, problem-situations, concepts and conceptualisation, models and modelling, criticality and dialogicity, and critical, meaningful learning) that are necessary for physics teaching if it is to be geared to citizenship instead of being directed at success on testing.

Chapter 6 is the first chapter of the second part of this book. Its authors, Behrendt and Machtmes, argue that promoting experiences in outdoor

environments is an essential component in the school system, and plays a key role in enhancing interest and engaging learning. This paper reviews the research conducted on the brief history of experiential learning, informal and non-formal learning, interest, outdoor learning, and outdoor methodology. In the end, it is hoped that not only has learning occurred but that each learner has discovered an interest in some aspect of the experience.

Chapter 7, entitled 'Making the most of the news: approaches to using media-based learning contexts' (author: Billy McClune), focuses on news media and news reports that stimulate scientific and geographic ways of thinking. This study provided a significant opportunity to advance the understanding of the nature of media reporting of issues with scientific and geographical components. The findings should make a significant contribution to the field of the explorability of the characteristics of effective curricular planning and classroom practice and provide exemplars of good practice to illustrate opportunities for multidisciplinary approaches to using news media in the classroom.

Chapter 8 analyses the results of the German course ('Inquire for teacher students'), whose goal is to promote inquiry-based science education in the context of two major challenges of the 21st century: biodiversity loss and climate change. The findings of this research make several contributions to the current literature. First, context-specific subject knowledge to analyse the complex Helgoland lobster syndrome; second, systems thinking based on the syndrome approach; third, the teacher candidates' self-estimation in respect to their systems thinking abilities.

Leite, Dourado, Afonso, and Morgado, in Chapter 9, focus on context-based science education and, in particular, on four variations of problem-based learning that may promote such education: place-based learning, problem-based learning, project-based learning, and design-based learning. After each of these approaches is explained, their distinguishing features are highlighted, and they are related to different models of contextualisation.

Chapter 10 aims to provide those involved in science education with some ideas and guidelines, from a research or a training perspective, that have been developed through research on contextualisation and on Science-Technology-Society (STS) approaches in different parts of the world and the way they relate to each other. The most obvious finding to emerge from this research is that contextualised science teaching, through STS approaches, can improve the comprehension of the natural world and its potential for creating new goods.

The final chapter in the second part of the book (author: Mariana G. Hewson) talks about contextualising science teaching in southern Africa using indigenous knowledge. The author describes how to generate a teaching

approach (Tailored Teaching (TT)) that can serve to contextualise science learning. The TT approach, based on the theory of learning as conceptual change, is one possible approach to making a difference in bringing science to students with indigenous backgrounds.

As previously mentioned, Part 3 presents research efforts in the analysis of the content of the curriculum materials and context-based learning. In Chapter 12, as the first chapter in Part 3, the authors describe examples of tasks that were designed to make science relevant to pupils by offering them a challenging learning environment and showing what pupils have learnt by participating in the tasks. They were developed within the European projects PARSEL (Popularity and relevance of science education for scientific literacy) and SAILS (Strategies for assessment of inquiry learning in science) and were tested in the countries that participated in the projects.

One of the more significant findings to emerge from a study in Chapter 13 provides insights into the potential of geotechnologies for teaching and learning. The impact of current geotechnologies, geomedia, and geodata on everyday life was also shown. The purpose of the current study is to provide learners not only with competences to use geotechnologies, but to make sense of these options and to gain profit from their added value.

The study in chapter 14, entitled 'Case-based curricula materials for contextualised and interdisciplinary biology and geology learning' (authors: Clara Vasconcelos and Joana Faria), has found that geology is generally taught together with other sciences, with which it constitutes one only discipline. The development of interdisciplinary curricula was necessary to bridge the gap between the sciences involved in such disciplines. The most prominent finding to emerge from this study is the benefits of using geological materials to treat health problems.

The study presented in chapter 15 (author: Iztok Devetak) systematically reviews the data for context-based teaching material and learning chemistry, aiming to prove that context-based learning in chemistry should be one of the major concerns of policymakers in any given society. The central thesis of this paper is that there has been an attempt to develop context-based learning further and to apply it in the school environment with the aid of additional teaching and learning material. This study examines the significance of Context-Based Chemistry Material (CBCM) in the rise of teaching and learning chemistry.

The authors of chapter 16, Neslihan Ültay and Eser Ültay, report on an analysis of some critical points on evaluating context-based teaching materials given by two different studies. Ten critical points are argued via a sample

classroom practice of context-based teaching materials, which include the preparation of such materials, and finally evaluating them in the classroom.

In conclusion, we can say that contextualising teaching is an indispensable part of the educational process, not just in science and geography, as described in this book, but also in other school subjects. The current findings add to a growing body of literature on raising awareness for the contextualised teaching issue and shed some light on how teachers can use from students' complicated and interconnected real worlds to help them learn more and better authentic science and geography. The relevance of interdisciplinary teaching and learning science or geography is clearly supported by the current findings. Returning to the thesis posed at the beginning of this review, it is now possible to state that teaching science, geography, and other subjects to students that feel that they have many more interesting things to do and that do not have a *need to know* feeling towards those disciplines is not an easy task.

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