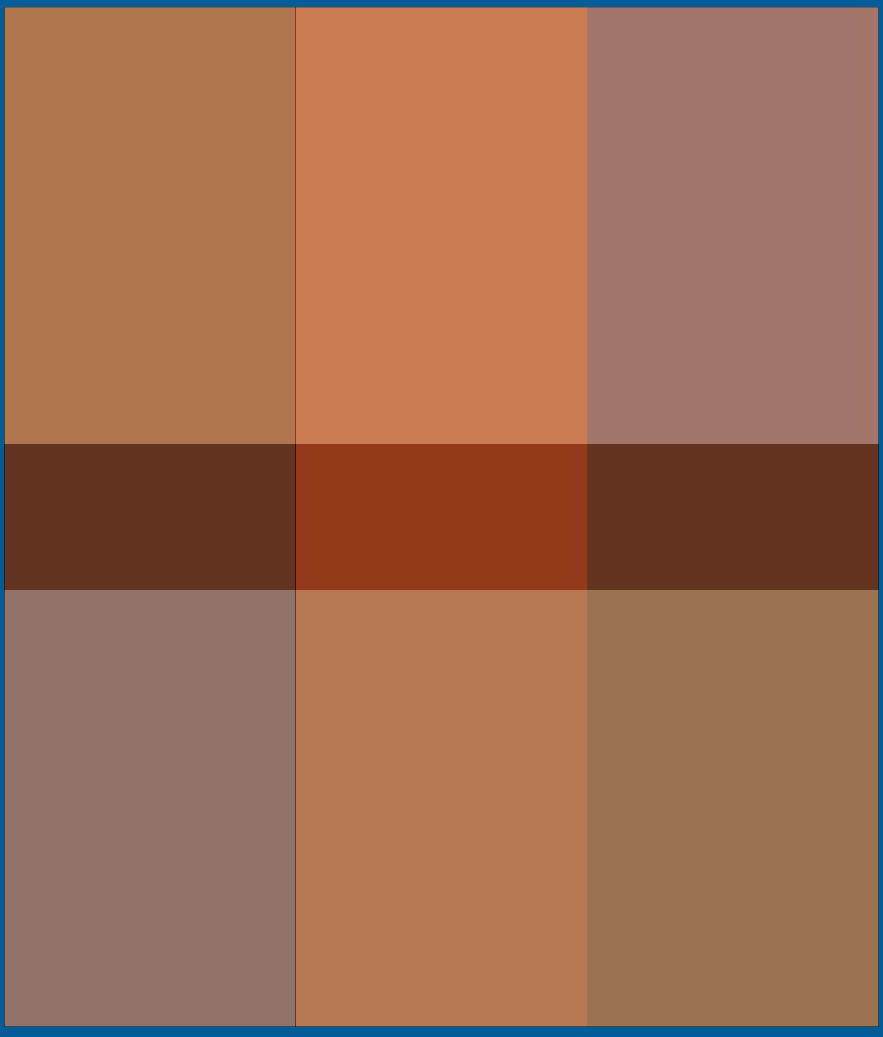
C·E·P·S Journal

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

Vol.7 | No3 | Year 2017



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

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

Aims & Scope

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

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

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

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

Cilji in namen

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

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

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

The publication of the CEPS Journal in 2017 and 2018 is co-financed by the Slovenian Research Agency within the framework of the Public Tender for the Co-Financing of the Publication of Domestic Scientific Periodicals.

Izdajanje revije v letih 2017 in 2018 sofinancira Javna agencija za raziskovalno dejavnost Republike Slovenije v okviru Javnega razpisa za sofinanciranje izdajanja domačih znanstvenih periodičnih publikacij.

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Research Insights and Challenges for Facilitating Critical Thinking

Critical thinking is currently considered to be a vital skill, since the individual is supposed to be able to critically evaluate situations, give arguments for his/her opinions and evaluate the arguments of other people, identify other people's manipulative behaviour, pose problem-based questions, and develop his/her mental capabilities. Critical thinking is significant, as it enables a person to make better quality personal decisions, increases the chance of success in achieving goals and solving problems, and enlarges autonomy and effectiveness of coping with different circumstances. Researchers emphasise that critical thinking is the precondition of maintaining social democracy. It helps the individual and the society in confronting social problems and solving them.

In the field of education we wonder to what extent it is possible to teach and learn critical thinking – in a direct or indirect way. Which means can the teacher use in order to facilitate critical thinking in his/her students? To what extent can problem-based instruction contribute to the development of critical thinking? Which competences does the teacher need in order to be able to facilitate critical thinking in his/her students, and what kind of teacher education will ensure at least basic knowledge needed for the enforcement of the concepts of critical thinking? Critical thinking is strongly connected to the teacher's reflection of (his/her own) practice, which is a prerequisite for quality teaching and teacher's professional development.

In the focus of this issue, there are six contributions by authors from Croatia, Serbia, Slovenia, and Finland. Four refer to the development of critical thinking in school contexts (either from the teachers' or the students' points of view) and two refer to the process of teacher education. Within the school context, we can facilitate critical thinking through teaching compulsory and optional subjects, extracurricular activities, and through other forms of school work (e.g. culture, science, technical and sports days; field trips; etc.).

It is critical that the teacher familiarises students with different skills of critical thinking and introduces suitable strategies into instruction wisely and intentionally. In their article, *What is Needed to Develop Critical Thinking in Schools*, Lidija Radulović and Milan Stančić discuss how education for critical thinking is conceptualised. Their paper presents an analysis of the predominant approach to education for critical thinking through implementation of special programmes and methods, and an attempt to establish different approaches to education for

critical thinking. The overview and analysis of understanding education for developing critical thinking as the implementation of special programmes reveal that it is perceived as a decontextualised activity, reduced to practicing individual intellectual skills. The authors introduce a new conceptual view of the development of critical thinking based on critical pedagogy and open curriculum theory, which emphasises the reconstruction of the status, role and power of students and teachers and the process of curriculum development.

Project work, especially if it is systematically and intentionally carried out through the phases of initiative, drafting, planning, implementation and evaluation, can contribute significantly to the development of critical thinking skills in students. To what extent the teacher implements project work and supports student critical activity in respective phases is also dependent on the teacher's conceptions of instruction, knowledge and his/her attitudes. In the paper *Project Activities and Encouraging Critical Thinking: Exploring Teachers' Attitudes*, authors Petra Pejić Papak, Lidija Vujičić and Željka Ivković present results of a study carried out on a sample of 220 elementary school teachers from Croatia. The objectives of the research were to determine the regularity of implementing project activities at the class level and at the level of the entire school, and to examine possible differences between teachers who estimated regular implementation of project activities in their schools and those who estimated irregular implementation of project activities in the application of contemporary work strategies, as well as in the attitudes on the contemporary paradigm of childhood and educational processes. The research results showed that teachers who reported regular implementation of project activities at the class level as well as at the school level, more frequently applied contemporary work strategies and techniques of critical thinking than their colleagues did.

Constructivist instruction that emphasises student's cognitive activity can significantly support the development of students' critical thinking. In the contribution *Critical Thinking as a Dimension of Constructivist Learning: Some of the Characteristics of Students of Lower Secondary Education in Croatia,* Tomislav Topolovčan and Milan Matijević present results of a study carried out on a sample 703 students of the final grade of lower secondary education in Croatia. The aim of this study was to examine the characteristics of the frequency of constructivist learning and its dimensions, including critical thinking, the differences in them with regard to certain demographic characteristics, and correlations with the frequency of use of certain new media in teaching students. The results show that students assessed a significantly higher incidence of critical thinking in relation to the dimensions of constructivist learning. In respect to every latent dimension of constructivist learning, (all) students with

a higher grade point average are inclined towards a higher assessment of the frequency of the personal relevance of learning, critical thinking and collaborative learning.

For teachers to be ready and qualified to carry out instruction and other activities that could contribute to the development of critical thinking in students, it is necessary that they have also experienced it themselves in the process of initial as well as further teacher education. The abilities of in-depth reflection and critical consideration are some of the most important factors of teacher's professional development (Valenčič Zuljan et al., 2011). There are two articles that deal with the facilitation of teacher reflection. Barbara Šteh and Marjeta Šarić are the authors of the paper *Critical Reflection in the Professional Development of Teachers: Challenges and Possibilities*. They present an overview of different perspectives on critical reflection in the context of teachers' professional development and then underscore some empirical research findings on the problems that teachers and teacher educators face when they put reflection into practice, especially at the deeper and more complex levels of reflection. The authors emphasise that obstacles can occur at the level of individual teachers' personal traits and at the level of the context in which reflection is done. Employing the analysis of the obstacles, the authors draw up some guidelines on how to support teachers in their attempts at making critical reflection part of their teaching practice.

Branko Bognar and Irena Krumes are the authors of the contribution *Encouraging Reflection and Critical Friendship in Pre-service Teacher Education*. To explore how to encourage students' reflection, they carried out a two-year research project impelling student teachers to become mutual critical friends. Inquiry was conducted on a sample of 27 students, within the course *Correlated-integrated systems in Croatian language teaching*. For critical friendship communication and other project activities they utilised Moodle (an online learning management system). On the basis of the analysed data, which were gathered at the end of each action research cycle, the authors prove that the students felt comfortable in the role of critical friends and that critical friends' reflections were particularly important to them. In classifying the levels of reflection, the authors refer to the established Van Mannen model (1977), which made a distinction between technical, practical, and critical levels of reflectivity. The research showed that the technical mode of reflective thinking prevails in the students' correspondence. The practical or contextual level could rarely be observed while critical reflection was often completely absent.

The final paper of the focus part of the issue is by Esa Virkkula and Säde-Pirkko Nissilä with the title *Towards Professionalism in Music: Self-assessed*

Learning Strategies of Conservatory Music Students. This study concerns music education and vocational music students' self-observed learning strategies. The research was carried out on a sample of 62 students. The aim of the research was formed into three research questions: (1) What kind of learning strategies were observed in the music students' descriptions of learning? (2) How consciously did the music students utilise learning strategies in the music workshops? (3) What were the music students' most essential learning experiences in the workshop work and performances according to their self-assessment? A significant observation comes from cross-professional collaboration. The professional musicians who participated in the project represented the same profession, but not the same instruments as the students. In that sense, the workshops offered cross-professional collaboration. This study emphasises the outcomes of changing relationships between educational experts and practitioners.

Varia covers two contributions: the authors Maša Đurišić and Mila Bunijevac write about *Parental Involvement as an Important Factor for Successful Education* while Mojca Kovač Šebart and Roman Kuhar discuss *The Pluralisation of Family Life: Implications for Preschool Education.* In the Reviews section, the book by *Jonathan Bergmann and Aaron Sams, Flipped Learning: Gateway to Student Engagement*, is reviewed by Romina Plešec Gasparič, and the book by *David Mitchell, Diversities in Education: Effective Ways to Reach All Learners*, is reviewed by Nika Šušterič.

Jana Kalin and Milena Valenčič Zuljan

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What is Needed to Develop Critical Thinking in Schools?

Lidija Radulović*[1] and Milan Stančić[2]

Starting with the fact that school education has failed to become education for critical thinking and that one of the reasons for that could be in how education for critical thinking is conceptualised, this paper presents: (1) an analysis of the predominant approach to education for critical thinking through the implementation of special programs and methods, and (2) an attempt to establish different approaches to education for critical thinking. The overview and analysis of understanding education for developing critical thinking as the implementation of special programs reveal that it is perceived as a decontextualised activity, reduced to practicing individual intellectual skills. Foundations for a different approach, which could be characterised as the 'education for critical competencies', are found in ideas of critical pedagogy and open curriculum theory. This approach differs from the predominant approach in terms of how the nature and purpose of critical thinking and education for critical thinking are understood. In the approach of education for critical competencies, it is not sufficient to introduce special programs and methods for the development of critical thinking to the existing educational system. This approach emphasises the need to question and reconstruct the status, role, and power of pupils and teachers in the teaching process, but also in the process of curriculum development.

Keywords: critical pedagogy, curriculum in context, education for critical thinking, programs for critical thinking

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Kaj je potrebno za razvoj kritičnega mišljenja v šoli?

Lidija Radulović in Milan Stančić

Izhajajoč iz dejstva, da je šola neuspešna pri izobraževanju za kritično mišljenje in da je eden izmed vzrokov za to lahko način konceptualizacije kritičnega mišljenja, ta prispevek predstavlja: 1) analizo prevladujočih pristopov izobraževanja za kritično mišljenje prek uvajanja posebnih programov in metod; 2) poskus vzpostavitve drugačnih pristopov k izobraževanju za kritično mišljenje. Pregled in analiza razumevanja izobraževanja za razvoj kritičnega mišljenja z uporabo posebnih programov kažeta, da to pojmujejo kot aktivnost zunaj konteksta, ki je zožena na vadenje individualnih intelektualnih spretnosti. Temelje za drugačen pristop, ki bi ga lahko opredelili kot »izobraževanje za kritične kompetence«, je mogoče najti v kritični pedagogiki in teoriji odprtega kurikuluma. Ta pristop se razlikuje od prevladujočega pristopa v tem, kako razumemo naravo in cilje kritičnega mišljenja ter izobraževanje za kritično mišljenje. V pristopu za izobraževanje za kritične kompetence ni dovolj, da uvajamo posebne programe in metode za razvoj kritičnega mišljenja v okviru obstoječega vzgojno-izobraževalnega sistema, ampak se poudarja potrebo po ponovnem premisleku in preoblikovanju statusa, vloge in moči učencev in učiteljev v vzgojno-izobraževalnem procesu pa tudi v procesu razvoja kurikuluma.

Ključne besede: kritična pedagogika, kurikulum v kontekstu, izobraževanje za kritično mišljenje, programi za razvoj kritičnega mišljenja

Introduction

The development of critical thinking through education is frequently discussed as a significant and necessary goal, but also a goal that is implied and unquestionable. However, there are numerous reasons to doubt that critical thinking in contemporary education systems is an indisputable and accepted value. In public discourse, schools are still criticised for not teaching pupils how to think, which is supported by professional and scientific debates on the test results of pupils in international assessment studies (e.g. PISA in Serbia, see: Pavlović Babić & Baucal, 2013). Results from these studies show that pupils do not do well in answering the questions that demand more than the mere reproduction of knowledge. Our own experience as university teachers tells us that critical thinking is not the strongest side of students who enter university. We can also be dissatisfied with how much we manage to contribute to the development of critical thinking of our students during their studies. They perform the worst when they are faced with tasks demanding critical review, integration of various types of knowledge, or solving a problem in a new context. As Martin (2005) puts it, even though ideas on the significance of development of critical thinking had a strong impact on discourses in education and education policy, and progressed into a movement for the development of higher-order thinking skills, they did not lead to a real and sufficient change of school education – they did not win the battle with education understood as factual teaching.

Starting from the view that one of the reasons for the existing state could be in how education for critical thinking is conceptualised, in this paper, our aims are to (1) understand the characteristics of the approach to education for critical thinking which predominates in the relevant literature and educational practice; and (2) reflect on the possibilities of establishing a different approach to education for critical thinking. Therefore, as the starting point, we will take the overview of education for critical thinking through the implementation of special programs, analysing how critical thinking and education for critical thinking are understood in such an approach as well as what we know about results of such programs. We will then, starting from interpretation and critical review of these findings, try to outline the foundations for different approaches to education for critical thinking by relying on ideas of critical pedagogy and contemporary curriculum theories.

Education for Critical Thinking through the Implementation of Special Programs and Methods

In the 1960s, cognitive skills development in pupils started being given a special place in education in the USA (finding the incentive and theoretical foundation in the works of Bruner, but also in the administration of that period), and then, with different dynamics, it started spreading to all countries of the contemporary world. The implementation of adequate procedures, methods, and techniques of teaching is seen as the means of achieving that goal. Since the appropriate education and training of teachers is perceived as the way leading to that, special programs and projects for training teachers to use strategies for developing higher-order thinking skills (critical thinking) in their teaching started developing during the last decades of the twentieth century. These programs were aimed at training teachers in using adequate pupils' activities in teaching: the adequate teaching methods and techniques, adequate order of these methods and techniques, possibly, through specific reflection activities leading pupils to metacognitive insights on their thinking and learning strategies.

In the literature analysing programs aimed at encouraging critical thinking and their effects, three main types of the aforementioned programs are specified: (1) programs aimed at directly teaching cognitive and other skills considered significant for critical thinking, isolated from specific teaching content (*explicit instruction* or *general programs*); (2) programs in which teaching critical thinking is tied to specific learning content (e*mbedded instruction*), while some of them set their development of critical thinking as an explicit goal (*infusion* programs), and others do not (*immersion* programs); (3) *mixed* programs, in which development of critical thinking is treated as independent track within a specific subject content course (Ennis, 1989, as cited in: Abrami et al., 2008; Marin & Halpern, 2011). Yet another type of interventions, which emphasise *individual teaching methods and techniques* as particularly good for the development of critical thinking in pupils, can be added. For instance, the ARDESOS program at the University of Salamanca (Spain),[3] lasting for around 60 hours, is based on problem-based learning approach and consists of direct teaching of thinking skills which are relevant for critical thinking, i.e. reasoning, problem solving, and decision making (Saiz & Rivas, 2011). This could be regarded as a general and explicit type of program, aimed at practicing different skills that are considered crucial for critical thinking; and the expectation of the

3 Programs of this type are particularly present in higher education. Halpern states that, especially in the USA and Canada, there is a growing trend among colleges to require all students to fulfill a special course in critical thinking as part of their education program-(Halpern, 1993).

program's author lies in the fact that such procedural knowledge can be used by pupils in different situations and contexts (*ibid.*).

As an example of an embedded program (of the infusion type) the international program Reading and Writing for Critical Thinking (RWCT), is noteworthy, since it is suggested that it can be used in all grades and subjects with existing curricula (Crawford, Saul, Mathews, & MaKinster, 2005). This program introduces research-based teaching/learning methods that are designed to help pupils think reflectively and take ownership for their learning, to understand the logic of arguments and debate confidently (*ibid.*).

In different publications and manuals, there are also endeavours for individual methods and techniques (which frequently are parts of the RWCT approach) to be accentuated as particularly appropriate for encouraging critical thinking in pupils in different subject areas or professional fields as well as at different levels of education (see Bonk & Smith, 1998; Brookfield, 2012; Duron, Limbach, & Waugh, 2006; Forneris & Peden-McAlpine, 2007; Kennison, 2006; Wilgis & McConnell, 2008). Some of the distinguished specific teaching methods and techniques include following: KWL (I Know, I Want to know, I Learned), minute papers, reflection logs and double-entry journals, debates, graphic organisers (especially concept maps and mind maps), etc.

In recent times, the significance and possibilities, which the integration of digital technologies (most of all the internet, mobile phones, and tablets) in teaching brings to learning and teaching critical thinking, are increasingly emphasised (see Burgess, 2009; Cavus & Uzunboylu, 2009; Greenlaw & DeLoach, 2003; Maurino, 2007; Saadé, Morin, & Thomas, 2012; Yang, Newby, & Bill, 2005; Yang & Wu, 2012).

What are the results of such an education? – The perspective of research on programs' effects

The research examining the effects of the programs or individual methods and techniques aimed at the development of critical thinking in pupils are numerous, and their analysis exceeds the frameworks and purpose of this paper. Here, we provide an overview of the most frequently cited meta-analyses of different studies, which have encompassed examining effects of the programs encouraging critical thinking in pupils. It is noteworthy that the analysed studies conceptualise and measure critical thinking in different ways; thus, the meta-analyses were aimed at determining and comparing the effect size of such programs for developing critical thinking, relying on data provided in original studies.

The meta-analysis of 20 (quasi-)experimental studies that examined an effect of the program of explicit instruction of critical thinking skills resulted

in an average effect size of 0.4, while programs that were intensive and continuously emphasised specific skills had an effect size of 0.5. (Bangert-Drowns & Bankert, 1990). The least effective programs were those focused on logic instruction and those that targeted performance on measures of intelligence, while more practical skill-oriented programs were found to be more effective (*ibid.*). More recently published was a methodologically rigorous meta-analysis of 117 (quasi-) experimental research studies with children older than six years of age, who were included in some form of intervention aimed at the development of critical thinking, lasting not less than three hours (Abrami et al., 2008). The analysis includes studies on the effects of the programs encouraging critical thinking, which were of different types (general, infusion, immersion and mixed). The analyses showed that mixed programs that combine specific contents of learning and teaching critical thinking are more effective compared to other types of programs. The least effective ones were immersion programs, in which critical thinking was treated as a by-product of teaching. The authors conclude that, regarding the programs' effectiveness, it is not that important if critical thinking is encouraged by being tied to some specific contents or not; it is much more important to emphasise teaching critical thinking as a goal and a part of a subject/course (Abrami et al., 2008). Learning skills significant for critical thinking and using them when encountered with specific problems proved to be the best strategy, while including pupils in critical-provocative activities in teaching without explicit instructions and indicating the significance of critical thinking represented the least effective strategy. Yet another significant finding of this meta-study shows that programs that included specialised training of teachers for organising teaching aimed at encouraging critical thinking in pupils were more effective. (Abrami et al., 2008).

Some of the authors of the previous study also took part in a similar study whose results were published in 2015. This meta-analysis encompassed 684 research studies, which reflects an increase of the research interest in issues of the development of critical thinking in teaching, especially in the previous dozen years (Abrami et al., 2015). In this case, no significant differences in effectiveness depending on the type of the program were determined (average effect size was 0.3) but it was determined that two types of methods were particularly appropriate for the development of critical thinking: providing environments for discussion (especially where the teacher poses questions, when there are both whole-class teacher-led discussions and teacher-led group discussions) and solving authentic life problems, especially through role plays (Abrami et al., 2015). Mentorship (which the authors described as implying one-on-one teacher-pupil coaching, peer-led dyads, internship, modelling) individually was not

shown to be a particularly good method, but it was determined that programs combining all three aforementioned methods achieve statistically significantly larger effects regarding the development of critical thinking in pupils in comparison to the programs with only one method or a combination of two *(ibid.)*

Other authors also have perceived that even though there are differences between results that different research studies achieve, a trend can be seen showing that pupils who had an opportunity to think systematically in teaching, using specific materials intended for that purpose and working with specially trained teachers, demonstrate improvement in those types of behaviour which demand thinking (Martin, 2005). The research also demonstrates the impact of programs for educating teachers to use strategies for critical thinking on teachers' behaviour in teaching and on their cognitive growth. Based on results of multiple research studies, Martin indicates that teachers who attended such programs not only use more open-ended questions and richer vocabulary but also solve problems in classroom more successfully, using strategies for problem-solving and logical thinking systematically; that is, they generally become better teachers (Martin, 2005).

In the end, what can be learned from examining the effects of the programs aimed at the development of critical thinking in pupils? Along with the insight that not all the programs and methods are equally appropriate for the development of critical thinking, we learn that certain common elements can be found in those programs which did prove effective, and they are: (1) connecting teaching/exercising critical thinking to specific content; (2) explicating learning goals and making the learning process visible to pupils – so that pupils think about what, how, and why they learn (Swartz, 2003); (3) combining several different methods and dynamic teaching; and (4) adequate education/training of teachers.

One more perspective on the scope of the approach to education for critical thinking through implementation of special programs and methods

In assessing the scope of this approach to education for critical thinking, apart from the research results themselves, critical views on it should be considered. Authors of previously demonstrated meta-analytical studies indicate numerous problems in attempts to 'measure' effects of the programs aimed at encouraging critical thinking. Above all, it is indicated that understanding what critical thinking is varies in different programs as well as in different instruments used for 'measuring' critical thinking abilities (Abrami et al., 2015; Bangert-Drowns & Bankert, 1990; Ten Dam & Volman, 2004; Halpern, 1993;

McMillan, 1987). Some of the programs are conceived so that they are aimed at learning individual cognitive skills (formal logics, arguing, predicting, etc.) or a set of these skills, or even the critical thinking itself is interpreted as an individual skill (typically as a problem-solving skill). What represents an additional problem is the fact that programs are often designed in relation to what instruments 'measure' or vice versa: the instruments are drafted to encompass what a program tends to develop in pupils (Abrami et al., 2015; Halpern, 1993). The situation is additionally complicated by the fact that conclusions on effects of the programs are derived from post-tests conducted immediately following an intervention, so the question is posed if the effects are the long-term ones and to what extent they are generic (Abrami et al., 2008; Abrami et al., 2015; Halpern, 1993; McMillan, 1987; Ten Dam & Volman, 2004). We can conclude that even though some research results indicate that programs for the development of critical thinking in the classroom contribute to the development of critical thinking skills in pupils, results of the research on the effects of these programs differ, and there are numerous problems of both theoretical and methodological nature relevant for assessment of the meaning of these research studies and their results.

Relying on socio-constructivist and sociocultural perspectives, to these limitations we would also add those which are of a wider theoretical nature and are concerning the fact which is (relatively) common in the way these programs understand critical thinking as well as regarding the purpose of education for critical thinking. What is common to such programs, explicitly or implicitly, is that: (1) they, above all, perceive critical thinking as a separate, individual cognitive ability/skill; (2) they perceive development of such abilities in pupils as one of the objectives of instruction; (3) they imply that pupils will develop these abilities through appropriate 'cognitive education' (a term used by Martin, 2005) meaning by practicing isolated activities in the classroom. Most of these programs, as Ten Dam and Volman state, are derived predominantly from a cognitivist perspective, which can be described as instrumental since it puts the development of rational, so called higher-order skills, as an unquestionable aim (Ten Dam & Volman, 2004). From this perspective, even the entire performance of teachers is perceived as a cognitive function: 'If we understand that successful teaching involves frequent (multiple times per day) decision making, carefully phrased verbal instructions and presentations, the ability to multitask, anticipation, organisation, categorisation, analysis, and synthesis, then we can easily see that teaching done well is clearly a higher-order cognitive function' (Martin, 2005, p. 216), so enormous importance is attached to the programs aimed at the development of critical thinking in teachers. By this fact alone, the

affective and ethical dimensions of any type of education including the education for critical thinking are neglected, and cognitive education are seen as a scientific way to critical thinking, independent from values and isolated from context. Therefore, what dominates is the rationalistic foundation of the epistemology of critical thinking (Ten Dam & Volman, 2004).

Accordingly, regarding the purpose of education for critical thinking – the question why it is necessary for pupils to develop this cognitive ability – the answer is different in different programs, or it is not in focus at all. However, the purpose can be rather different: it can range from enabling pupils to fit into the demands of the liberal market and contribute to preservation of the existing culture and existing social relationships, to enabling them to participate in the democratic society (the meaning of it varying in different societies and different periods) to education for changing the society. That is why, especially from the postmodern perspective and perspective of critical pedagogy, this type of education for critical thinking is objected to because it is instrumentalised and takes insufficient account of the social context (Ten Dam & Volman, 2004).

Based on the previous analysis, we find yet another kind of critique for the approach to education for critical thinking through the implementation of special programs and methods in an implicit underlying rationale that the development of critical thinking will come into effect when this type of education receives its own place in relevant documents (curriculum, achievement standards, professional standards for teachers) and when teachers have adequate education/training. The development of critical thinking is therefore exclusively associated with special teaching-of-thinking strategies, and it is perceived as possible within existing curriculums and the ways leading to them (i.e. within essentially unchanged educational and social systems). The consequence of this way of thinking lies in the fact that teachers (who possess insufficient knowledge and are not sufficiently dedicated) or their education (which has not taught them to use strategies for developing critical thinking) are to be blamed for the failure of education for critical thinking.

Education for Critical Thinking – Some Different Perspectives

Responses to criticism and limitations of the scope of education for critical thinking through special programs can be found in attempts to 'repair' some of the features of this approach or searched for in completely different perspectives, which enable a change in the way of approaching education for critical thinking. In the following text, we will try to find different perspective

by discussing the meaning of education for critical thinking within the critical approach to education and contemporary theories of curriculum. Even though these approaches share a common feature with the previously described approach to education for critical thinking (i.e. opposition to transmissive nature of education (Sibbett, 2016)), they differ in terms of how they conceptualise criticality, its purpose and a way of achieving it.

Education for critical thinking from the perspective of critical pedagogy

Thinkers of critical orientation are directed at the deconstruction of power relations in education and society as well as at building a more just education and more just social relations. From the perspective of critical pedagogy, critical thinking is a necessary competency so that oppressive power relations and social inequality could be recognised and overcome (McLaren, 1994). However, reducing education for a just society to the development of critical thinking as isolated and ideologically neutral rational reasoning is criticised (Burbules, 2016; Burbules & Berk, 1999), since the *nature of criticality* and its *purpose* are seen differently. From this perspective, criticality/critical thinking is not just a process of cognitive activities (comparison, analysis, synthesis, logical deduction, etc.) that can be performed outside specific contexts, interests of various actors of events, and values they accept. Therefore, Sibbett emphasises that emotions are intrinsic to criticality for critical pedagogues and many justice-oriented activists,: '[…] powerful emotions are an appropriate— indeed, a reasonable— response to inequality and injustice' (Sibbett, 2016, p. 3). Similar to that is a view of Burbules that emotionality presents a necessary dimension of 'political communication and political action' since 'political language, is spoken by people with feelings, hopes, and fears' (Burbules, 2016, p. 4). Thus, equating education for social justice with enabling young people to make decisions methodically, to make choices of values and behaviours they will acquire is also criticised, since such a standpoint implies that social problems derive from irrational, illogical decisions (i.e. the lack of critical thinking) and that they will be solved if higher-order cognitive abilities are developed in young people. In contrast to that, from the perspective of critical pedagogy, the development of criticality represents the development of critical awareness of unequal power distribution and covert inequalities in a specific context, and accepting the value of solidarity, ethics of care, participation, social activism with the aim of changing unjust social relations as well as developing dispositions for society to be criticised and changed from the perspective of advocating these values (Burbules, 2016; Sibbett, 2016; Ten Dam & Volman, 2004).

Before discussing the issue of *how to develop critical thinking,* it is necessary to emphasise that, from the perspective of critical pedagogy, it is a sociopolitical practice (McLaren, 1994), practical and social activity. This kind of activity Burbules refers to as *reasonableness* and determines it as 'the difficult, contingent social practice of pursuing the solutions to certain problems in a way that respects differences and critically acknowledges the forces of context and history, without giving in to them' (2016, p. 4). Neither from the perspective of the sociocultural theory can the teaching critical thinking be reduced to mere acquiring a skill; it is rather inherent (as any type of teaching/learning) social process of acquiring the competence to participate critically in social practices to which a person belongs, whereas this competence includes knowledge and skills and the willingness to use these (Ten Dam & Volman, 2004). The development of 'critical compentencies' comes into effect through participation in social practices meaningful to pupils, through the process of building the identity of a member of the community of learning/practice and, at the same time, through the process of building the community itself. As Burbules and Berk emphasise, 'the perspective of viewing criticality as a practice helps us to see that criticality is a way of being as well as a way of thinking, a relation to others as well as an intellectual capacity' (1999, p. 63). Critical competencies are developed not just through individual reasoning but, above all, through the exchange of ideas in order for reality to be perceived from different perspectives, to be revealed and, based on that, changed along with the others. From the perspective of critical pedagogy, it is not sufficient to reduce education for criticality to the process of searching for the truth through exchanges of different perspectives in the (existing) school context, since that context excludes in advance different perspectives and opinions of the different groups' members. Criticality demands recognising and hearing the groups that are made invisible within the hegemonic distribution of power in society and in schools, as well as hearing opinions of real people with authentic problems in an actual context (Burbules, 2016). It implies that criticality requires criticism of social relations in practice, criticism that includes both emotions and questioning values, and acting in the direction of the change, and not only rational critical thinking.

Open curriculum as an inspiration for reflecting on possibilities of education for critical thinking

Even though different curriculums are based on different conceptions of education, the perception of the curriculum as a concept is what they have in common: it is viewed as an assigned formal document, formed in advance, and originated outside the context of the specific educational reality. Its role is to

shape educational practice: it 'promises' that following the assigned parameters (goals, contents, methods, materials, etc.) leads to expected outcomes (Cornbleth, 1988). Therefore, the curriculum is viewed as closed and independent of context. Criticism of decontextualisation of curriculum is not new (Cornbleth, 1988); it is current today, and it can be relevant for perceiving the rationalist approach to education for critical thinking and for developing possible different approaches to this type of education. Cornbleth specified such perceiving of curriculum as technocratic, and she emphasised that, within it, curriculum is separated from context at two levels: conceptual (the process of developing curriculum as a document is separated from its use) and operational level (curriculum is treated as separate from the sociocultural context within which education is carried out).

Bearing in mind that the conceptualisation of the curriculum greatly reflects the way we think about education as well as what goals will be visible to pupils and teachers, it is also highly significant from the perspective of achieving goals referring to critical thinking and the process of its development. Proceeding from this fact, we can ask ourselves what the declarative emphasising of critical thinking as a goal means within the decontextualised approach to curriculum and whether it is possible to develop critical thinking through education that is managed 'top-down' and that is decontextualised: specifically, education in which teachers have just a technical role – the role of the curriculum executors, where pupils' role is to acquire the curriculum, while the curriculum itself is independent of pupils and their experiences, and it contains the knowledge that is not subject to reconsideration, and so on.

The approach to *curriculum in context* (Cornbleth, 1988) or *open curriculum/syllabus* (Matusov & Marjanovic-Shane, 2017), stands out as a different view of the curriculum.[4] Within this view, the curriculum is perceived as 'ongoing social activity shaped by various contextual influences' (Cornbleth, 1988, p. 89) (i.e. curriculum as praxis (Grundy, 1987)). Curriculum as a product (technocratic model) is perceived as just as one of the contextual elements taking part in shaping the curriculum in process (contextual model). The process of creating the curriculum 'in use' implies treating curriculum as a document in a critical way. It represents a social practice based on participation of different actors, multiperspectivity, and collaboration (Pavlović Breneselović, 2015; Radulović, 2016). Therefore, curriculum in the contextual approach does not refer to practice in a prescriptive way; it exists in practice and is inseparable from it (the change of practice implies the change of curriculum). Educational

4 One of the leading theoreticians of critical orientation describes this kind of curriculum as 'agreed school program' (Apple, 2012).

contents, methods, and work materials are developed and chosen so that they include personal knowledge and experiences of the actors, so that they are significant for those who learn, and so that they leave open the possibility of different ways of understanding the world and living in it, and they are open to criticism (Mac Naughton, 2003; Pavlović Breneselović, 2015; Radulović, 2016).

This way of perceiving curriculum and the manner of its development is relevant for our examination in multiple ways, some of which are consequences for formation of attitude to knowledge, and consequences for status, roles and expectations of actors in the educational process, above all of teachers and pupils. The way of understanding knowledge, greatly shaped by the curriculum development process, sends a message about meaning of knowledge and academic activities (Cornbleth, 1988, p. 90), that is, what those who learn should do. If it is implied that knowledge is part of a curriculum document, that is, if scientific knowledge specified by the curriculum is viewed as static and as an unquestionable, it will not send pupils a message about the meaningfulness of their critical questioning neither will it send a message about the significance of their experiences and their perspectives. However, if educational context sends a message on knowledge being a product of understanding experiences and exchanging meanings from various perspectives, thus being changeable, pupils will perceive them as complex, dynamic and problematic, that is, as a subject of constant critical questioning which they are also invited to participate in. The role of actors in educational process in creating the curriculum also sends a message about what is expected from them thus widening or narrowing the possibility of learning and development of critical thinking. If the pupils' role is to 'master' or 'acquire' a curriculum – then it sends a message that they are not expected to communicate their perspectives and to question critically. If a curriculum is assigned from outside of school even to teachers, it does not create a context where they will be able to implement and model critical thinking. Therefore, both perceiving knowledge and pupils' role in the process of creating a curriculum will influence the extent to which pupils will be encouraged to question critically, to create ideas, pose questions, and offer their own insights and observations. Such an essential implicit message of the curriculum cannot be substituted by isolated requests for 'critical thinking' in situations of the individual decontextualised tasks whose role is for pupils to (quasi-) discover knowledge already discovered by scientists long ago and stored in textbooks, and on top of that working, most frequently, on contents and topics that they did not choose and do not recognise as relevant.

What We Can Learn and Conclude?

Hereinafter we will attempt, based on the previous examination, to single out ideas which we believe deserve closer attention when education for critical thinking is discussed. Some of them derive directly from the previous analyses and represent their summary, while others present a product of interpretation of these analyses.

- We could characterise the predominant approach to education for critical thinking through the implementation of special programs and methods as cognitivist and rationalistic, individualistic, instrumentalist, and decontextualised.
- Different approaches to education for critical thinking in schools are possible and they differ from the predominant approach by how they understand the nature and purpose of critical thinking, the goal of education regarding the development of critical thinking, the ways for developing critical thinking, as well as the way of understanding the aspect of school life through which critical thinking develops (or which obstructs its development). While the predominant approach could be characterised as the 'approach to developing critical thinking skills', the approach we have attempted to affirm relying on ideas of critical pedagogy and open curriculum could be characterised as the 'approach of education for critical competencies'.
- In the approach of education for critical competencies it is not sufficient to change teaching methods and introduce special programs for the development of critical thinking to the existing system, as it requires questioning, deconstruction and reconstruction of status, role and power of pupils and teachers in the teaching process, but also in the process of curriculum development. Obstacles to the development of critical thinking through school education can derive not only from ignorance and the lack of dedication of teachers in schools, and from inadequate education of future teachers, but also from other features of the education system.
- The education and training of teachers should not only be aimed at enabling teachers to implement special programs, methods and techniques for the development of critical thinking in pupils, but also at enabling teachers to develop criticality and different perspectives on education, curriculum, pupils and distribution of power in education; they should also enable teachers to develop curriculum along with pupils.

We believe that questioning these findings and examining possibilities of their implementation in pedagogical practice can represent a challenge for both future research and changes in practice.

Aknowledgement

This paper is a product of work within the project "Models of Assessment and Strategies to Improve Education Quality in Serbia", (no. 179060; 2011-2017), undertaken by the Institute for Pedagogy and Adult Education of the Faculty of Philosophy (University of Belgrade, Serbia) with a financial support from the Ministry of Education, Science and Technological Development of the Republic of Serbia.

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Project Activities and Encouraging Critical Thinking: Exploring Teachers' Attitudes

Petra Pejić Papak*[1], Lidija Vujičić[2] and Željka Ivković[3]

The contemporary education process frequently emphasises the importance of teaching and learning by focusing teaching activities towards research and collaborative work, the encouragement of critical thinking, the creative and productive application of knowledge, an active approach to the teaching content, and solving specific problems in project activities. A survey was conducted on a sample of 220 elementary school teachers from three counties in Croatia (Primorje-Gorski Kotar, Lika-Senj, and Istria) regarding the frequency of implementing project activities that encourage critical thinking in pupils. The objectives of the research were to determine the regularity of implementing project activities at the class level and at the level of the entire school, and to examine possible differences between teachers who estimated regular implementation of project activities in their schools and those who estimated the levels of irregular implementation of project activities, in the application of contemporary work strategies, as well as in the attitudes on the contemporary paradigm of childhood and the education process. The research results showed that the majority of teachers estimated that project activities were carried out regularly at their school (66.5% on a class level and 65% on a school level). Teachers who reported the regular implementation of project activities at the class level and at the school level more frequently applied contemporary work strategies and techniques of critical thinking than their colleagues did. The research results also indicated that those teachers more frequently use established approaches to the educational process (teacher should explain, exhibit facts, and point out important conclusions) than their colleagues do. There were no statistically significant differences in contemporary attitudes between the two groups of teachers. Since the objective behind the implementation of project activities was to create the knowledge that, in the creative act, boundaries of the known or tried are transcended in the direction of new and expanded knowledge, importance should be given to the role of teachers in promoting the development of critical thinking and guiding pupils to explore and discover new knowledge.

Keywords: critical thinking, project teaching, teaching strategies, teacher

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Projektno učno delo in spodbujanje kritičnega mišljenja: raziskovanje stališč učiteljev

Petra Pejić Papak, Lidija Vujičić in Željka Ivković

V sodobnem vzgojno-izobraževalnem procesu je pogosto poudarjena pomembnost poučevanja in učenja, ki sta osredinjena na raziskovalno in skupinsko delo, spodbujanje kritičnega mišljenja, ustvarjalnost in uporabnost znanja, aktiven pristop do učne vsebine ter na reševanje specifičnih problemov s projektnim učnim delom. Raziskava je bila izvedena na vzorcu 220 osnovnošolskih učiteljev iz treh okrožij na Hrvaškem (Primorje – Gorski kotar, Lika – Senj in Istra) z namenom ugotavljanja pogostosti uporabe projektnega učnega dela, ki spodbuja kritično mišljenje učencev. Cilji raziskave so bili ugotoviti pogostost uporabe projektnega učnega dela na ravni razreda in ravni celotne šole ter preučiti mogoče razlike med učitelji, ki so ocenili, da redno izvajajo projektno delo na njihovi šoli, in tistimi, ki so ocenili, da projektno učno delo izvajajo samo občasno, in sicer z vidika uporabe sodobnih didaktičnih pristopov in z vidika učiteljevih stališč do vzgojno-izobraževalnega procesa. Raziskovalni rezultati so pokazali, da je večina učiteljev ocenila, da projektno učno delo na njihovi šoli redno izvaja (66,5 % na ravni razreda in 65 % na ravni šole). Učitelji, ki so poročali o redni uporabi projektnega učnega dela na ravni razreda in ravni šole, so pogosteje uvajali sodobne didaktične strategije in tehnike kritičnega mišljenja kot njihovi kolegi. Raziskovalni rezultati so pokazali tudi, da ti učitelji pogosteje uporabljajo uveljavljene pristope v učnem procesu (učitelj mora razložiti in predstaviti dejstva ter poudariti pomembne sklepe) kot njihovi kolegi. Med obema skupinama učiteljev se niso pokazale statistično pomembne razlike na ravni stališč. Glede na to, da je bil cilj uvajanja projektnega učnega dela pridobiti znanje, ki na ustvarjalen način presega meje znanega, je pomembno poudariti vlogo učiteljev pri spodbujanju razvoja kritičnega mišljenja in usmerjanju učencev k raziskovanju novega znanja.

Ključne besede: kritično mišljenje, projektno učno delo, didaktične strategije, učitelj

Introduction

The contemporary requirements of the educational process focus on the detection, development of autonomy, competence, innovation, ability of reflection, and the renewal of skills, as well as forming a better and more humane relationship between acquiring knowledge for life. In other words, the process of learning in contemporary educational work is discussed from a humanistic approach that places pupils in the center of the learning process and, through pupil-centred teaching, encourages and supports the development of pupils' abilities, thereby respecting their needs, desires, and the will for self-realisation. 'Learning that places the pupil in the center is valuable because the pupil develops responsibility, becomes more motivated and more involved in the decision making, and the results are increased and more pupils enjoy teaching' (Jensen, 2003, p. 93). We wish to emphasise that teaching activities oriented towards research and collaborative work, i.e. towards discovering knowledge and the productive application of knowledge provide access to learning and teaching during which the pupils create, discover, independently plan, take initiative, ask questions, and investigate. 'Linking knowledge with personal experiences and knowledge, experiences from everyday life with the knowledge of other subjects and areas is especially encouraged' (Bezinović et al. 2012, p. 40). Pupils are required to understand, to express their own viewpoints on certain phenomena, to think critically, to engage in a creative approach to solving problems, and not just to reproduce content.

Critical Thinking in Project Teaching

In the contemporary educational process, it is important to move the focus from the paradigm of teaching-learning towards a concept centred on active learning. Active learning is the kind of learning through which a high degree of autonomy and self-regulation are achieved, and in which various strategies and methods are applied (Peko & Varga, 2014). The term educational strategy includes 'a planned combination of methods and procedures to encourage the pupil's activity and enables his own learning process to achieve the aims of education' (Cindrić et al. 2010, p. 170). The strategy of learning through exploration is thereby given particular significance as part of collaborative work strategies because its application encourages the pupils to learn based on personal experiences. Since 'the goal of learning through exploration is to transcend the available material, the fact is that in learning through exploration the pupil in the creative act transcends the boundaries of the transferred, i.e. of the already known or tried in the direction of new and expanded knowledge' (Terhart, 2001, p. 157).

With regards to content and interest-cognitive activities, which the teacher organises as part of the teaching process, we divided the strategy of learning through exploration, which is characterised by experiential learning, into three methods according to Bognar and Matijevic (2002, p. 275): research, simulation, and project, which, in practical use are found in numerous procedures. The project method, also known as project work, project approach, and project-based learning, is one of the standard methods of teaching (Knoll, 2014). The term 'educational project' or 'teaching project' is used for projects that are realised at the school or for teaching whose objective is the achievement of learning goals (Matijević & Radovanović, 2011). Terminologically, it implies planned and designed teaching that aims to achieve essential knowledge and results based on researching a certain situation. The teaching project is a complex process that starts with a predetermined plan and is aimed at achieving the goals or objectives of learning and education, to solve specific problems.

Similarly, for Cindrić et al. (2010), a project is a complex task with a clearly set objective whose result is a specific action. Čulina-Obradović and Brajković (2009, p. 53) understand project activity as 'an open form of teaching considering that there is openness in decision-making within the flow, and the product or result develops successively from the teaching process', while Cindrić et al. (2010) define project teaching as an extensively planned and designed course that aims to reach cognition through research of a certain situation based on interactive learning. Project teaching means working together with pupils, teachers, professional associates, and other factors (Vuković, 2003) and is based on the pupils' independent work in the natural reality. Meyer (2002, p. 180) defines the term project as:

> a joint effort of teachers and pupils to connect life, learning, and work in such a way that a socially significant and with the interests of the participants related problem that is mutually processed and leads to results that is of use value to the participants. At the same time, it strives to achieve a balanced relation between mental and physical labor.

It can be concluded that project teaching is a highly complex task, which is based on an interesting content or a problem, that requires of the pupil to set the research, to investigate and resolve a previously set problem within a extended period of time, and to create a final product or result that is publicly presented in its final stage.

Based on the results of the pupils' research projects in teaching, Fabijanić (2014) emphasises that project teaching is applicable to regular classes, during field trips, extracurricular activities, in the processing of inter-disciplinary

content, and is indispensable in working with gifted pupils. Project work is suitable for the self-organisation of learning since it allows practical training activities and thus provides experience in team and/or group work. It is generally considered to be the way in which pupils can develop independence and responsibility, social and democratic ways of behavior (Knoll, 1997), as well as techniques of critical thinking.

John Dewey is considered to be the originator of critical thinking. He viewed it as reflective thinking and defined it as an active, diligent, and thorough review process of beliefs with the consideration of those items that support this belief. The teaching of the techniques of critical thinking is most effective and most natural when it occurs indirectly through teaching specific content in the educational process. Danielson (2013) presents a framework for formal classroom education that specifies teaching activities at various stages of the education process. She identifies four areas: planning and preparation, classroom environment, instruction, and professional responsibility. Within each area, she identifies specific activities.

Thinking critically does not mean thinking negatively. It is an impartial and objective process of evaluating the claims and opinions of others. That is why Bowel and Kemp (2010) point out that in critical thinking importance should be given to reflection and finding reasons by using the question word 'why', i.e. finding justification for the claim which is used as an argument. The best way to develop and master critical thinking among pupils is to incorporate it in the access to activities.

Concept mapping has been validated as an effective technique for facilitating critical thinking. The graphic display of a concept map is determined by the logical structure of the complex concept being illustrated (Harris & Zha, 2013). Critical thinking should be seen as an educational concept whose elements (such as critical listening, reading, and writing) are an important part of the positive development of education. The teacher's approach should also be considered since the teacher should:

> ensure the time and opportunity to practice critical thinking, (s)he should allow the pupils to contemplate and theorize, to accept a variety of ideas and opinions, to promote active involvement of pupils in the learning process, to provide the pupils with a risk-free environment with no possibility of ridicule, to express the belief in the ability of all pupils to make critical judgments, and (s)he should appreciate critical thinking. (Steele et al., 2001, p. 9)

This approach to learning through exploration of the topics that pupils

are interested in will result in a high level of motivation, the development of basic skills and knowledge, as well as specific skills and knowledge that go beyond the curriculum.

Methodology

The Aim of the Research

The aim of this research was to examine the attitudes of teachers regarding the application of techniques of critical thinking by implementing project activities at the class level and at the level of the entire school.

The Research Objectives

1. to identify the frequency of the implementation of project activities at the class level and the level of school with regards to the participants' county and the level of their education;
2. to examine possible differences between teachers who reported the regular implementation of project activities and those who reported the irregular implementation of project activities in their school, in the application of contemporary strategies, with an emphasis on the techniques of critical thinking, and in their attitudes on the contemporary paradigm of childhood and the educational process.

Data collection

The survey was conducted during May 2015 in Primorje-Gorski Kotar, Lika-Senj, and Istria counties. The participation in the research was anonymous and voluntary. The data were collected by attendance at three teacher training sessions (one session in each county) organised by the Croatian Education and Teacher Training Agency, at which teachers of various schools of the mentioned counties were present. The questionnaires were handed out to teachers at the beginning of the session, and they completed them in approximately 20 minutes. A total of 230 questionnaires were distributed, 220 of which were returned fully completed.

Participants

In total, 220 elementary school teachers were included in the sample. Most of the respondents were, as expected, female (95.5%). The youngest participant was 24 and the oldest 64 years old, and the average age was 40.53 years. The level of education of the majority of teachers in the sample was university graduate (67.6%), while the minority had a finished college education (32.4%).

At the level of the researched counties, data was collected from an almost equal number of teachers: 36.4% were from Primorje-Gorski Kotar County, 33.2% from Istria County, and 30.5% from Lika-Senj County.

Measures

Teachers' estimation of the regularity of the implementation of project activities in their school was measured with two items: 'The implementation of project activities at the class level is regular' and 'The implementation of project activities at the level of the entire school is regular', on a five-point scale (1='does not apply', 2='mostly does not apply', 3='neither applies nor does not apply', 4='mostly applies', and 5='fully applies').

The frequency of teacher's individual application of contemporary work strategies and techniques of critical thinking in their class was measured on a Likert-type scale accompanied by a five-point frequency scale (1='never', 2='rarely', 3='sometimes', 4='frequently', 5='always'). The instrument included seven items: 'application of group activities', 'organisation of individualised work', 'application of problem teaching', 'exploratory learning through research', 'exploratory learning through simulation', 'integrated theme days in the form of project teaching', and 'application of the technique of critical thinking'.

Teachers' attitudes to the contemporary paradigm of childhood and the educational process were measured on a Likert-type scale accompanied by a five-point assessment scale (1='fully disagree', 2='mostly disagree', 3='I do not agree or disagree', 4='mostly agree', 5='fully agree'). The instrument included six items: 'Pupils should be allowed to discover their own truths and theories (even if inaccurate) through active and direct research, but they should not be taught facts', 'A pupil learns best in those activities that have been planned and designed by the teacher', 'For successful learning of more demanding content (e.g. scientific phenomena) it is necessary that the teacher lead and direct activities, while the pupil can learn less demanding content on his own', 'The process in which the pupil seeks a solution is more important than the result itself", 'Pupils should be allowed to create, plan, and manage their activities instead of activities being precisely planned by the teacher', and 'For the pupil to actually learn something it is important that the teacher teach the content, demonstrate, explain, reveal facts, and highlight important conclusions'.

The socio-demographic indicators examined were gender (dichotomous variable), age (open question), educational level (two categories: college and university degree), and the county where the participants work (Primorje-Gorski Kotar (PGŽ), Istra (IS), and Lika-Senj (LS) counties).

Statistical Analysis

The data were processed with the statistical package IBM SPSS Version21. The t-test for independent samples was used to compare the results of those teachers who reported the regular implementation of project activities in their schools and those that reported irregular implementation of project activities given the application of different contemporary work strategies and attitudes regarding the contemporary paradigm of childhood, while the t-test for independent samples and ANOVA were used to determine the differences in socio-demographic indicators with respect to the said elements. The chi-square test was used to test the association between regularity in the implementation of project activities and socio-demographic indicators.

Results and Discussion

Regularity of the Implementation of Project Activities in Schools

Joint initiatives of teachers and pupils to connect completed, wholesome, and complex content, learning, and work in a way that an interesting problem is processed and leads to results that are useful to the participants and are presented to the wider community, opens the space for project activities.

Teachers' estimation of the regularity of the implementation of project activities in their schools was almost equal at the class level and at the level of the entire school, i.e. the teachers reported at both levels that more project activities were conducted regularly than irregularly. At the class level, 43.1% of teachers noted that the regularity of project activities mostly applied to their school and 23.4% of teachers observed that it fully applied to their school, while the least of them stated that this did not apply to their school (2.8%) or that it mostly did not apply to their school (11.0%), and 19.7% of teachers assessed that it neither applied nor did not apply to them. Similar results were obtained for the level of the entire school: 44.5% of teachers observed that the regularity of project activities applied to their school, while 20.5% of teachers noted that it fully applied to their school; the least of them stated that it did not apply (2.7%) or mostly did not apply to their school (6.4%) and 25.9% of teachers expressed the view that it neither applied nor did not apply to their school.

To facilitate comparisons of teachers who reported the regular and irregular implementation of activities at both levels, we transformed two five-point variables into two dichotomous variables, linking the first three degrees ('does not apply', 'mostly does not apply', and 'neither applies nor does not apply') into the category 'irregular project activity' and the other two degrees ('mostly applies' and 'fully applies') into the category 'regular project activities' (Table 1).

Table 1
Project activities at the class level and at the school level

The class level	f	%	The school level	f	%
Irregular project activities	73	33.5	Irregular project activities	77	35.0
Regular project activities	145	66.5	Regular project activities	143	65.0
Total	218	100.0	Total	220	100.0

At the class level, project activities were carried out regularly in 66.5% of cases, and irregularly in 33.5% of cases, while at the level of the entire school such activities were carried out regularly in 65.0% of cases, and irregularly in 35.0% of cases (Table 1). The conclusion is that there was almost no difference in the expressed regularity in the implementation of project activities at the class level and the entire school.

A Chi-square test (χ^{2*} = 6.429, df = 1, p = .01; Cramer's V = 171, p = .01) showed that, depending on the level of education, teachers with university education reported more regular implementation of projects at the school level (73.4%) than teachers with college education did (26.6%), while there was no statistically significant correlation in the regularity of implementation of project activities at the class level (Table 2).

Table 2
Implementation of project activities with respect to the teacher's education degree

The school level		Level of education		Total
		College degree	University degree	
Irregular project activities	f_t	33	43	76
	f_e	24.6	51.4	76.0
	%	43.4	56.6	100.0
Regular project activities	f_t	38	105	143
	f_e	46.4	96.6	143.0
	%	26.6	73.4	100.0
Total	f_t	71	148	219
	f_e	71.0	148.0	219.0
	%	32.4	67.6	100.0

Note. χ^2=6.429, df=1, p<.05. Cramer's V=.171, p<.05.

In view of the regularity of implementing project activities at the class level by county (Table 3), according to the results of the chi-square test (χ^2 =

15.492, df = 2, p = .001; Cramer's V = 267, p = .001), teachers from Primorje-Gorski Kotar County reported a more regular implementation of projects at the level of class teaching (44.8%) than teachers from Istria (28.3%) and Lika-Senj (26.9%) counties did.

Table 3
Implementation of project activities by county (at the class level and at level of the entire school)

		The class level		
		PGŽ	I	LS
Irregular project activities	f_t	13	32	28
	f_e	2.1	24.4	22.4
	%	17.8	43.8	38.4
Regular project activities	f_t	65	41	39
	f_e	51.9	48.6	44.6
	%	44.8	28.3	26.9
Total	f_t	78	73	67
	f_e	78.0	73.0	67.0
	%	35.8	33.5	30.7

		The school level		
		PGŽ	I	LS
Irregular project activities	f_t	13	38	26
	f_e	8.0	25.6	23.5
	%	16.9	49.4	33.8
Regular project activities	f_t	67	35	41
	f_e	52.0	47.5	43.6
	%	46.9	24.5	28.7
Total	f_t	80	73	67
	f_e	80.0	73.0	67.0
	%	36.4	33.2	30.5

Note. PGŽ = Primorje-Gorski Kotar county; I = Istria county; LS = Lika-Senj county.
χ^2=15.492, df=2, p<.01. Cramer's V=.267, p<.01. χ^2=22.123, df=2, p<.01. Cramer's V=.317, p<.01.

Furthermore, the results of the chi-square test (χ^2 = 22.123, df = 2, p = .001; Cramer's V = 317, p = .001) (Table 3) showed that teachers from the Primorje-Gorski Kotar County reported more regular project implementation at the level of the entire school (46.9%) than teachers from the Istria (24.5%) and Lika-Senj (28.7%) counties did.

Statistically significant differences were determined between regular and irregular implementations of project activities in almost all tested categories. Positive sides of implementing project teaching as a form of integrated teaching that is pupil-oriented are, according to Crnković-Nosić (2007, p. 61), 'an unusual and interesting way of independent research work, high motivation, stimulating intellectual curiosity, respect for individual abilities, experience of group work, learning and application of different methods of work, development of collaborative relationships, (self)responsibility, and resolving unforeseen problem situations'.

Frequency of the Application of Contemporary Work Strategies and Techniques of Critical Thinking

The modern educational system places emphasis on understanding concepts, active, independent, and collaborative fact-finding, and content. Precisely in such a teaching process does teaching collaborative work strategies become inevitable. Below are the results of the differences between teachers who reported an irregular implementation and those who reported a regular implementation of projects in the application of various contemporary work strategies.

The t-test for independent samples (Table 4) showed that teachers who reported more regular project activities in their schools at the class level more often applied almost all contemporary work strategies than teachers who carried out project activities irregularly did: 'application of group activities' ($t = -3.382$, $p = .01$), 'organisation of individualised work' (taking into account different pupil abilities) ($t = -2.878$, $p = .01$), 'application of problem teaching' (identifying problems, problem questions, solutions) ($t = -3.188$, $p = .01$), 'exploratory learning through research' (observing, monitoring, collecting, researching, etc.) ($t = -2.085$, $p = .04$), and 'integrated theme days in the form of project teaching' ($t = -4.083$, $p = .01$). Considering curricular principles and the competence development of pupils, problem-teaching of exploratory learning strategies is oriented toward the development of skills, methods, and techniques of coping and active problem solving; it promotes and develops pupils' independence for intellectual activities.

A statistically significant difference between the two groups of teachers was not found in the application of 'exploratory learning through simulation' (role-plays, games with rules, case studies, etc.) ($t = -1.780$, $p = .08$).

The t-test for independent samples (Table 4) showed that teachers who reported more regular project activities at the level of the entire school more often implemented the following contemporary work strategies than teachers who reported the irregular implementation of project activities in their schools did: 'application of group activities' ($t = -3.249$, $p = .01$), 'organisation of individualised work' (taking into account different pupil abilities) ($t = -2.312$, $p = .02$), 'application of problem teaching' (identifying problems, problem questions, solutions) ($t = -2.456$, $p = .02$), and 'integrated theme days in the form of project teaching' ($t = -2.613$, $p = .01$). Creitare (2009, p.119) emphasises 'the wealth of different theoretical and practical approaches and gains the ability to perform them by adapting to teamwork, collaboration and acceptance of other opinions'. There was no statistically significant difference between the two groups of teachers in the application of 'exploratory learning through research'

(observing, monitoring, collecting, researching...) (t = -.572, p = .57) and 'exploratory learning through simulation' (role-plays, games with rules, case studies ...) (t = -890, p = .37). Precisely Craft et al. (2007) pointed out that over the last decade an increasing number of teachers have been using their professional skills and attempting to teach creatively by applying methods of problem solving with creative thinking and fostering and encouraging children's creativity.

Table 4
Frequency of the application of work strategies (at the level of class teaching and the entire school)

Work strategy			The class level					The school level				
			$\bar{x}$	s	t	df	p	$\bar{x}$	s	t	df	p
Application of group activities	N	73	3.55	1.041	-3.382	113.215	.01*	3.55	1.025	-3.249	125.2	.01*
	R	143	4.01	.769				3.99	.803			
Organisation of individualised work	N	73	3.77	.858	-2.878	214	.01*	3.82	.828	-2.312	216	.02**
	R	143	4.1	.794				4.08	.812			
Application of problem teaching	N	73	3.63	.842	-3.188	121.286	.01*	3.68	.820	-2.456	135.3	.02**
	R	142	3.99	.679				3.96	.706			
Exploratory learning through research	N	73	3.79	.686	-2.085	213	.04**	3.88	.692	-.572	215	.57
	R	142	4.01	.753				3.94	.791			
Exploratory learning through simulation	N	73	3.85	.72	-1.78	214	.08	3.89	.741	-.89	216	.37
	R	143	4.04	.768				3.99	.794			
Integrated theme days in the form of project teaching	N	73	3.6	.878	-4.083	214	.01*	3.72	.873	-2.613	216	.01*
	R	143	4.1	.825				4.04	.849			

Note. N = irregular project activities; R = regular project activities.

*p<.01. **p<.05.

The results of the t-test for independent samples (Table 5) showed that teachers who reported the regular implementation of project activities at the class level more often applied techniques of critical thinking (t = -1.963, p = .05) than teachers who reported irregular implementation of project activities did, while at the school level there were no statistically significant differences between the two groups of teachers.

Table 5
T-test for independent samples: differences in frequency of application of techniques of critical thinking at the class level and at the school level as part of the implementation of project activities

Application of the technique of critical thinking	Project activities	N	$\bar{x}$	s	F	p	t	df	p
The class level	Irregular	73	3.85	.720	.763	.38	-1.963	214	.05*
	Regular	143	4.07	.811					
The school level	Irregular	76	3.87	.772	.318	.57	-1.761	216	.08
	Regular	142	4.06	.783					

Note. *p< .05.

The results suggested that teachers who reported the regular implementation of project activities attach significance to the active role of pupils who use their skills, resources, and tools to 'ask questions, critically think and learn, make conclusions and decisions, apply knowledge to new situations and create new knowledge' (Schultz Jones, 2010, p.14).

ANOVA results (Table 6) showed that there were statistically significant differences between the counties in the application of techniques of critical thinking (F = 3.736, p = .025), i.e. it was determined that teachers from Istra County ($\bar{x}$ = 4.04) applied techniques of critical thinking more often than teachers from Lika-Senj County ($\bar{x}$ = 3.79) did.

Table 6
One-way ANOVA: differences between counties in the frequency of the application of techniques of critical thinking

County	N	$\bar{x}$	F	p	Bonferroni's test of multiple comparison			
					I	J	I-J	p
PRIMORJE-GORSKI KOTAR COUNTY (PGŽ)	80	4.04	3.736	.025	PGŽ	IŽ	-.101	1.000
						LSŽ	.250	.161
ISTRA COUNTY (IŽ)	72	4.14			IŽ	PGŽ	.101	1.000
						LSŽ	.351	.025*
LIKA-SENJ COUNTY (LSŽ)	66	3.79			LSŽ	PGŽ	-.250	.161
						IŽ	-.351	.025*

Note. *p<.05.

No statistically significant differences were found in the application of techniques of critical thinking with regards to other socio-demographic indicators.

Teachers' Attitudes on the Contemporary Paradigm of Childhood and the Educational Process

The role of the teacher is to encourage and guide the pupils in discovering and exploring new knowledge. As Jelavić (2008, p. 183) highlighted:

> insight/ knowledge is expressed as the unity of the empirical and rational, the experiential and reflective. The pupil is given the opportunity to discover, create knowledge by collecting relevant data, facts, information, through generalizing, creating, and defining terms, rules, laws, conclusions, by applying knowledge in everyday life, noticing, and solving problems.

With this approach in the contemporary educational process, the teacher, instead of ready-made answers about the world that surrounds the pupil, enables the pupils to engage in an independent detection and investigation of that world.

The t-test for independent samples (Table 7) showed that teachers who reported more regular project activities in their schools at the class level demonstrated more compliance with the contemporary paradigm of childhood and the educational process than teachers who reported irregular implementation of project activities did, and they did so in the following items: 'Pupils should be allowed to discover their own truths and theories (even if inaccurate) through active and direct research, but they should not be taught facts' ($t = -3.346$, $p = .01$), and 'The process in which a pupil seeks a solution is more important than the result itself' ($t = -2.365$, $p = .02$). However, teachers who reported the regular implementation of project activities also showed an agreement with the traditional paradigm of childhood and the educational process in the following items: 'A pupil learns best in those activities that have been planned and designed by the teacher' ($t = -2.721$, $p = .01$), 'For successful learning of more demanding content (e.g. scientific phenomena) it is necessary that the teacher lead and direct activities, while the pupil can learn less demanding content on his own' ($t = -1.973$, $p = .05$), and 'For the pupil to actually learn something it is important that the teacher teach the content, demonstrate, explain, reveal facts, and highlight important conclusions' ($t = -2.608$, $p = .01$). There was no statistically significant difference between the two groups of teachers on the item "Pupils should be allowed to create, plan, and manage their activities instead of activities being precisely planned by the teacher" ($t = -.418$, $p = .68$).

Table 7
Teachers' attitudes on the contemporary paradigm of childhood and the educational process (at the class level and at the school level)

			The class level					The school level				
			$\bar{x}$	s	t	df	p	$\bar{x}$	s	t	df	p
Pupils should be allowed to discover their own theories through active research and not be thaught facts.	N	73	3.89	.826	-3.346	213	.01*	4	.778	-1.965	164	.05**
	R	142	4.27	.782				4.22	.823			
A pupil learns best in those activities planned by the teacher.	N	73	3.03	.986	-2.721	216	.01*	3.09	1.002	-2.04	218	.04**
	R	145	3.39	.883				3.36	.875			
For successful learning of more demanding content it is necessary that the teacher lead activities.	N	73	3.58	.798	-1.973	216	.05**	3.68	.850	-.627	218	.53
	R	145	3.81	.827				3.75	.809			
The process in which the pupil seeks a solution is more important than the result itself.	N	71	3.96	.783	-2.365	212	.02**	4.03	.758	-1.23	214	.22
	R	143	4.2	.677				4.15	.708			
Pupils should be allowed to create and plan activities on their own.	N	73	3.44	.882	-.418	216	.68	3.38	.812	-1.288	218	.2
	R	145	3.49	.843				3.53	.871			
For the pupil to actually learn something it is important that the teacher teach the content.	N	73	3.67	.898	-2.608	212	.01*	3.68	.862	-2.599	214	.01*
	R	141	4.01	.89				4.01	.903			

Note. N = irregular project activities; R = regular project activities.
*p<.01. **p<.05.

The t-test for independent samples (Table 7) showed that teachers who reported more regular project activities at the level of the entire school demonstrated more compliance with the contemporary paradigm of childhood and

the educational process than teachers who reported irregular implementation of project activities in the item 'Pupils should be allowed to discover their own truths and theories (even if inaccurate) through active and direct research, but they should not be taught facts' ($t = -1.965$, $p = .05$). However, they also showed greater agreement with the traditional paradigm of childhood and the educational process than teachers who reported irregular implementation of project activities in the following items: 'A pupil learns best in those activities that have been planned and designed by the teacher' ($t = -2.040$, $p = .04$) and 'For the pupil to actually learn something it is important that the teacher teach the content, demonstrate, explain, reveal facts, and highlight important conclusions' ($t = -2.599$, $p = .01$).

There was no statistically significant difference between the two groups of teachers in the following items: for successful learning of demanding content (e.g. scientific phenomena) it is necessary that the teacher guides and directs it, while the pupil can learn less demanding content on his own ($t = -.627$, $p = .53$), 'The process in which a pupil seeks a solution is more important than the result itself' ($t = -1.230$, $p = .22$), and 'Pupils should be allowed to create, plan, and manage their activities instead of activities being precisely planned by the teacher' ($t = -1.288$, $p = .20$). Bernes (2007, p. 147) noted that 'without the pupils' engagement there can be no true learning'. In line with this approach, there is a clear need to involve pupils in the design, planning, and management of research activities, understanding of the process of learning and developing their own criteria for success. As Railsbach (2002, according to Genc, 2015) points out, as a model of learning project learning encourages collaboration among pupils, develops pupil planning skills, decision-making and taking responsibility. Learners learn how to manage time effectively and solve an existing problem that makes it easier to connect learning content to the real world and contributes to the permanent retention of the information received.

Conclusion

The results indicated a frequent implementation of project activities at the level of both the class and the entire school. Teachers who reported the regular implementation of project activities in their schools more frequently consulted contemporary forms of group activities and individualised work, thereby taking into account different pupils' abilities. They noted applying problem-teaching strategies of exploratory learning, research methods, planning thematically integrated teaching, and applying techniques of critical thinking.

Enabling the pupils to develop critical thinking contributes to the formation of an independent, active, creative, and responsible person, who will find ways to reach goals based on their own opinion. This way the pupil will be able to connect new knowledge with previous knowledge, assess their values, and thereby build their own distinctive learning schemes, taking up an active role in teaching. Teachers are expected to encourage high-quality work with the possibility of finding solutions to different situations, to allow pupils to express their needs, to include as many senses as possible, to actively and independently demonstrate content, to use acquired knowledge, to correct their errors, and to develop their dispositions and tendencies.

However, the results showed that, unrelated to the teaching and teaching collaborative methods and work strategies, the present content correlation and integration, and adjustment of the teaching content to the pupils' interests, teachers estimated a frequent use of established approaches to the educational process (the teacher should explain, present the facts, and highlight important conclusions, while the pupil learns best during activities that have been planned and devised by the teacher). The impetus to develop critical thinking and research curiosity in pupils while working on project activities essentially reflects two key objectives: to learn how to explore everything that surrounds the pupil, and to take responsibility and initiative for independent work and collaborative activities, as well as to create space for the pupils' critical thinking. Critical thinking contributes to the development of learning and teaching. The results provide room for further reflection on the purpose of quality didactic-methodic advancements in planning and programming learning and teaching project activities.

Acknowledgements

This paper was funded by the University of Rijeka within research project 'Culture of Educational Institution as a Factor in Co-construction of Knowledge' (head of the project: Lidija Vujičić; grant number: 13.10.2.2.01).

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Critical Thinking as a Dimension of Constructivist Learning: Some of the Characteristics of Students of Lower Secondary Education in Croatia

Tomislav Topolovčan*[1] and Milan Matijević[2]

The aim of this study was to examine the characteristics of the frequency of constructivist learning and its dimensions, including critical thinking, the differences in them with regard to certain demographic characteristics, and correlations with the frequency of use of certain new media in teaching students in the final grade of lower secondary education in Croatia (N = 703). The results show that students assessed a significantly higher incidence of critical thinking in relation to the other four dimensions of constructivist learning. In respect of every latent dimension of constructivist learning, (all) students with higher grade point averages are inclined towards a higher assessment of the frequency of the personal relevance of learning, critical thinking, and collaborative learning. Girls are more likely to highlight the personal importance of studying, critical thinking, and student negotiation, while there is no difference in the assessments regarding gender in the control of studying and the uncertainty of learning with new media. Students, regardless of where they live, assess the incidence of general constructivist learning equally, also in regard to each dimension, i.e. the personal relevance of learning, the uncertainty of learning (with new media), critical thinking, shared control, and collaborative learning. The frequent use of new media is associated with the increased incidence of all the dimensions of constructivist learning. An interpretation of the results indicates that critical thinking is by far the most prominent dimension of constructivist learning, whereby the gender of students and their grade point average are, to some extent, key factors in the differences in critical thinking, but also in most other dimensions of constructivist learning. This paper explains in detail the didactic implications of its research results.

Keywords: new media, constructivist learning, critical thinking, secondary education, students

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Kritično mišljenje kot dimenzija konstruktivističnega učenja: nekatere značilnosti učencev predmetne stopnje osnovne šole na Hrvaškem

Tomislav Topolovčan in Milan Matijević

Namen raziskave je bil preučiti značilnosti konstruktivističnega učenja in njegovih dimenzij, vključno s kritičnim mišljenjem, ugotoviti razlike med dimenzijami glede na določene demografske značilnosti in njihovo povezanost s pogostostjo uporabe določenih novih medijev pri poučevanju učencev v zadnjem razredu osnovne šole na Hrvaškem (N = 703). Rezultati kažejo, da so učenci kritično mišljenje ocenili statistično pomembno višje glede na preostale štiri dimenzije konstruktivističnega učenja. Glede na vsako latentno dimenzijo konstruktivističnega učenja se (vsi) učenci z višjimi povprečnimi ocenami nagibajo k višjemu ocenjevanju pogostosti osebne pomembnosti učenja ter kritičnega in sodelovalnega učenja. Dekleta pogosteje poudarjajo osebni pomen učenja, kritičnega mišljenja in lastnega soočanja z njim, medtem ko pri nadzorovanju učenja in negotovosti pri učenju z novimi mediji med spoloma ni statistično pomembnih razlik. Učenci – ne glede na to, kje živijo – enako ocenjujejo stopnjo splošnega konstruktivističnega učenja, tudi glede na vsako dimenzijo, tj. osebni pomen učenja, negotovost učenja (z novimi mediji), kritično mišljenje, deljeni nadzor in sodelovalno učenje. Pogostost uporabe novih medijev je povezana s povečano pogostostjo ocenjevanja vseh dimenzij konstruktivističnega učenja. Interpretacija rezultatov kaže, da je kritično mišljenje daleč najpomembnejša dimenzija konstruktivističnega učenja, pri čemer sta spol učencev in njihova povprečna ocena do določene mere ključna dejavnika pri razlikah v kritičnem mišljenju pa tudi pri večini preostalih dimenzij konstruktivističnega učenja. Prispevek natančno pojasnjuje didaktične posledice raziskovalnih rezultatov.

Ključne besede: novi mediji, konstruktivistično učenje, kritično mišljenje, predmetna stopnja, učenci

Introduction

The projects of many creative and innovative teachers at the beginning of the 20th century were in line with constructivist teaching. The misconception that those who know (teachers) can transfer knowledge to those who do not know (students) by lecturing and demonstration faced great competition in a new didactic scenario in which students became active subjects who research, discover, solve problems, collaborate, and think critically about everything they do and learn. Students ask questions and seek answers. They learn individually and in small groups. Instead of lecture rooms, schools had classrooms, laboratories, and workshops. This happened at the end of the 19th century and during the first decades of the 20th century. World War II halted all these revolutionary events in Europe, but in the USA the trend of change in class and schools continued (for more, see Skiera, 2010).

In contrast to the intellectualist school of the 19th century, John Dewey (1859-1952) proposed a school in which children learn through independent work and research in immediate reality. School was seen as needing to satisfy children's natural interests for learning and becoming acquainted with the world that surrounds them. Learning was to be based on the student's opinion and other activities. Instead of lecture rooms, he insisted on learning in workshops, in the kitchen, laboratory, library, in the schoolyard, or in a school garden or an orchard. With such didactic scenarios, a student can compare, think, and conclude. It can be said that Dewey was among the first pedagogues to clearly point out and explain the importance of a student's opinion and learning by discovering and solving problems. In the USA, he was joined by Kilpatrick and Helen Parkhurst.

From the history of pedagogy and didactics, it is clear that critical thinking is an essential element of learning and teaching, especially in the movements of reform pedagogy (Oelkers, 2010; Skiera, 2010). Critical thinking was considered important as a process of learning, but the question was to what extent it was to be taught (Huber & Kuncel, 2015). Critical thinking is not easy to define (Huber & Kuncel, 2015; Lai, 2011), which is partly because it can be approached from various directions (Lai, 2011; Sternberg, 1986).

Critical thinking can be explained from three points of view: philosophical, psychological, and educational, or didactic (Lai, 2011; Lewis & Smith, 1993; Sternberg, 1986). From the philosophical point of view of critical thinking, Lai (2011) summarises the definitions of various authors. From the philosophical perspective, critical thinking can be defined as 'reflective and reasonable thinking that is focused on deciding what to believe or do' (Ennis, 1985, p. 45), "judging in a reflective way what to do or what to believe' (Facione, 2000, p.

61), 'the propensity and skill to engage in an activity with reflective skepticism' (McPeck, 1981, p. 8), and 'thinking aimed at forming a judgment' (Baillin et al., 1990; Ennis, 1985; Facione, 2000; McPeck, 1981, according to Lai, 2011). From the perspective of philosophy, critical thinking is seen as the ability to assess and take a stand or form a belief, while from the psychological standpoint, it is also something that an individual is capable of doing. In other words, it is the relationship between what individuals think and what they are ready to do (Sternberg, 1986).

In this respect, Lai (2011) points out that critical thinking, from a psychological point of view, can be defined as 'the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts' (Sternberg, 1986, p. 3), 'the use of those cognitive skills or strategies that increase the probability of a desirable outcome' (Halpern, 1998, p. 450) and 'seeing both sides of an issue, being open to new evidence that disconfirms your ideas, reasoning dispassionately, demanding that claims be backed by evidence, deducing and inferring conclusions from available facts, solving problems, and so forth' (Willingham, 2007, p. 8; Halpern, 1998; Sterneberg, 1986; Willingham, 2007, according to Lai, 2011). The third approach or tradition of critical thinking is educational, i.e. didactic. Although it is known that critical thinking has a long tradition in European didactics, in this respect, it is based on the known taxonomy of the cognitive goals of B.S. Bloom. Thus, according to Lai (2011) and Sternberg (1986), the final three levels of cognitive goals, i.e. to analyse, evaluate, and synthesise, are considered critical thinking. In addition to certain imperfections of critical thinking as conceived in this way, Sternberg (1986) emphasises that the advantage of the didactic approach is that it can be considered to be based on teaching and learning. Although philosophical, psychological, and didactic approaches offer different concepts of critical thinking, Lai (2011) summarised the main mutual elements, that is, some of the features of critical thinking. These features include analysing arguments, interventions based on inductive or deductive reasoning, assessing, evaluating and decision making, and problem solving (Case, 2005; Ennis, 1985; Facione, 1990; Halpern, 1998; Lipman, 1988, Paul, 1992; Tindal & Nolet, 1995; Willingham, 2007, according to Lai, 2011).

With various traditions and approaches to critical thinking, one of the main questions is defining the construct of critical thinking. The traditional approach to this construct defines it as a broad capacity to interpret information and finding the exact way to approach a problem, being applicable to a wide range of problems and situations. This approach is criticised due to the question of whether critical thinking manifests itself as an analysis of arguments,

and whether critical thinking is applicable in different areas. In other words, whether critical thinking is applicable in all areas of an individual's activity, or if it is only tied to certain specific activities, work, and domains (Kuncel, 2011). In this respect, a question is also raised about whether critical thinking is 'transferrable' from one area to another (Huber & Kuncel, 2015).

The two approaches to conceptualising critical thinking and putting it into operation are also tied to this. The first approach is one that defines critical thinking as a predisposition, while the second sees critical thinking as a skill (for more, see Huber & Kuncel, 2015). For these two concepts of critical thinking, special tests for its measurement have been formed. For critical thinking as a predisposition, the *California Critical Thinking Disposition Inventory* (CCTDI) is used, while for critical thinking as a skill, the *California Critical Thinking Skills Test* (*CCTST*) (Huber & Kuncel, 2015) is employed.

Irrespective of whether critical thinking is a predisposition or a skill, whether it focuses on a wide range of areas or on a specific one, in the educational, i.e. didactic context, one of the important questions is whether it can be taught, that is, whether one can be taught to think critically (Huber & Kuncel, 2015). With this in mind, Hattie (1982, according to Huber & Kuncel, 2015) claims that learning is not a predictor of critical thinking. In contrast, Huber and Kuncel (2015) indicate that it is possible to teach and learn critical thinking. Several more questions arise in relation to the claim that critical thinking can be taught and learned. These questions relate to whether critical thinking is developed by formal education or informal learning, whether there are changes in the extent of learning during education and whether changing the educational content in the curriculum can be considered a meaningful factor in developing critical thinking (according to Huber & Kuncel, 2015).

Regardless of these dilemmas, and taking into consideration some of the mutual features of critical thinking (Lai, 2011; Sternberg, 1986), both as a predisposition and a skill, it is justified from the didactic point of view to claim that, for the development of students or for eventual teaching and learning, it is necessary to have a student-centred approach. This confirms what reform pedagogues have claimed: it is the students' activity that is important. In other words, the constructivist class represents a significant contribution to teaching and developing critical thinking. Accordingly, Taylor, Fraser and Fisher and their associates (Kim, Fisher & Fraser, 2006; Taylor, Fraser, & White, 1994; Taylor, Fraser, & Fischer, 1997) conceived and defined the concept of constructivist learning in this way, in which one of its dimensions is critical thinking. Constructivism cannot be defined and explained from just one scientific standpoint (Philips, 1995). Different approaches, for example, the sciences of sociology,

biology, philosophy, neuroscience, cognitive psychology, and systems theory, implement it in their starting framework and interpret it accordingly (Philips, 1995; Terhart, 2003). Constructivism can be explained as a philosophical (ontologically and epistemologically), psychological and didactic approach or theory (Kanselaar, de Jong, Andriessen, & Goodyear, 2002).

From the didactic point of view, constructivist learning can be defined as a self-regulated, non-linear, and interpretive process of building knowledge, supported by interaction with one's surroundings (Fosnot & Perry, 2005, pp. 34). In other words, it is not possible to transfer or teach knowledge to someone, but it is the individual who constructs their own knowledge based on their foreknowledge, emotional state, and own (critical) thinking, in interaction and communication with other people or in using objects. Therefore, as features of constructivist learning, the following can be noted (Boethel & Dimock, 2000, according to Yilmaz, 2008, pp. 167–168):

1. learning is an active process;
2. learning is an adaptive activity;
3. learning is situated in the context in which it occurs;
4. knowledge is not innate, passively absorbed, or invented but constructed by the learner;
5. all knowledge is personal and idiosyncratic;
6. all knowledge is socially constructed;
7. learning is essentially a process of making sense of the world;
8. experience and prior understanding play a role in learning;
9. social interaction plays a role in learning; and
10. effective learning requires meaningful, open-ended, challenging problems for the learner to solve.

With such defined and characterised constructivist learning, the teacher has a different role from that in a teacher-centred classroom. The teacher is no longer a person who possesses knowledge and then transfers it to students (since the starting point consists of different ontological and epistemological assumptions), but is a co-constructor of the students' knowledge. From this point of view, the concepts of learning and teaching are separated, since it is possible to learn without teaching, to learn while being taught (in class), to teach without triggering the process of learning, and to learn what is not explicitly taught (hidden curriculum). Concentrating solely on the terms of the learning environment, and starting from it as the focus of the mutual activity of students and the teacher (Bognar & Matijević, 2005), teaching means organising the activities of learning through which students will, by performing

activities connected with a certain content, individually or cooperatively, form their own knowledge. With this in mind, the features of constructivist learning are those that provide (Herrington, Oliver, & Herrington, 2007):

1. authentic contexts that reflect the way knowledge will be used in real life;
2. authentic activities;
3. access to expert performances and the modelling of processes;
4. multiple roles and perspectives;
5. the collaborative construction of knowledge;
6. opportunities for reflection;
7. opportunities for articulation;
8. coaching and scaffolding; and
9. authentic assessment.

With such defined features of constructivist learning, some features of encouraging critical thinking can be recognised. These derive mostly from the standpoint of the multiple roles and perspectives of certain learning content and activities and reflection that encourage the forming of abstract terms. Such defined features of constructivist learning are to a certain extent analytically set. From the didactic point of view, synthesising all the mentioned features allows us to point to certain learning strategies which unite all constructivist features. We can thus consider (Topolovčan & Matijević, 2016; Topolovčan, Rajić, & Matijević, 2017):

1. inquiry-based learning;
2. problem-based learning;
3. project-based learning;
4. cooperative learning;
5. play-based learning; and
6. learning-by-doing.

These learning strategies are not new. Didactic and pedagogical history tells us that they were formed over a hundred years ago in the directions and movements of reform pedagogy. It is important to emphasise that neuroscientific research confirms the features of constructivist learning (e.g. Hermmann, 2009; Sprenger, 1999) and, therefore, also confirms the didactic value of the directions and movements of reform pedagogy (e.g. Skiera, 2010). By analysing and summarising all the mentioned features of constructivist learning in more detail, it can be emphasised that constructivist learning, i.e. constructivist didactics, is essentially a didactic of lifelong learning.

In terms of the development and role of computer technologies in education, it is justified to say that this research area in education has been one of the most dynamic in the last four decades (Tamim et al., 2011). According to Tamim et al. (2011), many primary empirical studies on the role of digital media in education have been carried out in the last forty years; based on them, in the last 30 years or so, more than sixty meta-analyses have been conducted. This number of meta-analyses has led to second order analyses based on them, which constitute a meta-analysis of meta-analysis (Tamim et al., 2011).

These meta-analyses have shown that in the 1970s and 1980s there was a euphoric view of the role of new media in education (Tamim et al., 2011). That is, computer (new) media were considered the single factor that greatly increased the quality of teaching and the level of achieving the desired outcomes. It could also be claimed that learning and teaching with digital media are equally or even more effective than without it (Schmidt et al., 2009; Torgerson & Elbourne, 2002). From as early as the 1990s, the effect of media decreased significantly, while in the 2000s contrasting results, interpretations, and conclusions arose (Rosen & Salomon, 2007; Tamim et al., 2011). In other words, it was shown that learning with digital media does not have to be more effective than learning without them. Specifically, it was found that new media are not the single factor that increases the quality of learning and raises the extent of achieving the desired outcomes. It was confirmed that learning is a multivariate phenomenon and process in which interrelated factors have important roles, as have digital media. Accordingly, it was shown that the important things for the quality of learning and achieving the desired outcomes are the type of learning outcomes, class content, the individual characteristics of students and teachers (the extent and type of foreknowledge, motivation, mental condition, capacity for using digital media), types of evaluation, and the didactic organisation of learning based on constructivist learning (c.f. Dillon & Gabbard, 1998; Rosen & Salamon, 2007; Tamim et al., 2011; Topolovčan & Matijević, 2016; Topolovčan, Matijević, & Dumančić, 2016).

The value of new media in classrooms is perceived if the new things they offer are analysed more closely. When all the functional novelties are abstracted, what is truly different about what digital media offers in class is digital, simultaneous, and multi-modal transfer, storing and presenting content, executing tasks with the help of digital technology that were (until recently) done manually, and digitally forwarded communication (adapted from: Kanselaar et al., 2002). Thus, it can be claimed that using digital media requires activities that involve the students in cooperation, research, play, etc., and not presentation by the teacher from the front of the classroom. Therefore, the didactic value

of using digital media is the fact that they enable inquiry-based and problem-based learning, individualisation of work, situational (contextual) learning, cooperative learning and creative learning, that is, learning-by-doing (Kanselaar, de Jong, Andriessen, & Goodyear, 2002; Schulz-Zander & Tulodziecki, 2011).

The characteristics of all these activities for living and learning in a digital environment are also immanent features of constructivist strategies of learning, such as learning by researching, learning by problem solving, cooperative learning, learning by playing, project learning, and action learning (Topolovčan & Matijević, 2016; Topolovčan, Matijević, & Dumančić, 2016). However, they are also manifest forms of critical thinking. In this regard, critical thinking can be viewed as an integral conceptual and practical element of constructivist learning (Taylor, Fraser, & Fischer, 1997), which can also be stimulated using digital media (Topolovčan & Matijević, 2016; Topolovčan, Matijević, & Dumančić, 2016).

Methodology

Aims

The aim of this research was to examine the features of critical thinking as an integral element of constructivist learning. In this sense, the position of the dimension of critical thinking in relation to other dimensions of constructivist learning as conceived by Taylor, Fraser, and Fisher (1997) was also the subject of examination. Another aim of the research was to find out whether there are differences in the dimensions of constructivist learning, and of critical thinking, given the gender and place of residence of the students, and the correlation with the final grade average of the previous year and the frequency of using certain new media in class.

Sample

The convenience sample comprised students of the eighth grade (N = 703). The sample covered fourteen schools in eight counties of Croatia (Varaždin County, Međimurje County, Koprivnica-Križevci County, Brod-Posavina County, Osijek-Baranja County, Primorje-Gorska Kotar County, Split-Dalmatia County, and the City of Zagreb). In the subsample of students based on gender, there were 334 (47.5%) boys and 369 (52.5%) girls. Considering their residence, 601 (85.5%) students live in a town/city, and 102 (14.5%) in a village. Along with data on gender and residence, one of the attributes of the respondents was the frequency of using new media in class. New media include computers, the internet, mobile phones, multimedia software, smart phones,

tablets, and social networks. The respondents assessed the frequency of using new media: 16.8% of students never use a computer in class, 10.4% use it once a month, 14.9% 2-3 times a month, 15.1% once a week, 18.2% several times a week, and 24.6% of students daily. A total of 11.8% never use the internet in class, 8.7% once a month, 16.4% 2 to 3 times per month, 13.8% once a week, 16.6 % several times per week and 32.7% use it daily. Mobile phones are never used in class by 25.7%, once a month by 9.1%, 2 to 3 times per month by 14.9%, once a week by 8%, several times per week by 10.8% and daily by 31.4% of students. 37% of students never use multimedia software in class, 17.2% use it once a month, 16.6% 2 to 3 times per month, 10.1% once a week, 8% several times per week, and 11.1% use it daily. 57% of students never use tablets in class, 7.8% use them once a month, 10.8% 2 to 3 times per month, 3.3% once a week, 9.1% several times per week and 11.9 % use them daily. 36% of students never use smart phones in class, 7.8% use them once a month, 12.5% 2 to 3 times per month, 8% once a week, 9.8% several times per week and 25.9 % use them daily. Social networks are never used in class by 24.9% of students, once a month by 9.5%, 2-3 times per month by 13.8%, once a week by 9.2%, several times per week by 12.2%, and daily by 30.3% of students. The data were collected in 2014.

Instruments

Data were collected using the pen-and-paper method, in the form of a questionnaire. The first part of the questionnaire comprised demographic data: gender (male/female), residence (city/village), final grade average in the previous year, and the frequency of using a computer, the internet, mobile phone, multimedia software, tablet, smart phone and social networks, measured with a six-point scale (1 = *never*, 2 = *once a month*, 3 = *two to three times per month*, 4 = *once a week*, 5 = *several times per week*, 6 = *daily*). The data on the characteristics of constructivist learning, and with that critical thinking, were collected using the Constructivist Learning Environment Scale (*CLES*) (Taylor, Fraser, & White, 1994; Taylor, Fraser, & Fisher, 1997. This instrument comprises five factors and thirty-five Likert type five-point items (1 = *never*, 2 = *rarely*, 3 = *occasionally*, 4 = *often*, 5 = *almost always*) and every mentioned factor comprises seven manifest statements. The *Personal Relevance* factor refers to the importance of learning as perceived by respondents. The *New Media Uncertainty* factor originally referred to uncertainty in mathematics, but since this factor may relate to any teaching area (mathematics, science, etc.), it can be modified into uncertainty of learning using new media. The *Critical Voice* factor focuses on critical thinking, the multiplicity of perspectives, reflection and selection skills. The *Shared Control* factor refers to the ability to plan learning, participation

in planning educational activities and self-regulated learning. *Student Negotiation* focuses on collaborative learning, understanding, and negotiation about learning activities. With an exploratory factor analysis (PCA, Varimax rotation) (KMO = .917; Bartlett's test of sphericity c^2 = 3207.31; p = .00) and an eigenvalue greater than 1, eight factors that explain 55.98% of the total variance were obtained. The threshold for factor loadings was .40. This kind of structure does not sufficiently replicate the original factor structure of the instrument, so a quasi-confirmatory FA with five factors was carried out.

Table 1
Factor structure of the Constructivist Learning Environment Scale

	Statements	1	2	3	4	5
32.	It's OK to speak up for your rights (CV)	.67				
27.	I'm free to express my opinion (CV)	.66				
21.	It's OK to complain about anything that stops me from learning (CV)	.66				
15.	It's OK to complain about activities that are confusing (CV)	.55				
26.	By using *new media*, I can learn a lot about the world around me (UNM)	.52				
17.	I try to make sense of other students' ideas (SN)	.48				
19.	I get a better understanding of the world outside of school (PR)	.48				
16.	I have a say in deciding the rules for classroom discussion (SC)	.47				
31.	I learn that today's new media is different from the media of long ago (UNM)	.40				
5.	I get the chance to talk to other students (SN)					
22.	I have a say in deciding how much time I spend on an activity					
40.	I have a say in deciding how my learning is assessed (SC)		.68			
34.	Other students explain their ideas to me (SN)		.66			
33.	I have a say in deciding what will be in the test (SC)		.63			
23.	I ask other students to explain their ideas (SN)		.58			
41.	Other students pay attention to my ideas (SN)		.57			
10.	I help the teacher decide how well my learning is going SC)		.57			
4.	I help the teacher to plan what I'm going to learn (SC)		.57			
28.	Other students ask me to explain my ideas (SN)		.52			
39.	I feel unable to complain about anything (CV)		.45			
11.	I talk with other students about how to solve problems (SN)					
37.	What I learn has nothing to do with the world outside of school (PR)			.66		
29.	I feel confused (SN)			.63		
30.	What I learn has nothing to do with my out-of-school life (PR)			.60		
3.	It's OK to ask the teacher 'Why do we have to learn this?' (CV)			.53		
14.	I learn how the *new media* are constructed. (UNM)				-.75	
20.	I learn about various kinds of *new media* used by people in other cultures (UNM)				-.70	
13.	I learn how I can use *new media* outside the classroom (school). (UNM)				-.64	
8.	I learn how the *new media* have changed over time. (UNM)				-.63	
38.	I learn how the *new media* can help me discover many rules in nature. (UNM)				-.42	
25.	I learn about interesting things in the world outside the classroom (school) (PR)					
1.	I learn about the world outside the school (PR)					.73

	Statements	1	2	3	4	5
2.	I learn that the *new media* can give perfect answers. (PR)					.52
9.	I feel free to question the way I'm being taught (CV)					.41
7.	New learning starts with problems about the world outside the school (PR)					
	Eigenvalue	9.12	2.60	1.77	1.56	1.26
	% of explained variance	12.8	9.3	8.72	5.78	5.32

Note. CV = Critical Voice; SC = Shared Control; PR = Personal Relevance; UNM = Uncertainty about New Media; SN = Student Negotiation (the abbreviations for the factors are from the original factor structure).

A quasi-confirmatory five-factor FA explains 46.63% of the total variance (Table 1). The first factor consists of nine items, out of which four are from the *Critical Voice* factor, which is why this is considered the *Critical Voice* factor, although it also contains two items of the *Uncertainty of New Media* factor, and one from the *Personal Relevance* of learning, *Shared Control* and *Student Negotiation* factor. The second factor comprises nine items, of which four are from the *Shared Control* factor; it also consists of four particles from *Student Negotiation* and one from the *Critical Voice* factor, so it is unclear as to what factor can be considered. The third factor consists of four items, of which two are from the *Personal Relevance of Learning* factor, one from the *Critical Voice* and one from the *Student Negotiation* factor. Since two items are from *Personal Relevance*, it can be considered that this structure gravitates towards that factor. The fourth factor is represented by five items from *Uncertainty of New Media*, so this structure gravitates towards the *Uncertainty of New Media* factor. The fifth factor comprises three items, two of which are from *Personal Relevance*, and one is from *Uncertainty of New Media*, so it is unclear which factor can be considered.

Table 2
Descriptive features of the Constructivist Learning Environment Scale

	Subscale	UNM	CV	SC	SN	*N* of statements	*M*	*SD*	*Min*	*Max*	α
1.	Personal relevance	.61**	.48**	.35**	.50**	7	3.24	0.69	1	5	.63
2.	New media uncertainty		.52**	.39**	.50**	7	3.28	0.81	1	5	.78
3.	Critical voice			.47**	.52**	7	3.35	0.77	1	5	.71
4.	Shared control				.62**	7	2.63	0.75	1	5	.72
5.	Student negotiation				1.0	7	3.07	0.74	1	5	.72

Note. CV = Critical Voice; SC = Shared Control; PR = Personal Relevance; UNM = Uncertainty about New Media; SN = Student Negotiation.
*p< .05. **p< .01.

The structure obtained using quasi-confirmatory FA shows that this kind of structure is not sufficient to replicate the original factor structure of the

instrument; therefore, five composite dimensions were constructed with the original number of manifest items of the *Constructivist Learning Environment* scale. The cross correlations of factors are satisfactory (Table 2). Given this, an original factor structure of instruments was implemented.

Statistical data were processed and analysed by means of the SPSS 20.0 software package. Non-parametric tests were used because the data did not meet the criteria for parametric tests, since the data had been collected through a Likert scale (ordinal scale). A Friedman test was used to examine the difference between the dimensions of constructivist learning, a Mann-Whitney U test was used to determine the differences between the dimensions of constructivist learning with regard to gender and place of residence, and a Spearman correlation test was used to examine the correlations.

Results and Discussion

In terms of the research question, if there is a difference in assessing the dimensions of constructivist learning, i.e. if the dimension of critical learning is different than other dimensions, the Friedman test results indicate that there is a statistically significant difference among the dimensions of constructivist learning $\chi 2$ (4, n = 703) = 610,426; $p < .001$ (average values and standard deviations are shown in Table 1). In other words, it was seen that students assess *Critical Voice (Thinking)* (*Mdn* = 3.42) as most the frequent, and after that *New Media Uncertainty* (*Mdn* = 3.28), *Personal Relevance* (*Mdn* = 3.27), *Student Negotiation* (*Mdn* = 3.14) and *Shared Control* (*Mdn* = 2.57). These results are in contrast to some of the previous ones (Taylor, Fraser, & White, 1994; Nix, Fraser, & Ledbetter, 2003), since they indicate that the dimension of *Critical Thinking* is not the most frequent one. Differences among the results could be explained by cultural differences between samples and different teaching practices. They can also be explained by the foreknowledge and experience of the students (which are subject to different teaching practices), because it has been shown that richer learning experience can be important for a higher level of critical thinking. This is also confirmed by the connection between critical thinking and constructivist learning; it has been shown that students with less experience in solving different tasks profit more by learning from direct teaching, as opposed to constructivist learning (Kalyuga, Chandler, & Sweller, 2001). In other words, students with more foreknowledge can learn better in the constructivist way. A similar finding is also claimed by Reid, Zhang, and Chen (2003) and Lee and Chen (2009) who, based on their research, show that more successful students better organise the conditions for constructivist learning.

Although, in contrast, when separately comparing critical thinking and constructivist learning, those two concepts are connected (Bošnjak, 2009).

Table 3
Differences in constructivist learning regarding gender

	Personal Relevance			New Media Uncertainty			Critical Voice			Shared Control			Student Negotiation		
	M	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*
Boys	3.18	.85	3.21	3.29	.85	3.29	3.45	.88	3.42	2.67	.77	2.71	3.07	.88	3.07
Girls	3.29	.68	3.28	3.27	.77	3.28	3.79	.74	3.79	2.59	.72	2.57	3.13	.72	3.14
U	55626.5*			60411.0			52418.0**			58259			55337*		
z	-2.236			-0.452			-3.430			-1.251			-2.342		

Note. *p< .05. **p< .01.

Considering the research question about whether there are differences in the dimensions of constructivist learning regarding gender, the Mann-Whitney U test showed that, in respect of any latent dimension of constructivist learning (Table 3), girls assess that they often pay attention to the personal importance of learning and *critical voice*, while the boys do so occasionally. These results can be interpreted in such a way that, possibly, the girls have higher intrinsic motivation for learning, which then also implies critical thinking. It is also reasonable to explain these results with certain individual cognitive gender characteristics obtained in some studies, interpreted by Zarevski, Matešić, and Matešić (2010). It is also possible that girls have a more pronounced critical voice because they have more prominent verbal, social and communication skills (elements of social constructivism) which may be important for the formation of critical thinking. Indeed, the importance of communication, verbal and social skills confirms the result that girls have more pronounced student negotiation than boys. It can therefore justifiably be recommended that boys be encouraged through student-centred didactic arrangements to develop communication skills and critical thinking that would eventually increase the intrinsic (personal) relevance of learning. In contrast, girls and boys occasionally perceive the uncertainty of new media, control (of learning) and student negotiation in the context of constructivist learning. These (descriptive) results show that constructivist learning and teaching still do not dominate in Croatian schools. The results that there are no gender differences in individual dimensions are in line with the results of Hermans et al. (2008) who claim that there are no differences in constructivist learning. The fact that there are no gender differences is also in line with the results

of neutralising cognitive gender differences (mostly in intelligence), as shown by Zarevski, Matešić and Matešić (2010). This result can also be interpreted by modern cultural-social changes in the perceptions of gender roles and prejudice.

Table 4
Differences in constructivist learning considering residence

	Personal Relevance			New Media Uncertainty			Critical Voice			Shared Control			Student Negotiation		
	M	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*
City	3.24	.71	3.28	3.27	.83	3.28	3,35	.78	3.42	2,63	.76	2.57	3,08	.74	3.14
Village	3.2	.55	3.21	3.33	.65	3.42	3,39	.69	3.42	2,58	.65	2.57	3,05	.69	3.14
U	28745.0			29593.0			30239.0			29483.5			29761.5		
z	-1.008			-0.218			-1.646			-0.617			-0.470		

Note. *$p < .05$. **$p < .01$.

Regarding the research question about whether there are differences in the dimensions of constructivist learning regarding residence (Table 4), the Mann-Whitney U test shows that there are no differences in any dimension. In other words, students who both live in the city and in the village assess the frequency of all dimensions of constructivist learning equally; that is, *personal Relevance, New Media Uncertainty, Critical Voice (Thinking), Shared Control and Student Negotiation,* along with the fact that the *Shared Control* dimension has the lowest assessment. These results imply that there are fewer differences among students from rural and urban areas, which can also be interpreted with the role of informal learning and using new media (Toplak, Topolovčan, & Matijević, 2013), primarily the internet and social networks. These results are encouraging because they indicate that neither the location of the school nor the residence of the students is crucial to the quality of teaching and learning, which to some extent indicates a reduction in geographical differences that has also been identified in some education systems, for example, Finland (Sahlberg, 2012).

Furthermore, regarding the research question about whether there is a connection between the assessment of the dimensions of constructivist learning and the final grade average and the frequency of using computers, the internet, mobile phones, multimedia software, tablets, smart phones, and social networks in the classroom, the Spearman correlation test was used (Table 5). The test shows that students with a higher final grade average are more inclined towards *Personal Relevance, New Media Uncertainty, Critical Voice* and *Student Negotiation* than students with a lower final grade average are. However, there is no correlation

between the final grade average and *Control of Learning.* The fact that students with a higher final grade average are more inclined towards more frequent constructivist learning (and in four dimensions) could be explained and justified if we assume that they have better foreknowledge, but this has no firm theoretical or practical basis from the didactic point of view. However, this result is in line with the statements of Kalyuga, Chandler and Sweller (2001), Hermans et al. (2008), Lee and Chen (2009), and Reid, Zhang, and Chen (2003) who point out that students with better foreknowledge show better constructivist learning. Nevertheless, one should be cautious with such an interpretation, especially because there is no connection between success in school and the *Shared Control* dimension, which can be an indicator of learn-how-to-learn competence. It should also be pointed out that the outcomes of learning should not be measured with conventional instruments for teacher-centred classes (Rosen & Salomon, 2007). Another significant reason for cautious interpretation is that the control of learning is an inner condition of learning while grades are an external motivator and an outer condition of learning (Cindrić, Miljković, & Strugar, 2010), which puts it within the teacher's competence, not the student's.

Table 5
The correlation of frequency of constructivist learning with the frequency of using new media and final grade average

Factors	Grade	Computer	Internet	Mobile phone	Multimedia software	Tablet	Smart phone	Social networks
Personal Relevance	.11**	.11**	.14**	.07	.05	-.02	.09*	.12**
New Media Uncertainty	.08*	.11**	.13**	.07	.15**	.03	.15**	.12**
Critical Voice	.13**	.09*	.11**	.07	.11**	.06	.05	.08*
Shared Control	.04	.12**	.12**	.08*	.15**	.12**	.08*	.11**
Student Negotiation	.14**	.11**	.13**	.07*	.08*	.03	.10**	.11**

Note. *$p < .05$. **$p < .01$.

Spearman's correlation test (Table 5) shows that students with a higher final grade average in school more often assess the personal importance of learning, they doubt certain aspects of the role of new media, they have a critical voice (opinion) and negotiate more often. Furthermore, it shows that the more frequent importance of learning is connected to the more frequent use of computers, the internet, smart phones, and social networks in class. More frequent uncertainty about new media is connected to the more frequent use of computers, the internet, multimedia software, smart phones and social media in class. Critical voice,

that is, more frequent critical thinking, is connected to the more frequent use of computers, the internet, multimedia software and social networks. A more frequent sense of control over the individual's own process of learning is connected to the more frequent use of computers, the internet, mobile phones, multimedia software, tablet computers, smart phones and social networks. More frequent student negotiation is connected to the more frequent use of computers, the internet, mobile phones, multimedia software, smart phones and social networks. These results can be interpreted by the fact that today's students are members of the net generation which means that new media are their everyday tools. Consequently, the results partly confirm the results of other studies (Topolovčan & Matijević, 2016; Topolovčan, Matijević, & Dumančić, 2016).

Conclusion

The results of this research support the following conclusions. Critical thinking, apart from being an integral element of constructivist thinking, is also its most dominant dimension. This implies that it is possible to develop critical thinking with constructivist teaching and learning. Furthermore, it is evident that the place of residence of students (the location of the school) is not an important factor, neither in critical thinking nor in other dimensions of constructivist learning. On the other hand, the gender of students is important: female students are more inclined towards critical thinking, attributing importance to learning and cooperative learning. Although students with a higher final grade average are more inclined to critical thinking and to all the other dimensions of constructivist thinking (except control of learning), it is not possible to claim with certainty that the final grade average itself is significant for such a connection. This is especially so because of the worrying shortcomings of numerical grading. The more frequent use of new media in class, mostly computers, the internet, multimedia software, smart phones, and social networks, is connected to the more frequent constructivist thinking, but also to critical thinking: it is possible to interpret the use of new media as important for constructivist learning, but also for critical thinking, because new media are an integral element of the environment of learning of the net generation. From a theoretical and comparative analysis, a review of recent results of empirical studies, and based on the results of this empirical study, it is evident that critical thinking is an essential element of education. However, it is also indicated that critical thinking cannot be developed through a teacher-centred approach, but rather by means of student-centred classes: constructivist learning, in other words. In this respect, and to obtain more complete results, it would also be desirable to explore critical thinking by comparing primary and secondary education, and then to compare the

students' and teachers' assessments and a range of other factors such as learning styles, desired orientations of learning, computer self-efficacy, etc. Of course, these are the limitations of the current study, but at the same time a recommendation for future research. Based on these results, it is recommended in practice to organise constructivist learning, but also with new media, because in such a way it would be possible, to a certain extent, to develop critical thinking.

Acknowledgment

This study was conducted at the Faculty of Teacher Education of the University of Zagreb as part of the research project 'School for the Net-Generation: Internal Reform of Primary and Secondary School Education' (2015–2017) funded by the Croatian Science Foundation.

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Critical Reflection in the Professional Development of Teachers: Challenges and Possibilities

Marjeta Šarić*[1] and Barbara Šteh[2]

Critical reflection in teachers' professional development has received much attention in the scholarly literature, and there is an overwhelming consensus about its great significance to the quality of teachers' work. Nevertheless, despite the well-established role of reflection, a large gap between the professed goals and the actual reflective practice of teachers remains. The article starts with a short overview of the different definitions of critical reflection in the context of teachers' professional development and then underlines some empirical research findings on the problems that teachers and teacher educators face when putting reflective practice into practice, especially at the deeper and more complex levels of reflection. It continues with a consideration of teachers' qualifications for in-depth reflection as well as the obstacles and challenges facing teachers and teacher educators. The obstacles occur at the level of individual teachers' personal traits and at the level of the context in which reflection is done. Employing an analysis of the obstacles, the authors develop some guidelines on how to support teachers in their attempts at making critical reflection part of their teaching practice. It is crucial for this encouragement not to overlook the principal purpose of teachers' critical reflection; to contribute to new insights, knowledge reframing, and the introduction of such changes in teaching that will support students' learning and the development of the community for the better learning, work, and life of all its individuals.

Keywords: critical reflection, encouragement of critical reflection, professional development of teachers, teacher learning

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Kritična refleksija v profesionalnem razvoju učiteljev: izzivi in možnosti

Marjeta Šarić in Barbara Šteh

Kritična refleksija v profesionalnem razvoju učiteljev je bila v znanstveni literaturi deležna že veliko pozornosti in uveljavljeno je strinjanje glede njenega velikega pomena za kakovostno delo učiteljev. Kljub utrjeni vlogi refleksije pa še vedno lahko zaznamo velik razkorak med deklariranimi cilji in dejansko refleksivno prakso učiteljev. V prispevku najprej predstaviva kratek pregled različnih opredelitev kritične refleksije v kontekstu profesionalnega razvoja učiteljev in poudariva nekaj izsledkov empiričnih raziskav o težavah, ki jih imajo učitelji in izobraževalci učiteljev pri udejanjanju refleksivne prakse, zlasti na globljih in kompleksnejših ravneh refleksije. V nadaljevanju obravnavava vprašanje usposobljenosti učiteljev za poglobljeno refleksijo ter ovire in izzive, s katerimi se učitelji in izobraževalci učiteljev srečujejo. Te ovire so na ravni osebnih značilnosti posameznih učiteljev in na ravni okoliščin, v katerih se kritična refleksija odvija. Na osnovi analize teh omejitev oblikujeva nekaj predlogov, s katerimi bi lahko podprli učitelje pri tem, da kritična refleksija postane sestavni del njihove prakse poučevanja. Pri tem spodbujanju je ključnega pomena, da ne pozabimo na temeljni namen kritične refleksije učiteljev, da prispeva k novim uvidom, prestrukturiranju znanja in k vpeljevanju takih sprememb v poučevanje, ki podpirajo učenje učencev in oblikovanje skupnosti za boljše učenje, delo in življenje vseh njenih članov.

Ključne besede: kritična refleksija, profesionalni razvoj učiteljev, spodbujanje kritične refleksije, učenje učiteljev

Introduction

John Dewey's book *How We Think* (1910) is recognised as the origin of the notion of reflective thinking as a key element in learning. In his later work, Dewey emphasised the importance of reflective thinking in teachers, discriminating between routine and reflective action (Dewey, 1933 in Liu, 2015). When examining teachers' learning, we cannot overlook the ground-breaking work by Donald A. Schön *Reflective Practitioner: How Professionals Think in Action* (1983), in which the author emphasises the ability of teachers to reflect on their teaching as crucial to their professional development. It has had a significant impact on several teacher education programmes in the United States and throughout the world, which set themselves the goal of developing reflective teachers (Boud, 2010; Cvetek, 2003; Handal & Lauvås, 1987; Korthagen, Kessels, Koster, Lagerwerf, & Wubbels, 2001; Liu, 2015; Zeichner & Liston, 1987). In Slovenia, Barica Marentič Požarnik (1987, 1993, 2000) started writing about the teacher as a reflective practitioner as early as the 1980s and 1990s, when she was inquiring into how teachers should be educated and trained for well-thought-out, autonomous, and responsible action, which calls for – especially in conflicts – ethical considerations.

If teachers wish to foster active, meaning-directed, application-directed, self-regulated, and cooperative student learning, their roles become ever more demanding and complex (Vermunt, 2014). It no longer suffices to be able to explain the subject-matter well, to regulate their students' learning, and to motivate them to learn; rather, teachers must take on the new roles of diagnostician, challenger, model, activator, monitor, evaluator, and reflector of students' learning processes (Vermunt, 2014). Based on her literature overview, Liu (2015) emphasises that one of teachers' key competencies is being able to analyse and adapt their teaching to students in specific social, cultural and political contexts, which is especially challenging when teaching those students who are culturally, ethnically, and racially different from the majority of society, an issue that increasingly requires attention in current society. All these demanding and complex roles faced by the teacher require the ability to reflect critically.

Considering the numerous contributions to the topic of teachers' reflection, it is fair to say that it has established itself as a relevant issue in teachers' professional development and that authors seem to be unanimous in perceiving it as vital to the process of teachers' education and further professional development (Boud & Walker, 1998; Cvetek, 2003, 2015; Handal & Lauvås, 1987; Hatton & Smith, 1995; Korthagen et al., 2001; Korthagen & Vasalos, 2005; Loughran, 2002; Polak, 2010; Marentič Požarnik & Lavrič, 2015; Rodgers, 2002; Rupnik Vec, 2006a; Valenčič Zuljan, 2008; Valenčič Zuljan & Bizjak, 2007).

It is, however, questionable whether teachers are adequately trained to follow up on this during their process of education or are provided with adequate conditions in their everyday pedagogical practice (school management's support, enough supervisors, time, etc.) and given support when reflecting on their teaching practice. Expecting that teachers will take time at their own initiative to integrate the process of reflection in their work deliberately is unrealistic. Undoubtedly, there are differences among teachers regarding both their readiness to engage in such reflection, as well as the quality and effectiveness of using reflection in professional learning (Moon, 2004; Van Eekelen, Vermunt, & Boshuizen, 2006). When thinking about the factors of effectively introducing reflection to the professional learning of teachers, the following questions arise: how do teachers and teacher educators understand the process of reflection; why do they embark on the process; how and at what level is reflection done?

In this article, we would like to demonstrate that (although there is unanimity that reflection is crucial to teachers' professional development) researchers and teacher educators, as well as teachers themselves, understand reflection differently. Therefore, we will start by providing a short overview of different definitions of critical reflection and reflective practice and then proceed to several empirical research findings on the problems that educators and teachers have with reflective practice. The aim of this article is to examine current advances in understanding teachers' critical reflection, with a special emphasis on the gap between the high level of theoretical conception and the low level of reflection in teachers' practice. The specific purpose of the review of the empirical research literature is to show that the elaboration of critical reflection at the conceptual level has yet to be followed by the implementation in teachers' everyday practice. We will highlight the obstacles and challenges to the introduction and encouragement of teachers' (critical) reflection and, subsequently, establish some guidelines on the realisation of reflective practice.

Theoretical Frameworks

The definition of critical reflection in the literature on teachers' professional development is based on the work of John Dewey (e.g. Liu, 2015; Moon, 2004; Rodgers, 2002; Van Manen, 1995). Reflective thought, according to Dewey (1933 in Liu, 2015, p. 138), denotes 'active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and further conclusions to which it tends.' At its core lies the idea of systematically and rigorously examining an idea, an experience, a problem, with an attitude of open-mindedness, whole-heartedness, curiosity, and responsibility (Dewey, 1933

in Rodgers, 2002). Since then, authors have defined reflection in a variety of ways, a good example of a single composite definition from different sources is the one by Tripp and Rich (2012, p. 678) who consider reflection 'as a self-critical, investigative process wherein teachers consider the effect of their pedagogical decisions on their situated practice with the aim of improving those practices'.

However, understanding and developing this central idea about the essence of reflection among researchers and teacher educators is different. This can be seen in the variety of models that have been proposed on the basis of Dewey's assumptions. There are long-standing debates and differences in interpreting what the process of reflection should look like in the actuality of teachers' professional lives (e.g. Boud, 2010; Cvetek, 2003; Korthagen & Vasalos, 2005; Liu, 2015; Loughran, 2002; Van Manen, 1995). Reflection is considered as a basis for professional learning because it enables the learning process in and from the everyday classroom experience of teachers. One of the earliest definitions of reflection in the learning process is that it is a tool for the transformation of experience into knowledge (Boud, Keogh, & Walker, 1985). With the promotion of reflection in professional education and teacher learning the conceptualisation of reflective practice has later widened and differentiated. Reflective practice includes several dimensions: besides the cognitive/intellectual dimension – reflection as a rigorous way of thinking – there are also the affective dimension (what the emotional aspect of the experience that is being reflected upon is), the motivational dimension (needs, desires, and goals in that situation), the personal dimension (personality characteristics of a reflective teacher), and the bodily dimension (reflection as an embodied practice) (Boud, 2010; Korthagen & Vasalos, 2009; Rodgers, 2002; Van Manen, 1995). With the intention of fostering teacher reflection as well as furthering research there have been many attempts to construct a model or a framework to determine the type of reflection as practiced by teachers or, more commonly, student teachers (e.g. Hatton & Smith, 1995; Jay & Johnson, 2002; Korthagen & Vasalos, 2005; Larrivee, 2008; Zeichner & Liston, 1987). Most of the models include a category of 'critical reflection', and it is usually considered one of the higher levels of reflective practice.

Here, it should be emphasised that the 'critical' in 'critical reflection' can be understood in two ways. First, in the reflection process, the skills of critical thinking and critical orientation in thinking are used (e.g. curiosity or doubt, intellectual perseverance, etc.). Second, the emphasis on being critical in the reflection process refers to dealing with the issues that are related to the broader social context, power relations in social groups, and values and fundamental social questions (Hatton & Smith, 1995; Liu, 2015; Van Manen, 1995; Zeichner & Liston, 1987). Brookfield (1995 in Cvetek, 2003), who is a proponent of critical pedagogy, explains that the

core of critical reflection lies in uncovering how within the educational process dominant social and economic groups impose their values and beliefs to legitimise their power and authority. Teachers' key task, therefore, is to learn how to recognise the workings of the system and create space for different action.

Zeichner and Liston (1996 in Liu, 2015) point out that teachers' reflection should not be supported as an end in itself without connecting these efforts to making a better society. Accordingly, the authors emphasise that it is important to ask the wider question of whether the results of our teaching are good, for whom and in what ways. Thus, it is essential for both aspects to be intertwined in our understanding of reflection. We should develop the skills of critical thinking to be able to recognise the assumptions that lie in the foundations of our beliefs and actions, to confront different perspectives, develop new alternatives and predict the consequences of actions and simultaneously create contextual sensitivity and reflective scepticism (Brookfield, 1993 in Rupnik Vec, 2006b). At the same time, it should not be forgotten the central purpose of the critical reflection of our own practice – to look for new solutions and paths, to introduce the changes that contribute to the transformation of the community for a better learning, work and life of all individuals.

Critical reflection in the context of education is thus characterised by teachers examining different topics (about themselves as learners and teachers, learning and teaching, social and political implications of schooling), by studying what values lie in the background and making others aware about in what direction epistemological starting points lead them when selecting teaching methods (Loughran, 2002; Rupnik Vec, 2006a; Sockett, 2008). In this process, it is necessary for the examined experience or problem to be restructured and reframed (Korthagen, 2001a; Schön, 1983), from this aspect creating new mental structures in knowledge has a key role (Evans, 1992 in Cvetek, 2003). Furthermore, as already emphasised, the crucial part of critical reflection is establishing critical awareness, that is, recognising the political nature of the profession through which the power relations of a society are revealed and maintained (Hatton & Smith, 1995).

Liu (2015) underlines that there are differences between teacher educators and teachers in understanding critical reflection. To contribute to greater conceptual clarity and upgrade existing definitions, which may occasionally highlight only specific aspects of critical reflection, the author proposes the following complex definition of critical reflection, which – in addition to the processes that take place during reflection and the studied content – includes the ultimate purpose, which is often lacking in practice:

> Critical reflection is a process of constantly analysing, questioning, and critiquing established assumptions of oneself, schools, and the society

> about teaching and learning, and the social and political implications of schooling, and implementing changes to previous actions that have been supported by those established assumptions for the purpose of supporting student learning and a better schooling and more justice society for all children. (pp. 144–145)

It is a goal that is difficult to achieve; nevertheless, it is important, to use Bečaj's (2009) words, that it defines our direction and, in that light, we judge the manners of encouraging reflection and the very process of the reflection of student teachers, teachers, and teacher educators. The main question is whether, in the given circumstances, the process of critical reflection is encouraged in the best possible way, contributing to new insights, knowledge reframing and the introduction of the changes in teaching that will support students' learning.

Reflective Practice: Between Analytical and Holistic Approaches

Approaches to performing and encouraging teachers' professional reflection vary. Some approaches are more systematically and analytically oriented, while others are more holistic and intuitive. Systematic and analytical approaches to reflection are typified by objectivity, personal distance, and observation separated from judgement. The models intended to foster reflection are clearly structured, often into hierarchical levels or multilevel models (e.g. Hatton & Smith, 1995; Jay & Johnson, 2002; Larrivee, 2008; Zeichner & Liston, 1987). The levels typically range from more superficial to deeper levels of reflection, for example, the typology by Jay and Johnson (2002), which includes descriptive, comparative and critical dimensions with guiding questions to encourage reflection at different levels. Such models can greatly benefit studies of reflection and the introduction of students to reflective practice. Both students and many teachers can hardly imagine what good reflective practice means. Describing individual levels of reflection allows teacher educators to illustrate expected activities during the reflective process. Multilevel models are also practical when providing feedback on reflection depth, since educators can take the characteristics of individual reflection levels as assessment criteria. An instance is the analytical step separating interpretation from a detailed description of a working/learning situation. The description is normally followed by the analysis of hypotheses and alternative possibilities, a view on the issue from different perspectives, which is all accompanied by the awareness of the sociopolitical context.

In contrast, there are holistic intuitive approaches that are philosophically and epistemologically founded in phenomenology, existentialism (Van Manen, 1977, 1995) and that reveal the influence of gestalt psychology (emphasising the significance of holistic images, including (in addition to conscious subject-matter) unconscious elements, and co-depending on needs, desires, values) (Korthagen, 2001b) as well as Eastern Buddhist thought (Tremmel, 1993) and the notion of presence (Meijer, Korthagen, & Vasalos, 2009; Rodgers & Raider-Roth, 2006). The goal of holistic approaches is raising awareness of implicit knowledge, reframing of existing schemes, confronting paradoxes, which enables more flexibility in unpredictable situations. These approaches typically include non-linguistic ways of reflection (e.g. the use of photos, metaphors, drawings); also, strong personal investment (fears, resistance) make the role of psychological security crucial (Korthagen et al., 2001). Holistic approaches are more challenging when applied to studying and encouraging reflection, because the non-linguistic and holistic features of a learning experience are not easy to formulate or express. Moreover, they do not lend themselves to exact and unequivocal assessment procedures, since there is no easy way to determine the 'progress' from one level to another. Besides, the pressures of assessment (of student teachers) or a demand for quick solutions (for teachers in practice) do not support exposing and confronting oneself with one's own perplexities and paradoxes that the holistic reflective processes entail.

Van Manen (1995) writes on teachers' practical knowledge and pedagogical tact, which he defines as 'an active intentional consciousness of thoughtful human interaction' (p. 43). According to Van Manen (1995), tactful action is instantaneous, and pedagogical tact likewise cannot be reduced to stages in a sequential process or a set of skills and techniques. Views of reflection as fostering doubt and criticism of one's own actions may turn out to be rather one-sided if they are understood as constant questioning. Acting in accordance with pedagogical tact, however, requires confidence in one's actions in unpredictable and ever-changing situations. Like Van Manen (1995), Korthagen (2001b) and Tremmel (1993) also stress the one-sidedness of the glorification of the rational aspects of reflection. All the authors mentioned argue against the strict divide or exclusive primacy of one or the other approaches to reflective practice; they incisively argue for the importance of both so that one-sidedness could be avoided. Korthagen (2001b, p. 237) states: 'I believe that especially the integration of both types of reflection (the mirroring of non-rational processes and rational analysis) would be beneficial, because they are directly related to the two different ways in which the teacher's consciousness operates.' The authors advocate a better balance between the two approaches and consistent support for teachers in their professional work.

Critical Reflection in (Student) Teaching Practice: Where Has the 'Critical' Gone?

The role of reflection in teachers' professional development is often written and spoken about. However, it remains an open question of whether during teacher education and in-service teacher training teachers are prepared for the critical reflection on their own teaching practice, which they seem to perceive as an indispensable part of their professional development. Zeichner (1992 in Liu, 2015, p. 137), finds 'that there is much research on preparing reflective teachers, but most of it focuses on prospective teachers' perceptions and self-reported results, with little consideration of their reflection in terms of process or the presence (or lack) of a critical nature'. Let us now consider some research findings that show what levels reflection can reach and what its quality may be.

Mansvelder-Longayroux, Verloop, Beijaard, and Vermunt (2007) studied student teachers' learning activities and self-regulation of learning through the analysis of their portfolios by looking for the presence of six types of learning activities: recollection, evaluation, analysis, critical processing, diagnosis, and reflection. The results showed that recollecting and evaluating activities dominated overwhelmingly (93% of the 1,778 learning activities identified in 39 portfolios). 'Recollecting', in this case, meant that an event was described that had already occurred. The participants described the events that had occurred, for instance, during school classes and evaluated them (e.g. that they went well, wrong, badly, etc.), even before they critically reflected on them from different perspectives (what had led to certain actions, how certain actions influenced the achievement of learning goals, how the participants experienced them, etc.), which are the key characteristics of critical reflection (Korthagen & Vasalos, 2005). Mansvelder-Longayroux et al. (2007) determined that the learning activities that referred to a deep approach and self-regulation in learning (analysis, diagnosis, critical processing, or reflection of or on those events) only rarely (7%) emerged in the student teachers' portfolios.

A similarly low level of reflection was established by Polak (1995), having examined student class-teachers' practical-work diaries. In their thoughts on practical-work experiences, the students remained at the level of reporting. Cvetek (2003) similarly assessed future English-teachers' qualifications for critical reflection on their teaching on the basis of their written reports on practical pedagogical work. The author asked the students to describe and evaluate some of the so-called 'critical events' from their practical work. He classified the students' (n = 49) responses according to the hierarchical model of content levels of writing proposed by O'Hanlon: (1) the level of reporting, (2) the level

of interpretation, (3) the level of the consequences or reflection, (4) the level of the integration of the personal and the professional. The author determined that 24% of the reports were at the level of reporting, 57% of them reached the level of interpretation in certain parts, only 18% of the reports reached the level of reflection, and none were at the integrational level.

Valenčič Zuljan and Bizjak (2007), in contrast, did not focus on the quality of reflection by future teachers; rather, they studied the qualifications of teacher mentors to reflect on their own practice and to encourage reflection in their trainees. Using qualitative analysis of diary entries categorised according to the taxonomy of reflective thinking by Handal and Lauvås (1987 in Valenčič Zuljan & Bizjak, 2007) as being at the level of immediate practice, the level of arguments or the level of ethics, they established that mentoring consists mainly of activities at the first level of reflection. They could not classify any of the entries as belonging to the third level, which includes the ethical dimension of reflection. Such teacher mentors are therefore not good role models to introduce their younger colleagues to reflective practice: they tend to give advice without encouraging the trainees to highlight their teaching from different aspects.

Bakkenes, Vermunt, and Wubbels (2010) scrutinised the learning activities and learning outcomes of experienced teachers, which they divided into six categories. In this study, the teachers most frequently reported (1) reflecting on one's own teaching practice and/or students' learning or functioning (33% of all the 735 reported learning activities), and (2) experimenting, when purposefully trying out something new in practice and some form of reflection on it (32%). More rarely, they reported (3) getting ideas from others (15%), (4) experiencing friction, noticing a discrepancy between what one expects or wants and what happens in class (15%), (5) struggling not to revert to old ways (5%), and (6) avoiding learning (1%) (Bakkenes et al., 2010). Teachers do emphasise the process of reflection as crucial to their learning, but what its quality is and how they may be supported in their critical reflection remains uncertain.

Marentič Požarnik (2013) analysed a number of the reports that were produced for the clear and well-managed project of reading literacy,[3] which included numerous schools, and came across certain weaknesses related to monitoring and explaining the process. This indicates the part connected to the reflection on the measures and activities, and again it turns out that only rarely did more careful or critical considerations of whether the activities followed the plans, what influenced their (in)effectiveness, students' responses, why some measures were more and others were less effective, whether there

3 The project of reading literacy is the responsibility of a team at the National Education Institute Slovenia headed by Dr Fani Nolimal (Marentič Požarnik, 2013).

were any doubts, dilemmas, etc. occur. The descriptions generally clearly and convincingly documented actions and events, but in-depth critical reflection was lacking. Thus, the way teacher educators could encourage student teachers' and teachers' reflective practice into a more sophisticated, critical practice that will, in turn, transform their learning, which will lead to changes in their understanding, attitudes and actions remains an open issue.

Challenges and Guidelines Regarding Fostering the Critical Reflection of Teachers

In supporting teachers to engage in the process of critical reflection, a number of challenges are encountered. The ever more popular and apparently self-evident teachers' reflective practice also reveals a simplified understanding of critical reflection (Liu, 2015). Moon (2004, p. 88) lists a selection of one-sided views of what reflection is, which may limit further understanding and transition to in-depth reflection: 'emotion is central to reflective processes', 'reflection is about "my own" processes (i.e., always in the first person)', 'some people cannot reflect'. Later, it will be seen that emotions can play highly diverse roles in the process of reflection, that it is positive if someone can help us examine ourselves in the mirror, looking at what our attitudes towards specific phenomena are, etc., and that reflection is not just a function of the individual's level of experience, but that our readiness for the process of reflection differs from situation to situation, that it is not always a conscious activity and may not be done willingly when required.

Boud and Walker (1998) have identified 'a number of problems that have arisen from the application of ideas about reflection in higher education courses' (p. 192), such as reflection as recipe-following, reflection without learning, the belief that reflection can be easily contained (when students are put in considerable distress and tensions when exploring dilemmatic or ethically dubious situations), incongruence with a formal learning context (assessment issues), or intellectualising reflection. Other problems are inappropriate disclosure, uncritical acceptance of learners' experiences, going beyond the expertise of the teacher, and excessive use of teacher power. The authors suggest that the influence of context is an important factor in facilitating reflective practice that is always embedded in a particular social setting with a set of cultural practices. In addition to context, Boud (2010) later adds the importance of personal characteristics, dispositions, motives, feelings, ideas, and conceptions about oneself and the world, which shape the way reflective practice is enacted.

Let us take a closer look, first, at some personal traits that have an impact on how critical reflection is done. Despite general and widely accepted

expectations for teachers to be engaged in life-long professional learning, there are considerable differences among teachers in their motivation to learn; not all teachers want to inquire into the potential significance or meaning of their everyday work experience (Rodgers, 2002; Van Eekelen, Vermunt & Boshuizen, 2006). In a small-scale qualitative study with 15 experienced teachers, Van Eekelen et al. (2006) distinguished three groups of teachers: those who did not see the need to learn, those who wondered how to learn but wanted a straightforward solution or the 'right' answer and, finally, the teachers who were eager to learn. Selkrig and Keamy (2015) studied collegial conversations among educators, and they noticed how difficult it is to go beyond surface-level discussions to genuine collaboration in order to deepen professional learning. Curiosity, willingness to wonder, open-mindedness, and desire for growth have all been mentioned as motives for engaging in meaningful learning since Dewey (in Rodgers, 2002; also, Korthagen et al., 2001; Selkrig & Keamy, 2015).

Mezirow (1990 in Liu, 2015, p. 145) maintains that critical reflection includes questioning one's self-conception and such challenges are always fraught with threat and strong emotions. It is not an easy task to cope with the emotions that accompany repetitive thought, because these repetitive self-thoughts can be more or less (non)constructive (Watkins, 2008). This distinction is conceptualised in psychological literature as the difference between reflection and rumination (Takano & Tanno, 2009). Ruminative thought is oriented more towards perceived threats and injustices to one's self and is related to clinical disorders, depressive symptoms, intrusive thoughts and worry, while the reflective thought is more open, playful and exploratory, and as such leads to accurate self-perception (Trapnell & Campbell, 1999). Considering these differences in the light of fostering reflective thought processes, it is, therefore, important to be aware that not all self-focused thought is constructive; moreover, some thinking patterns can even lead to negative consequences for the people inclined to ruminative thinking. Knowledge of the workings of one's own mind is, therefore, an important part of critical reflection, and Tremmel (1993) emphasises the habit of mind (especially paying attention and mindfulness) as an important feature of reflection. Similarly, Rodgers (2002) explains Dewey's notion of directness in reflective thought as being free from self-absorption.

As mentioned above, another challenge in the practice of critical reflection is its emotional dimension. Emotions can be involved in the process of critical reflection in several ways (Moon, 2004). First, they are often the reason for engaging in reflection – a puzzling event that has left a teacher with unresolved feelings of anger, disappointment, or wonder that mobilises her/him to start exploring the event and looking for ways to understand it (Rodgers, 2002;

Šarić, 2015). As such, the emotions that started the process of inquiry can be the content of reflection among the other features of the perplexing learning experience (Korthagen & Vasalos, 2005; Moon, 2004; Šarić, 2015). Second, the process of reflection can become a source of an emotional experience, when we face the less well-known parts of ourselves or when the foundations of our identity are shaken up due to the reframing of our understanding. Finally, the result of reflection is such that it can influence the teacher's subsequent emotional experience and regulation of emotions (Moon, 2004; Šarić, 2015).

However, the individual's characteristics do not have an impact on teachers' reflective practice in isolation, but always within a certain context (Boud & Walker, 1998). Dominant cultural assumptions and the practices of an educational organisation, particular disciplinary and professional contexts, the micro-contexts of sub-groups – all these define the frame within which the process of reflection takes place. Vermunt (2014) asserts that the most direct and important contextual factor that influences teachers' learning is the type of the learning environment. Studies reviewed by Vermunt (2014, p. 90) reveal that 'organised learning environments (peer coaching, collaboration in teams) turned out to elicit qualitatively better learning activities and learning outcomes than informal workplace learning'. In a study of collaborative inquiry more specific to the area of critical reflection, Pareja Roblin and Margalef (2013) confirmed that those teachers who acknowledged and embraced the dilemmas from their common work, were taking 'critical perspective on their educational beliefs and practice, thereby strengthening their critical reflection' (p. 30).

Another contextual factor is the way in which the reflective process is encouraged in the context of an educational programme. We should not overlook that training for reflective teaching starts at university and that it is only possible in the education that accepts theoretical and practical aspects as equal and as interactively interlinked. It allows student teachers to use their experience and critical thinking to test existing theories and to formulate new theories and knowledge, which can become the foundation for further action in practice (Cvetek, 2003; Handal & Lauvås, 1987) or in the so-called realistic approach to teacher education (Korthagen, 2005, 2017; Korthagen et al., 2001). It is necessary for the development of critical reflection to become part of the curriculum, to be an important goal in teacher education. There is a certain danger, of course, that it may become just another obligation to fulfil (a reflective diary or lesson analysis to write) or another course to pass. It should not be forgotten that encouraging learning and reflection can oppose the controlling function of assessment (Šteh & Šarić, 2016). For instance, students are to be encouraged to reflect on their own learning in order to shed light on their strong and weak

areas, but they feel uneasy about disclosing their thoughts and emotions, having summative assessment in mind, which will require them to prove that they have mastered a specific field. They are afraid to show their weaknesses during the process of reflection, since they wish to impress the teacher during the process of learning. Hobbs (2007) highlights how the pressure to perform well undermines genuine and authentic reflection. She proposes careful consideration in introducing reflective activities in the programmes and courses, taking into account the principles of gradualness, active involvement of student teachers, and postponing or refraining from the assessment of reflective practice.

It is crucial to be aware that critical reflection cannot be reduced to a mere set of prescribed steps and techniques, nor can it be conducted at a merely rational level (Korthagen, 2001b; Van Manen, 1995). We should consider that student teachers' or teachers' learning processes are multi-dimensional (in each person the cognitive, affective and motivational sources of behaviour are intertwined, and embedded in a social context), multi-level in nature and often unconscious (Korthagen, 2017).

The challenge for teacher educators lies in how to make critical reflection part of their own teaching practice and how to become models of reflective practice for student teachers. Korthagen (2017) emphasises that, when fostering professional development, it is necessary to link the professional and personal aspects of learning and that we usually neglect the deeper levels: professional identity and mission. The task of educational organisations, especially those that educate teachers, is developing a culture that will permit and welcome questioning one's actions, reasons, views and looking for solutions for always-changing dilemmas and challenges that everyday learning (life) situations bring. Student teachers' as well as (later) teachers' autonomous action should be enabled and supported. This, however, is not possible in the environments that require constantly proving oneself and that determine and reflect the quality of teachers' learning and work in nothing but a series of measurable indicators (Tickle, 2005).

Conclusion

We have analysed in some detail the various connotations and characteristics of critical reflection from Dewey onward, created a number of models to develop critical reflection, and defined the conditions for its quality enactment. Nevertheless, a large gap between the professed goals and the actual reflective practice of teachers remains. There are no quick fixes with regard to encouraging teachers' professional development or to developing critical reflection. Korthagen (2017) summarises the conclusions of different authors and

points out that an inconvenient truth may be that effective professional development is primarily value-based, much more open-ended and, to a certain degree, more unpredictable than traditional approaches, as it often requires deep cultural change.

We have derived several guidelines for introducing and fostering (student) teachers' reflection based on the challenges discussed previously. Firstly, in introducing reflection, we need to consider the influence of the contextual factors, such as organisational culture, educational programme, assessment issues, etc. Secondly, as teacher educators we encourage reflective practice when we consider individual characteristics of (student) teachers (motivation for reflection, critical thinking skills, etc.). By implementing reflective practice, we should not undermine the motives that are beneficial for critical reflection: curiosity, willingness to wonder, open-mindedness, and desire for growth. Thirdly, it is important to differentiate between constructive and nonconstructive self-focused thought. Lastly, being attentive to the emotional dimension of reflective practice supports students in their vulnerability and simultaneously encourages them to follow the abovementioned motives to explore the complexities of their own teaching practice.

Critical reflection is only possible in the environments in which doubt about certain views and actions is allowed and where individuals are willing to doubt and broaden the limits of their comfort zones. However, this requires mutual support and a degree of confidence – if nothing else, the confidence that individuals can learn better and make headway. At the same time, the central purpose of critical reflection must not be forgotten – to look for new solutions and paths, to introduce the changes which contribute to the transformation of the community for the better learning, work and life of all its individuals.

Acknowledgements

The authors acknowledge the financial support from the Slovenian Research Agency (research core funding No. P5-0174, Pedagogical and andrological studies – Learning and education for a good quality life in community).

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Encouraging Reflection and Critical Friendship in Pre-service Teacher Education

Branko Bognar*[1] and Irena Krumes[2]

Reflectivity is an important professional competence of contemporary teachers. In order to explore how to encourage students' reflection, we conducted a two-year action research project impelling them to become mutual critical friends. For critical friendship communication and other project activities, we utilised Moodle – an online learning management system. On the basis of the analysed data that were gathered at the end of each action research cycle, we determined that the students felt comfortable in the role of critical friends and that critical friends' reflections were particularly pleasant for them. They experienced the comments of their critical friends as friendly, encouraging, useful, specific, interesting, detailed, positive, professional and clear. The majority of students (91%) think that the critical friendship discussion should be continued within the course Correlated-integrated systems in Croatian language teaching, and 85% of them suggest introducing this approach in other teachers' education courses. We determined that the technical mode of reflective thinking prevails in the students' correspondence. The practical or contextual level could rarely be observed while critical reflection was completely absent in 11 of 14 discussions. Reflective thinking of students (future teachers) should be fostered from the beginning of their studies within various courses, particularly in the pedagogical and methodological ones. To encourage their students to be critically reflective, university teachers should embrace reflective thinking by becoming critically-reflective practitioners and conducting action research in their teaching practices.

Keywords: action research, critical friendship, critical reflection, reflection in teacher education, reflection through online discussion

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Spodbujanje refleksije in kritičnega prijateljstva v začetnem izobraževanju učiteljev

Branko Bognar in Irena Krumes

Reflektivnost je pomembna strokovna kompetenca sodobnih učiteljev. Z namenom ugotavljanja, kako spodbujati refleksijo študentov, smo izvedli dveletno akcijsko raziskavo, v okviru katere smo študente spodbujali, da prevzamejo vlogo kritičnih prijateljev. Za komunikacijo med kritičnimi prijatelji in za druge projektne aktivnosti je bil uporabljen Moodle – spletna učilnica oz. učno orodje. Na osnovi analiziranih podatkov, ki smo jih zbrali na koncu vsakega akcijsko raziskovalnega cikla, smo ugotovili, da so se študentje dobro počutili v vlogi kritičnih prijateljev in da so bile refleksije kritičnih prijateljev za njihovo učenje spodbudne. Komentarje kritičnih prijateljev so izkusili kot prijateljske, spodbujajoče, uporabne, konkretne, zanimive, podrobne, pozitivne, strokovne in jasne. Velika večina študentov (91 %) je menila, da bi se morala razprava kritičnega prijateljstva nadaljevati v okviru predmeta sistemi korelacije in integracije pri pouku hrvaškega jezika, 85 % pa jih je predlagalo uvajanje tega pristopa v druge predmete pedagoškega izobraževanja. Ugotovili smo, da v komunikaciji med študenti prevladuje tehnična raven refleksije. Praktično ali kontekstualno raven smo zasledili redko, medtem ko je bila raven kritične refleksije popolnoma odsotna v enajstih izmed štirinajstih razprav. Reflektivno mišljenje študentov (bodočih učiteljev) bi morali spodbujati od začetka njihovega študija v okviru različnih predmetov, zlasti v okviru pedagoških in specialnodidaktičnih. Da bi visokošolski učitelji spodbudili svoje študente h kritični reflektivnosti, bi morali sami postati kritično-reflektivni praktiki in v okviru svojega poučevanja izvajati akcijsko raziskovanje.

Ključne besede: akcijsko raziskovanje, kritično prijateljstvo, kritična refleksija, refleksija v izobraževanju učiteljev, refleksija v okviru spletne razprave

Introduction

Reflective thinking in education has its theoretical roots in Dewey's seminal work *How We Think*. He asserts that 'active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends, constitutes reflective thought' (Dewey, 1910, p. 6). Thus, according to Dewey, reflective thinking does not accept any thought or belief without questioning different options. There is no consensus regarding a distinction between critical and reflective thinking. Some authors use the terms synonymously (Porntaweekul, Raksasataya, & Nethanomsak, 2015). Some hold critical thinking as a type of reflective thinking (Ennis, 1993), while others claim that critical thinking represents a higher level of reflective thinking (Phan, 2010).

However, the uncritical approach is based on the assumption that, in one's social as well as professional life, it is possible to predict most phenomena and prepare appropriate procedures for successfully controlling them. In a static society, with slow changes, such a presumption sounds somewhat meaningful. In a postmodern, democratic, pluralistic, fast-changing society, *reflective thinking* is essential.

Shandomo (2010, p. 103) thinks that 'reflective thinking leads educators to act deliberately and intentionally rather than randomly and reactively'. It is hard to develop reflective thinking in future teachers if they are expected to repeat the 'right' answers they learnt from their teachers or read in literature. To develop reflectivity, it is important that students have sufficient opportunities to think on their own. Their professors could help them only if they developed reflective thinking themselves, particularly critical thinking (Choy & Oo, 2012). Unfortunately, Schön (1987) determined that *technical rationality* prevails rather than reflective practice at the university. It is common for this approach to firstly teach students 'the relevant basic science, then teach them the relevant applied science, and finally, a practicum in which students are presumed to learn to apply research-based knowledge to the problems of everyday practice' (Schein, 1973, as cited in Schön, 1987, p. 8). This gives future teachers the false impression that universal teaching methods do exist, and they simply must learn and apply them in practice. If a problem occurs, it is mostly attributed to the student's lack of knowledge in properly applying teaching methods. Very rarely are the observed problems carefully analysed with an aim to better understand the specific situation in which they appeared in order to find the most appropriate, rather than universal solutions.

Instead of technical rationality, Schön (1983) emphasises *reflective*

practice, in which practitioners reflect on spontaneous solutions they devised in specific professional situations. A teacher who reflects-in-action:

> …becomes a researcher in the practice context. He is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case. His inquiry is not limited to a deliberation about means which depends on a prior agreement about ends. He does not keep means and ends separate, but defines them interactively as he frames a problematic situation. (Schön, 1983, p. 68)

The model of reflectivity devised by Argyris and Schön considerably contributed to the affirmation of the reflective approach in education and other professional fields. The main purpose of their reflective model was enabling higher professional effectiveness. They stated 'we cannot be effective over the long run unless we can learn new ways of managing existing governing variables when conditions change. In addition, we cannot be effective unless we can learn new governing variables as they become important' (Argyris & Schön, 1975, p. 24). However, social problems cannot be reduced to the issue of the professional effectiveness of practitioners and their organisations. Social problems have deeper roots. Habermas believes that the root of social irrationality is that the majority of people are not able to participate consciously in the creation of history.

> A rationalization of history cannot therefore be furthered by an extended power of control on the part of manipulative human beings, but only by a higher stage of reflection, a consciousness of acting human beings moving forward in direction of emancipation. (Habermas, 1974, p. 276)

The higher level of reflection is enabled by critical reflection through questioning the elementary character of capitalistic society (Brookfield, 2010) in which capital plays the key role, not people (Horkheimer, 1989). The main purpose of critical reflection 'is the allowing of more control and choice in individual lives through the exposure of dominant social assumptions' (Fook & Askeland, 2006, p. 53). Unlike reflective practice that stays on the level of finding effective ways for improving the functioning of the organisation, critical reflection questions the socio-political context in which the practice is carried out. It challenges taken-for-granted beliefs, values and dominant ideologies (Brookfield, 2005; Vince & Reynolds, 2009), power relationships (Fook, 2015), and highlights the possibilities of the emancipation and the social changes (Habermas, 1974; Mezirow, 2000). In schools 'reflective teachers are skilled at analyzing micro-level classroom contexts…' while 'critically reflective teachers have an elevated sense of social responsibility to address and tackle inequities

in and out of their classrooms to ultimately situate their individual actions and beliefs within larger sociopolitical contexts' (Hernandez & Endo, 2017).

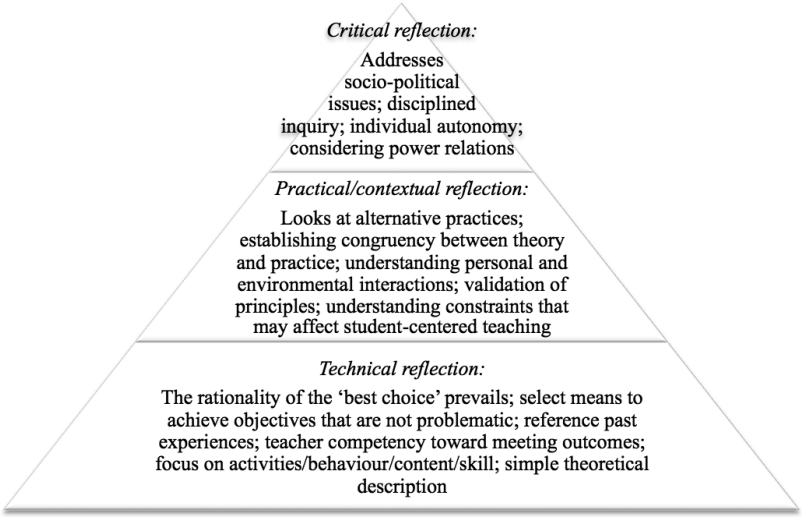

Figure 1. Modes of reflective thinking (van Mannen, 1977; Taggart & Wilson, 2005)

The reflectivity of practitioners can be realised on several levels. Starting from Habermas's (1971) three categories of knowledge and human interests (technical, practical, and emancipatory), Van Mannen (1977), made a distinction between technical, practical, and critical levels of reflectivity (Figure 1). However, it is possible to omit the reflective level, i.e. the absence of thorough thinking and comprehending of the relevant terms, theories and teaching practice.

On the technical level, teachers do not inquire about aims. They only evaluate 'the effectiveness of their practice in achieving aims' (Carr & Kemmis, 1986, p. 30). Practical reflection implies examining complex conditions in which practice takes place. On this level, reflection means the reconciliation of theory and practice. However, practical reflection deals merely with what occurs in a specific professional context. In contrast, critically-reflective teachers are aware that the education system is just one of the social structures that often serves 'to reproduce economic inequality and to distort personal development' (Bowles & Ginits, 2007, p. 66). Critical reflection is focused on the disclosure of myths, that is, dominant ideologies supported in schools to legitimate social inequalities (Haralambos & Holborn, 2002). In addition to his critique of ideology, Brookfield (2005) finds important to contest hegemony. He considers that

hegemony to be 'the process by which we learn to embrace enthusiastically a system of beliefs and practices that end up harming us and working to support the interests of others who have power over us' (p. 94). To be able to take a stand it is necessary that adults critically examine everything they have previously uncritically accepted in the course of their socialisation. Mezirow (2000) suggests that adult education in democratic societies should enable students to 'become more aware of the context of their problematic understandings and beliefs, more critically reflective on their assumptions and those of others, more fully and freely engaged in discourse, and more effective in taking action on their reflective judgments' (p. 31).

It is possible to utilise various tools and techniques in written and spoken form to encourage students' reflectivity. These include *critical incident technique* (Brookfield, 2006; Griffin, 2003), *journaling* (Boud, 2001; Scales, Briddon, & Senior, 2013), *logs and diaries* (Nadin & Cassell, 2006; McNiff & Whitehead, 2010), *(electronic) portfolios* (Lewis, 2015), *on-line discussions* (Tsang, 2011; Whipp, 2003), *reflective or critical conversations* (Chambers, Colombo, Askland, & Clarke, 2003), *narratives or stories* (Craig, 2009), and *creative representations* like *poetry, pictures, and videos* (Smith, 2010). Fook and Gardner (2006) point out that the tools and techniques are not as important in developing reflectivity as the organisational culture is. Organisational culture comprises norms, values, customs, history, relations between people, climate, embedded skills, symbols, rituals and celebrations (Schein, 2010; Stoll, 1998). In order to become prominent reflectivity has to permeate all core elements of the organisational culture. This implies a shared sense of its importance and the knowledge of how to use it on a daily basis. Therefore, reflectivity is not an occasional activity; it is more a 'part of the routine, normative demands of students' (Gay & Kirkland, 2003, p. 184).

In implementing the reflective approach in prospective teachers' education, it is possible to apply critical friendship. Costa and Kallick define a critical friend:

> as a trusted person who asks provocative questions, provides data to be examined through another lens and offers critiques of a person's work as a friend. A critical friend takes the time to fully understand the context of the work presented and the outcomes that the person or group is working toward. The friend is an advocate for the success of that work. (Costa & Kallick, 1993, p. 50)

Critical friendship could be established in face-to-face communication after finished lessons, as well as by using on-line applications. Conducting distant, critical friendship on web-based forums is particularly convenient (Vidović & Kuharić Bučević, 2013). In that way, critical friends do not lean only

on their memories, but can integrate data from different sources into their discussions.

To support the reflective practice of practitioners, it is important to establish cooperative conditions and to achieve open and well-intentioned communication about problematic aspects of practice. MacKnight (2000) points out: 'It is unlikely that students will succeed in substantive, reflective exchanges if they have not learned to carry on similar conversations elsewhere.' He suggests starting with 'some off-line activities that will give students a better understanding of the collaborative learning and communication process' (p. 39). The reflective communication could be continued online. To encourage critical reflection, it is important to create conditions for participants to have the opportunity in smaller groups to freely discuss their own experiences within a broader social context (Fook & Askeland, 2007). Discussions on the forum can enable this if the dominant role of teachers is abandoned (Harrington & Hathaway, 1994).

Method

In this study, we applied action research as a research design. Furthermore, we embraced the ideas of critical action research (Kemmis, McTaggart, & Nixon, 2014) in which teachers attempt 'to organize themselves into communities of researchers dedicated to emancipatory experience for themselves and their students' (Kincheloe, 1995, p. 74).

The inquiry was conducted within the course *Correlated-integrated systems in Croatian language teaching* as a part of the university study programme for teacher education during two academic years (2014/15 and 2015/16). Students attend this course in the second semester (April to June) in their final (fifth) year of university studies. Every second week, students had four lessons (4×45 minutes). The second author of this article was a teacher and co-researcher while the first author participated in administering the Moodle course (http://pedagogija.net) and in collecting and analysing data.

We initiated this action research due to our dissatisfaction with the students' reflections on their own lessons in the course *Practicum in teaching methodology of the Croatian language*. Students attend this course in their fourth year of studies. A student who taught a lesson must comment on it, and then her or his colleagues offer their reflections. We observed that they usually hesitate to openly discuss observed problems to avoid spoiling good relationships. Some of them are not able to observe problems because of a lack of theoretical knowledge and some only repeat the professor's comments. All of that indicated the necessity for the improvement of students' reflective thinking.

The reflective approach that we intended to use in this research required the teacher to introduce changes into her teaching practice and to encourage students to study literature independently in order to participate in online discussions presenting well-reasoned and supported arguments. There were also changes in the use of Moodle, which was previously used as a file repository for the assigned literature for students. Instead of learning that was based on reading literature, we decided to enable students to use online forums for their reflective discussions before and after workshops that they planned and conducted working in teams. It was feasible since the open source learning management system Moodle enables the social constructivist online learning which puts 'a focus on collaborative discourse and the individual development of meaning through construction and sharing of texts and other social artefacts' (Dougiamas & Taylor, 2003).

There are several reasons why we chose online discussion forums to encourage students' reflectivity. First, in the classroom teaching, there is a lack of time to enable all students to participate in face-to-face reflective discussions. We were acquainted with the research results which showed that, compared to face-to-face discussions, 'participants in networked collaboration could use more deep-thinking strategies like exchanging more ideas, proposals, and perspectives. Conversational analyses showed that students felt freer to have reflective time and to take issue with different perspectives' (Cho & Schunn, 2003, p. 247). In addition, we considered that the members of Generation Y (Tsang, 2011) or 'digital natives' (Prensky, 2001) should be given the opportunity to learn in their natural environment. Finally, the first author had previous experiences in organising online discussions (Bognar, Gajger, & Ivić, Constructivist e-learning in higher education, 2016) and creating online communities of critical friends (Bognar & Mompoint-Gaillard, 2017).

Our intention was to affirm *cooperation, creativity*, and *reflectivity* in our practice. The reason for accentuating those values lies in the fact that the quality of the teachers depends considerably on creating an organisational culture in which they collaboratively reflect on the impacts of their practice on students' learning (Hattie, 2015). They take time to create and 'test new teaching methods and to receive follow-up support and coaching in their classrooms as they faced problems of implementing changes…' They participate in the reflective communities of practice that leads them 'to deprivatise their practice and gain feedback about their teaching from colleagues' (Ingvarson, Meiers, & Beavis, 2005, pp. 15–16). Therefore, we did not expect students to follow prescribed pedagogical scenarios; on the contrary, it was our intention to encourage their cooperatively devised creative solutions while engaging their reflectivity. The main purpose of our action research was *encouraging reflectivity in students impelling them to*

become mutual critical friends in the online discussion forums. It implied encouraging cooperative learning, students' creativity and their reflectivity (Table 1).

Table 1
Aims and criteria of action research

Aims/values	Criteria
Encouraging cooperative learning	Students working in teams independently define workshop topics and plans, and realise them
Fostering creativity in students	Students conduct original teaching activities that are appropriate for workshop topics
Encouraging their reflectivity	Most students can write their comments in the online discussion forums at the technical level In most teams, a practical level or reflection is observed, and in some discussions critical reflectivity is determined

At the beginning of the semester, we discussed our action research plan with each group of students. In addition, we asked them to confirm their willingness to participate and to give written consent for photos and videos of their workshops to be taken and published on Moodle, YouTube, and in a scientific publication. We also explained to them how to use Moodle for critical friendship. Since students had already participated in a similar activity that was organised in the course *Methodology of Pedagogical Research* in the previous semester, most of them did not have any problem using Moodle. In the first action research cycle, all 27 students took part in the discussions before conducting a workshop, while 23 took part in the discussion after the workshop. The next year, 24 of 26 students enrolled in Moodle while in the second round of discussion there were 22 participants.

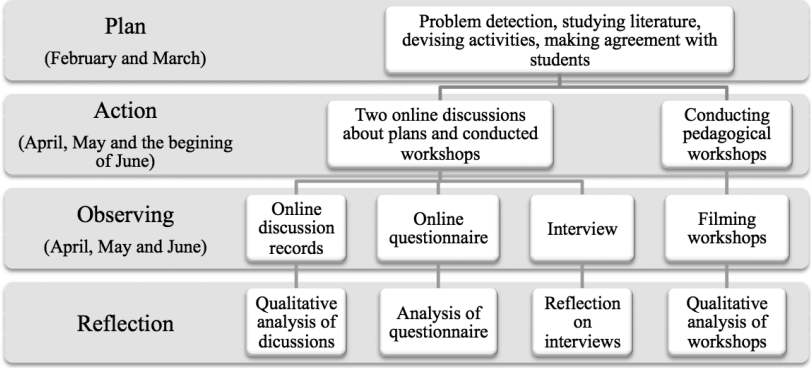

Figure 2. Action research stages

Our action research project consisted of the usual stages: planning, action, observing and reflection (Carr & Kemmis, 1986; Kemmis, McTaggart, & Nixon, 2014). These stages were repeated both academic years in a similar manner (Figure 2). In the first year (2015) planning lasted longer (February and March) since we had to develop the whole project. In March of the following year, we slightly revised the initial plan according to the results of the reflection in the first project cycle. These changes referred to students' freedom to choose topics of their pedagogical workshops, the workshop venue, and the duration of students' discussions.

With the aim of monitoring and evaluating the changes, we organised students' correspondence in forums, videos, and photos of workshop activities, administered the post-Moodle questionnaire at the end of each academic year and carried out recorded interviews with both groups of students. The most important data source was students' correspondence recorded on Moodle forums. To conduct a qualitative content analysis of the critical friendship discussions on Internet forums, we determined three modes of reflection: technical, practical or contextual, critical and absence of reflection (Figure 1). In addition to correspondence, we obtained vital feedback from the students by using the online questionnaire. It comprised 20 questions. We posed open-ended questions to find out what students learned, what they consider the advantages or disadvantages of the critical friendship discussions and how to improve it all. Likert scale questions helped us to measure the fulfilment of students' expectations, their feelings in the role of critical friends, etc. Semantic differential was used to obtain feedback about critical friends' comments. There were also two dichotomous questions about using online critical friendship discussions in the course *Practicum in teaching methodology of the Croatian language* and in other courses. We utilised QDA Miner Lite software to conduct qualitative analysis of students' correspondence on forums and open-ended responses in the online questionnaire. MS Excel aided in conducting quantitative data analysis of online questionnaire. At the end of each cycle, the second author conducted the group interviews to find out more information about expectations, advantages, and disadvantages of this experience. Videos aided in determining how many original teaching activities students organised in their workshops.

We conducted an exhaustive analysis, critical reflection and interpretation of all data at the end of our research. Considering that both cycles had the same aims and almost identical structure, the results and discussion are elaborated on in the next chapter.

Results and Discussion

Description of Students' Classroom Activities and Activities on the Online Forum

At the beginning of the semester, the students were divided into teams consisting of two to five members with the task of preparing classroom activities and presenting their plans on Moodle web forums that were created for that purpose. For the workshops that they were preparing, it was necessary to establish integration, correlation, and coordination of the contents of different courses (Težak, 1996). During that process, the focus was on the logical interconnection of similar subjects (the Croatian language, Music, and Art) with the goal on integrating classroom activities into the pupils' cognitive, affective, and life experience (Rosandić, 2005). Students were supposed to organise their classroom activities in the form of a pedagogical workshop in which individual tasks and cooperative activities may rotate and which are based on holistic and experiential learning. Thus, some scenarios could 'incorporate dance, play, and division of larger groups into two or three smaller teams that could work in separate rooms or at separate tables in the same classroom' (Bognar & Matijević, 2002, p. 249).

During the lectures that were held at the faculty, students were informed about the criteria for the evaluation of their discussion that included the amount of written text, elaboration and realisation of the presented ideas, as well as the number of relevant literature they quoted. Additionally, the students were presented and familiarised with the basic theoretical foundations of the correlated-integrated system. These theoretical foundations could be expanded upon by reading the suggested literature that was available in a digital format on the Moodle file repository, after which students could check their knowledge by completing a quiz on Moodle. Furthermore, with the use of photographs, students were shown examples of pedagogical workshops from the previous academic year (2014/15), while in the following academic year (2015/16), video recordings of the best pedagogical workshops from the preceding year were shown. Moreover, students were expected to write a critical review of one of the previous year's workshops, whose video recordings were available on Moodle (https://youtu.be/Hz7NzmVoLFA, https://youtu.be/sNTbhvqPGd4[3]).

After that, the teams started planning their classroom activities. First, they had to independently choose the topics for their workshops. In the first year, there were no limitations on choosing the topic so they were very different

3 The first video recording was filmed by the teacher, and the other video recordings were filmed by the students who conducted the pedagogical workshops.

from each other (e.g. *The Sun*, *What Can I Do for My Health*, *Stop Smoking*, *The International Day* of *Families*). In the next year, students were advised to focus their topics on well-known fairy tales so some of the topics were: Love (*Little Mermaid,* H. C. Andersen), The role of women in society (*Cinderella*, Jacob and Wilhelm Grimm), *Stribor's Forest*, (I. Brlić Mažuranić), Moral values (*Little Prince*, A. de Saint-Exupéry).

The teams then had to design their own pedagogical workshops. Previously, students had to study the teaching curriculum and the relevant literature for their workshops. They were asked to upload the workshop plans on Moodle forum so that other critical friends could take part in the discussion. The structure for the critical friendship was circular, i.e. the members of the first team were critical friends to the second team, the second team to the third team and so forth. Some teams developed a lively discussion that helped in preparing workshops:

> Dear Colleagues of the 'Dream team', my team and I are delighted that you have actively taken part in our [discussion about the] thematic network. Some of your suggestions have prompted us to further think about some of our planned activities. We were talking today about your suggestions and our initial ideas. I like this online type of work, it achieved its purpose, and with your suggestions, you have encouraged us to change some of our classroom activities. I can say that the traditional saying still holds: 'Two heads are better than one', but in our case it is that eight heads are better than four. ;) (Student I.S., personal communication, April 28, 2016)

In the first year, some workshops were carried out in schools with pupils, and some were carried out at the faculty with other students. Some of the workshops were planned and carried out very well, particularly those that were carried out at the faculty. For that reason, we have decided that next year students should carry out their workshops at the faculty, with their colleagues as participants of the workshops. Aside from that, a smaller number of teams were formed (six, as opposed to eight from the previous year), and more time was allocated for discussion of the realised workshops.

Through the analysis of video recordings of the second year, we have observed that the workshops were organised very similarly. It was evident that students had been using an existing workshop design to plan and create their own workshops. However, there were numerous creative solutions. During the first year of our research, the analysis of video recordings showed 22 original activities in eight teams. The next year there were 23 original activities in six workshops.

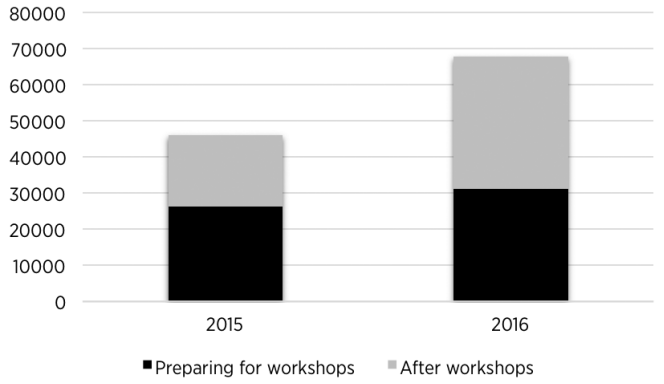

Figure 3. Student activity during the first and the second year of research expressed by the numbers of words written in the online forums

After finishing their workshops, each team uploaded an abridged video recording of them, which initiated the forum discussion. Based on the total number of words (Figure 3) written in the discussion it is evident that there is an increase in activity in the second year of the research. This particularly refers to the discussion at the end of the realised workshops where students were given more time (two weeks instead of one).

Analysis of the Evaluation Questionnaire

At the end of each research cycle, we asked the students to fill out an anonymous evaluation questionnaire that was available on Moodle. The total number of the respondents who completed the questionnaire was 46, 22 students (81.5%) involved in the first year of research and 24 (100%) students who participated in the second year of research.

All students answered the question related to the expectations of the discussion on the web forum. The majority (32[4]) expected assistance and useful pieces of advice for the planning and realisation of the workshops. Likewise, students expected friendly and honest feedback (19), new ideas, learning and development of competencies (8), understanding and respecting other opinions (8), active and prompt student involvement (7), cooperation (7), discussion similar to the one in *Methodology of pedagogical research*[5] (2), support and

4 Numbers in parentheses denote the frequency of categories that were determined based on the qualitative analysis of students' answers to the open-type questions. Due to their complexity, the students' answers were divided into smaller parts and assigned to different categories. Therefore, the total sum of frequencies is higher than the number of students who had completed the questionnaire. This refers to all the open-type questions.

5 Students attended that course the previous semester, and the lectures were held by the first author of this article.

praise (2), pleasant communication (1), stimulating thinking (1), fewer tasks related to critical friendship (1), earlier beginning of the discussion (1), and more in-person discussions (1).

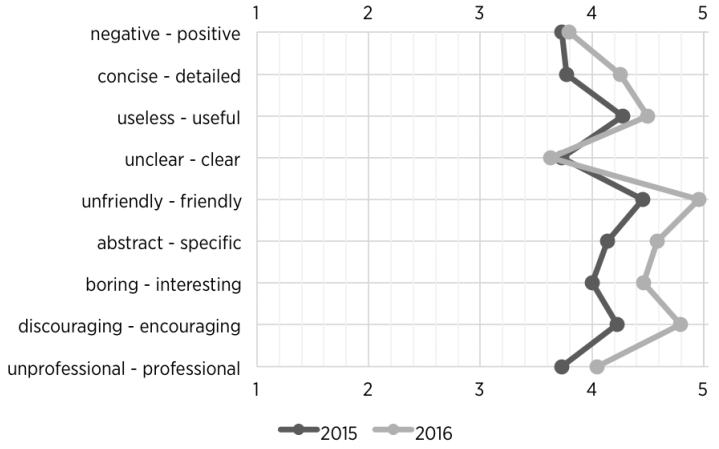

Figure 4. Results of semantic differential in relation to the assessment of the critical friends' comments

To determine how the students experienced the comments given by their critical friends, they were offered nine contrasting adjectives with a five-stage scale (Figure 4). Students perceived their critical friends' comments as mostly friendly (4.7), encouraging (4.5), useful (4.4), specific (4.4), interesting (4.2), detailed (4), professional (3.9), positive (3.8) and clear (3.7).

All students answered the question relating to what they learned by participating in critical-friendly discussions. They pointed out receiving and giving constructive critical comments (35) as well as cooperative learning (5). Several students wrote that they learned how to think critically (4), to organise new classroom activities (4), to understand others and their practice (3), to express themselves better (1), to be more open to change (1) and to be a critical friend (1).

All students responded to questions about the advantages and disadvantages of online discussion and gave suggestions for improvements. They reported that the advantages were the possibility to exchange ideas, pieces of advice, suggestions and experiences (16), to self-evaluate and to evaluate others, and to give and receive feedback (12). They emphasised the freedom of choosing the time and place to participate in debates (11), the freedom of expression and respect for different opinions (7), and the formation of cooperative, friendly

relations and the possibility of learning in a community of critical friends (10). Students also emphasised the mutual assistance, motivation, support, praise and encouragement (9) as well as positive and well-intentioned critical comments (7). Some of the students stated that they had enough time to think, read literature and to re-read everything that was written on the forum in detail (7). Lastly, some students were encouraged to think critically (8), to think creatively (2), and to cooperate with others to find solutions to problems (5) by participating in a lively discussion with other participants on the forum (6).

The biggest disadvantages of the online forum discussions were the misunderstandings and the problems in communication that occurred because of the lack of personal communication (22). Moreover, this type of online discussion requires a lot of time (16). Part of the participants pointed out that long comments could be difficult to follow and comment on (11). It could also be observed that there was an insufficient and uneven involvement on the part of some of the students (5), repetition of what has already been written (5), and worrying about the word count and the required literature for the evaluation criteria of the discussion (5). Apart from that, it has also been noted that some students found the web forum confusing and that it was difficult to express themselves in written form (3), while others complained about the necessity of being dependent on the activity of others in the discussion (2), and that some students did not accept their colleagues' advice and comments (2).

As a proposal for improving the online discussion on the web forum, participants suggested some changes in the evaluation criteria for the discussion (17). This particularly refers to the word count and the number of works cited in the text. Students feel that evaluation should be focused more on the quality, rather than the quantity of the comments. It was also proposed that the comments should be shorter (4) and that the time limitation for the discussion should be omitted (4). The participants are of the opinion that the discussion should be a combination of both online and in-person communication (9). Students suggested that alongside the written discussion on the web forum, which is a type of asynchronous communication, there should also be chats and video conferences (3). Furthermore, the use of emoticons was proposed (1) in order to better understand the feelings of the person writing the comment. One student suggested that her colleagues should be even more engaged in intensive critical thinking, and another her colleagues put forward a proposal that there should be a critical friendship between professors and students.

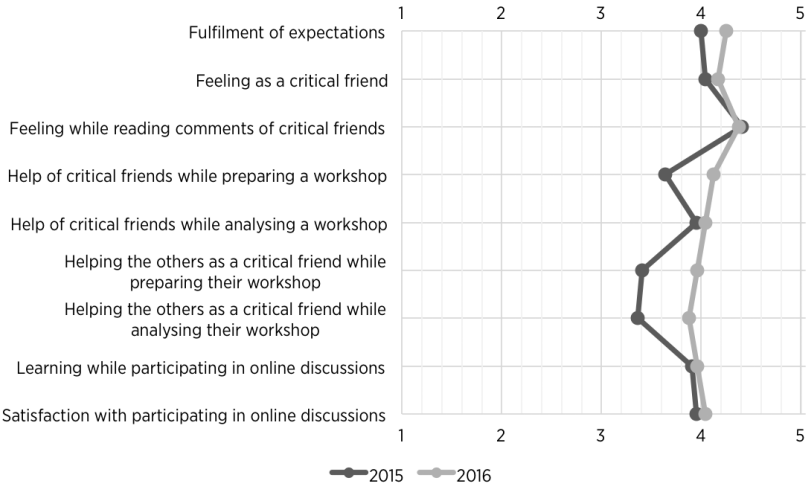

Figure 5. Differences between the first and the second years of research in the answers to the closed-type questions.

From Figure 5 it can be observed that the second year of research shows either similar or slightly higher average results to answers of the closed-type questions compared to the first year of research. Students are more satisfied with meeting their expectations, but also with the assistance of their critical friends to prepare for classroom activities, as well as with their own assistance to other teams in the preparing and the analysis of classroom activities. Students in both years were very satisfied with participating in the critical-friendly discussion on the web forum. Most students (91%) think that critical-friendly discussions should be used in the future as a part of this course and that it should be incorporated into some other courses (85%).

The responses obtained from students' interviews were more or less in line with the results from the evaluation questionnaire. However, in the interview students pointed out that the final discussion that was held after the workshops was unnecessary because they were mainly repeating what they had already written in the discussion that was held during the preparation stage for the workshops.

Qualitative Analysis of Students' Discussions on the Online Forum

The primary purpose of this action research was to encourage students to think reflectively by participating in the critical-friendly discussions on the web forum. In Figure 6, it can be seen that this goal was achieved. Namely, most of the communication on the forum represents a type of reflectivity on

one's own work. The technical reflectivity dominates (63%), followed by practical reflectivity (22%), while critical reflectivity is very rare (3%). In part of the communication, there was no reflectivity at all (13%).

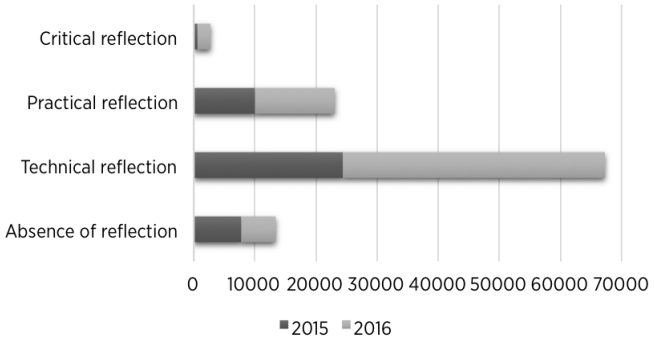

Figure 6. Relation between different types of reflectivity in two years of research represented in the number of written words

Technical reflectivity in students' discussions involved the organisational aspect of the workshops. Therefore, students were mainly writing about the activities, their implementations in the workshops, their arrangement and duration. Theoretical explanations are very rare in the discussions, aside from several references that mostly do not have a clear connection to the text itself:

> Your topic really does have a wide spectrum of possibilities, and you have used that excellently to your advantage with many practical activities. It might be better if you had planned the poster for the Arts course instead of the mind map for the Science course. At least that is the case in my school where pupils use mind maps for revision at the end of every class, and the children are fed up with it. (Student V.P., personal communication, May 3, 2015)

Practical reflectivity included the interconnection between theory and practice. In this case, the theoretical explanations had a clear connection with the text and showed a deeper understanding of the topic. The discussion was intended to promote thinking about goals, and not only about activities. Therefore, the possibility of creating student-centred teaching was scrutinised:

> I believe that we all know that contemporary teaching, i.e. student-centred teaching is extremely important for a student's progress. Furthermore, we all know from experience that teachers are still afraid of this

> type of teaching because they think it is difficult to implement in their own practice… Preparation for contemporary teaching is more difficult than preparation for traditional teaching, but the aftermaths of that type of work are, for me, much more valuable. Perhaps even because of these types of workshops that we have been participating in the *Correlated-integrated systems in Croatian language teaching* course and *Methodology of education* course,[6] we will become the generation of teachers that will make changes in our own teaching. (Student I.S., personal communication, April 28, 2016)

Unlike technical reflectivity, which was found in every team's discussion regarding the realised workshops, practical reflectivity was not found in three out of eight team discussions after workshops in the first year. The second year's practical reflectivity was found in all team discussions before and after the workshops, although not with an equal ratio. It ranged from 2% to 38%.

For critical reflectivity, which was very rare in the discussions, it is important to put teaching in a wider social context. Critical reflectivity includes re-questioning the socio-political problems and the distribution of power that inhibit people from developing their productive potential. It is important to mention that in the first year of research, critical reflectivity was found only in one out of eight discussions, while in the second year it was found in two out of six. This type of reflectivity was mainly connected to the discussion regarding the status of women in society. One member of the team, whose workshop topic was the status of women in society, commented on the role of women in another team's workshop:

> When we look at the content of the fairy tale *Snow White*, we can also see that the female status is jeopardised. I might be wrong, but I am not sure how many women would joyfully cook and sing for seven or more people and how many women would enjoy cleaning after others. We know that children identify with the main character who eventually becomes their role model. However, I am not sure if it is a good idea that their role model is a naive woman who does all the household chores and who is only admired for her beauty. (Student I.P., personal communication, April 29, 2016)

However, that comment did not prompt the other team, whose topic was the fairy tale *Fisherman Palunko and His Wife,* to reconsider their goals and planned activities for the workshop.

6 This course is led by the first author of this article

Discussion

The first time that students participated in discussions of critical friends in online forums was in the last year of their study. Most of them embraced participation in such organised discussions with delight, while a few of them resisted or simply did not participate at all. Negative reactions of some students were the most evident in the first year of research. To increase students' satisfaction with online discussions of critical friends, several improvements were made in the Moodle course (better organised and explained tasks in the Moodle course), as well as in the organisation of the whole process (extended time for discussions). A particularly important improvement was using videos of workshops recorded in the previous year in the classroom teaching and in the Moodle course. Thus, workshops that students should prepare and carry out gained increased importance. They were not utilised only for the practical assessment of students' learning, but they became teaching resources available for future generations of students.

Despite these improvements, increased activity and satisfaction of most students, two students did not enter a discussion at all in the second year of research, while two participated only in the first part. It is obvious that this type of written communication is not convenient for all students. Since written communication is a vital precondition for future teachers, it would be necessary to include students in various online activities from the beginning of their study to help them develop writing and reflective skills.

Online discussions of critical friends were encouraging for cooperative learning, and the teacher's role turned more into the role of a facilitator who was responsible for providing organisational and technical support to students. Students obtained everything else independently. They relied on members of their teams during the planning, preparing and realisation of workshop activities, while critical friends helped with their comments in the online forums. Although such organised discussions of critical friends contributed to the cooperative learning of students, we cannot conclude that they contributed to devising creative workshop activities. Comments of critical friends were rather encouraging, and positive feedback confirmed that everything was well planned and successfully carried out. It indicates that we need to make progress in students' reflective thinking, which was mostly at the technical level.

Although it is not possible to avoid technical reflectivity in the everyday practices of a teacher, it is important to enable students to gain more advanced levels of reflectivity. This refers particularly to their critical reflection. Brookfield emphasises its two main aims:

> The first is to understand how considerations of power undergird, frame, and distort education processes and interactions. The second

> is to question assumptions and practices that seem to make our teaching lives easier but actually work against our own long-term interests. (Brookfield, 1995, p. 8)

However, it is hardly possible to expect that critical and self-critical thinking will happen in the education of future teachers that does not allow enough opportunities for its developing and is more oriented to practicing teaching methods (Peko, Mlinarević, & Buljubašić-Kuzmanović, 2008). To make changes possible, it is necessary that professors empower their reflective capacities and work collaboratively to improve their practices. Participative action research in higher education could contribute to achieving this aim (Wood, Seobi, Setlhare-Meltor, & Waddington, 2015). Inviting students to be critical friends and co-researchers in the action research of their professors was suggested by one student. We consider this to be a good practice.

Our collaborative action research resulted in introducing critical friendship into the course. It induced the activity, cooperation, and reflectivity of students. In addition, it contributed to the learning process. During personal conversation, the second author of this paper said that she encountered the term critical reflection for the first time while she participated in our action research: 'It was for me, in some way, a fantastic discovery that I can go further and deeper in my own work'. However, our cooperation was necessary for such change to happen since it opened some new perspectives for her. She pointed out that no one is able to make innovations on their own: 'One has to be impelled by something, with new insights. That is why cooperation, contacts and critical reflection is important. Simply it is not possible to be without it' (I. Krumes, personal communication, February 24, 2017).

Online discussion of critical friends represents a way of encouraging students' critical reflective thinking. It could be combined with a face-to-face classroom discussion that was suggested by students. They also suggested synchronous communication over Skype or some other online application to make a discussion more dynamic. In further attempts, we intend to organise only one discussion after workshops. In that way, we could avoid repetition in their discussions, which students emphasised to be a problem. It also could reduce the time for participating in such activities, which students had also noted as a disadvantage. However, shortening the time for learning should not be the ultimate goal. The reason we initiated this research was our dissatisfaction with the quality of previous classroom discussions about teaching. We are aware that students participating in discussions spent a lot of time reading and writing their comments and studying professional literature. However, we consider that

this is to be precisely the level of learning appropriate for the last year of university study. Students were also aware of this and they suggested a continuation of online discussions of critical friends in this course and introducing this practice into other courses, particularly in different teaching methodologies.

We realised that it is not enough to give students an opportunity to participate in critical-friendly discussions in the online forum and expect that they will eventually reach a higher level of reflectivity. They need the support of their teachers (Liu, 2013). In our case, it appeared that a socially engaged topic like *the role of women in society* prompted the most critical-reflective comments. Students selected this topic by themselves, as well as all other topics. The problem was that just one of 14 teams chose such a topic over the two years. This means that 'future teachers need considerable guidance and support to think critically about their experiences in schools and, especially, about the cultural biases they bring to those experiences' (Whipp, 2003, p. 322). Teachers need to encourage students to compare and contrast various ideas, question 'taken for granted beliefs and values', and view situations problematically (Bold & Hutton, 2007, p. 27).

It is important to attempt to encourage students to develop critical reflectivity based on the presumption that 'educational practice is not simply instrumental in the sense of figuring out how to get things done, but also and more importantly, it is social and political in the sense of deliberating about what to get done and why, who decides, and whose interests are served' (Cochran-Smith & Lytle, 2009, p. 121). However, the practical/contextual reflectivity should not be neglected since it contributes to deeper understanding of everyday practice that is not possible to achieve from the perspective of either critical, or technical reflectivity. Specifically, each teaching situation is unique and it is possible to understand it if we are theoretically well equipped and if we understand our professional context well. Coimbra, Martins, Pinto and Duarte point out that 'the essence of practical reflectivity is set on the group's interpretation of every day pedagogical experiences and on collaborative work, as paths of creation of the learning community' (2014, p. 186).

Finally, we agree with van Mannen that reflective thinking is not the only precondition of teacher's artistry. Moreover, 'if teachers were to try to be constantly critically aware of what they were doing and why they were doing these things, they would inevitably become artificial and flounder' (1995). He believes that teachers should develop the pedagogical tact that implies spontaneous and creative reactions in unique educational situations. Future teachers could look to their professors in developing their artistry. However, they could also learn from their own experiences in the workshops. Videos of their

teaching attempts could be helpful in developing their professional skills:

> 'I as well as my colleague S. thought that our studies are coming to an end. This is why all those workshops left a deep mark on us… They will remain indelibly embedded in our memories thanks to videos and photos.' (Student M. A., personal communication, May 24, 2016)

Conclusion

Critical thinking is an essential life skill in 21st-century democratic society (World Economic Forum, 2015). With the aim of fostering the development of critical thinking in their students, prospective teachers should develop their own critical and reflective thinking during their higher education. It is important to emphasise that 'no teacher education programme can prepare teachers for all the situations they will encounter. Teachers themselves will make the final decisions from among many alternatives' (Han, 1995). This is the reason that they should develop their reflectivity.

Articles that merely detect problems and plead for introducing critical thinking in teacher education cannot be of much help. Instead, professors as 'action researchers need to show their collective intent to live out the values which inform their work' (McNiff & Whitehead, 2002, p. 25). In this action research, we enable our students to participate in online critical friends' discussions about workshops that they independently and cooperatively devised, prepared, and conducted. We found that it encouraged students' reflective thinking, although it was performed at the lowest (i.e. technical) level. This result is not satisfactory. We observed that critical reflection rose to the fore in the team that chose a socially engaged topic. We could conclude that dealing with such topics from the first year of their study could encourage students' critical reflective thinking. Therefore, we are going to apply this conclusion in our teaching practice. The meaningfulness of this decision is corroborated by the following opinion of one student:

> We frequently hear that contemporary teaching, which we all aspire to, needs to teach pupils, among other things, critical thinking. How can we teach it to them when we as future teachers have rarely met with methods of critical thinking? This is why this is an excellent way to encourage us as future teachers, at least in this last fifth year, to reflect a bit. (Student 14, personal communication, June 11, 2015)

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Towards Professionalism in Music: Self-assessed Learning Strategies of Conservatory Music Students

Esa Virkkula*[1] and Säde-Pirkko Nissilä[2]

One of the current spearhead projects in Finnish education is learning to learn. Learning strategies have been examined from a variety of perspectives. They are policies that either promote or hinder learning. They are any behaviours or thoughts that facilitate encoding in such a way that knowledge integration and retrieval are enhanced. Strategies can be practiced and learnt.

Direct and indirect learning strategies formed the model of defining music students' self-assessed learning habits in this research. The strategies dealt with here are memory, cognitive, compensation, metacognitive, affective and social strategies. Critical thinking strategies as well as deep and surface learning strategies were also observed.

In this paper, a theoretical background and methodological solutions will first be presented. A significant finding comes from cross-professional collaboration of students, teachers, and professionals during the research period: it enhanced the use of strategies. Another finding, the profitable use of the workshop method, can be adopted by other fields of learning and make processes flexible and fruitful.

Keywords: critical thinking strategies, music education, musical expertise, vocational education, workshop

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Na poti k profesionalnosti v glasbi: samoocenjevanje učnih strategij študentov konservatorija za glasbo

Esa Virkkula in Säde-Pirkko Nissilä

Eden izmed trenutno vodilnih projektov na področju vzgoje in izobraževanja na Finskem je učenje učenja. Učne strategije so preučevali z različnih perspektiv. Odločitve šolske politike lahko bolj ali manj spodbudno vplivajo na učenje. Gre za vedenje ali razmišljanje, ki spodbuja integracijo znanja in razvijanje spretnosti učenja. Učne strategije lahko vadimo in se jih lahko naučimo. V okviru te raziskave so neposredne in posredne učne strategije sestavljale model samoocenjevanja učnih navad študentov glasbe. Strategije, s katerimi smo se ukvarjali, so bile: spominske, kognitivne, kompenzacijske, metakognitivne, afektivne in socialne. Opazovali smo strategije kritičnega mišljenja pa tudi globinske in površinske učne strategije. V prispevku najprej predstavljamo teoretična ozadja in metodološke rešitve. Pomembna ugotovitev izhaja iz medsebojnega sodelovanja študentov, učiteljev in strokovnjakov v obdobju trajanja projekta, ki je pripeljalo do pogostejše uporabe učnih strategij. Tovrstno delavniško delo je mogoče koristno prilagoditi tudi za spodbujanje fleksibilnega in učinkovitega učenja na drugih področjih.

Ključne besede: strategije kritičnega mišljenja, glasbeno izobraževanje, glasbena sposobnost, poklicno izobraževanje, pedagoška delavnica

Introduction

The dominance of behaviourism in human learning resulted in a total dependence on the external events as determinants of the processes and information transformation that take place in a learner. Much of this observation dealt with the extent to which a learner could avail him/herself of mnemonics (e.g. Bower, 1970; Paivio, 1969, 1971; Wood, 1967). These tasks were associated with laboratory research tasks. Interest was also focused on ecologically valid tasks (Weinstein, Zimmerman, & Palmer, 1988).

The changes to constructivism and humanistic approaches have raised learning strategies for discussion. The change affected the ways in which learning strategies are conceptualised, the methods used to evaluate their acquisition and use, and procedures used to teach them (Dweck, 1999; William & Thompson, 2008).

In music students' education learning strategies are needed e.g. in the context of practice where students might have a chance to participate in "authentic activity" with the support of skilful experts (Lebler, 2008; Brown et al., 1989). Professionals who support novices in this endeavour act as coaches and help students construct images of what skilful practice might be (Schön, 1987; Virkkula, 2016a). They make their knowledge and thinking visible to the learners (Heaton & Lampert, 1993). Social interactions between the students and their teachers and mentors are vital for the students' learning, because it is through these interactions that the students obtain access to the experienced teachers' thinking and ways of knowing (Wenger, 1998). Recent research reports (Nissilä & Virkkula, 2015; Virkkula & Nissilä, 2014) reveal that the professional/ mentor was expected to give advice and to control learning. The professional's task in relation to students was intended to be an encouraging supervisor, a facilitator of learning, and a partner.

Learning Strategies

When attempting to understand different ways of learning, it is important to differentiate between cognitive, affective, and conative constructs and, further, appropriate strategies and levels of effort.

Psychology has traditionally identified and studied three components of mind: **cognition, affect, and conation** (Huitt, 1996; Tallon, 1997). Cognition is generally associated with the question of 'what'. It refers to the processes of knowing and understanding: encoding, storing, processing, and retrieving information.

Affect asks the question 'How do I feel about this knowledge or information?' It refers to the emotional interpretation of perceptions, information or knowledge. It is generally associated with one's positive or negative attachment to people, objects and ideas.

Conation is associated with the issue of "why". It refers to the connection of knowledge and affect to behaviour and is the personal, intentional, deliberate, goal-oriented, or striving component of motivation, the anticipatory aspect of behaviour (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Emmons, 1986). It is closely associated with the concept of volition, defined as willpower, or the freedom to make choices about what to do (Kane, 1985; Mischel, 1996). It is critical if an individual intends to engage successfully in self-direction and self-regulation (Barrel, 1995).

Critical thinking, again, is purposeful, self-regulatory judgement that results in interpretation, analysis, evaluation and interference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgement is based. It affirms that every system is perfectly designed to get the expected results (Facione & Gittens, 2011; Nissilä, 2010).

Self-regulation of learning usually refers to cognition and effort through cognitive, metacognitive, and resource management strategies (Ruohotie, 2000). Learners' conceptions show connection to the outcomes of their learning. If they have a conception of the necessity of fast progress, they are likely to adopt superficial learning strategies. If the tasks that need cognitive processing are regarded as challenges, it refers to good performance. If the challenge is neglected and the tasks are approached superficially in a state of mind that leads to overconfidence, the learning outcomes are poor. There seems to be a close connection between learners' concepts of themselves, their approach to learning, and their conception of their possibilities to regulate their learning, as well as their desire to belong to a certain group (Bandura, 1986; Hickey, 1997; Hickey & Zuiker, 2012; Lave & Wegner, 1991).

Perceived ***self-efficacy*** is defined as people's beliefs about their capabilities to produce designated levels of performance. People with high assurance of their capabilities approach difficult tasks as challenges rather than threats. In contrast, the learners who doubt their capabilities avoid difficult tasks, which they consider personal threats. They have low aspirations and weak commitment to the goals they choose to pursue. When facing difficult tasks they dwell on their personal deficiencies and adverse outcomes (Bandura, 1994; Bagozzi, 1992).

Metacognition refers to higher order thinking skills involving active control over the cognitive processes engaged in learning. Its central characteristics

are awareness of thinking, sustained motivation and use of strategies. Skills such as planning how to approach a given learning task, monitor comprehension, and evaluate progress toward the completion of a task are metacognitive in nature (Bandura, 1986). According to Flavell (1979, 1987; also, Flavell, Miller, & Miller, 1993), metacognition consists both of metacognitive skills and metacognitive knowledge. He divides knowledge into the variables of person, task and strategy.

Knowledge of person variables refers to general knowledge about how human beings learn and process information, as well as individual knowledge of one's own learning processes and their relationship to the requirements of the tasks. Knowledge about strategy variables includes knowledge about both cognitive and metacognitive strategies, as well as conditional knowledge about when and where it is appropriate to use such strategies. All variables are closely related to motivational components, such as self-efficacy, control beliefs and expectancy of success (Ruohotie, 2000).

Most definitions of metacognition include both knowledge and strategy components. Still, there are problems associated with using such definitions. One major issue involves separating what is cognitive from what is metacognitive. The distinction lies in how the information is used. Pintrich and McKeachie (2000) has stated that cognitive strategies are used to help an individual achieve a goal, while metacognitive strategies are used to ensure that the goal will be/ has been reached (Roberts & Erdos, 1993).

Because cognitive and metacognitive strategies are closely intertwined and dependent upon each other, any attempt to examine one without acknowledging the other would not provide an adequate picture (Ruohotie, 2000).

Defining Learning Strategies in This Paper

Division into ***direct and indirect strategies*** was first used by Rebecca Oxford (1990) for second language learning. Her taxonomy is not generalisable to any situation, but is goal-specific and connected to general theoretical aspects of learning. It introduces direct and indirect strategies: direct ones act in the situation of learning and its outcomes; indirect one influence in the background (Appendix 1). Direct strategies can be compared to the actors of a drama, visible and observable on the stage. The latter represent the directors of the drama, their great influence being unseen, observable only through the actors.

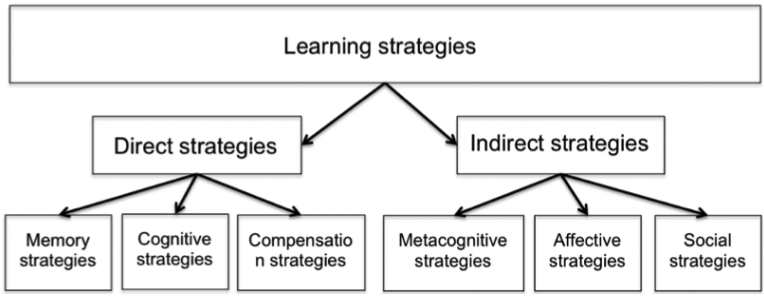

Figure 1. *Classification of language learning strategies* (Oxford, 1990).

Oxford presented her taxonomy in the following way:

- Direct Strategies
  - Memory Strategies (code - MS)
    MS 1 - Creating mental linkages
    MS 2 - Applying images and sounds
    MS 3 - Reviewing
    MS 4 - Employing action
  - Cognitive Strategies (CS)
    CS 1 - Practicing
    CS 2 - Receiving and sending messages
    CS 3 - Analysing and reasoning
    CS 4 - Creating structure for input and output
  - Compensation Strategies (C)
    C 1 - Guessing intelligently
    C 2 - Overcoming limitations in speaking and writing

- Indirect Strategies
  - Metacognitive Strategies (MES)
    MES 1 - Centring your learning
    MES 2 - Arranging and planning your learning
    MES 3 - Evaluating your learning
  - Affective Strategies (AF)
    AF 1 - Lowering your anxiety
    AF 2 - Encouraging yourself
    AF 3 - Taking your emotional temperature
  - Social Strategies (S)
    S 1 - Asking questions
    S 2 - Cooperating with others
    S 3 - Empathising with others

This classification system has been criticised for its problems in separating memory strategies from cognitive strategies, when one is a sub-category of the other, and for the inclusion of compensation strategies, which are connected to how a learner uses the language, rather than learns it (Macaro, 2006, 2010; Rose, 2012).

Due to the definitional indistinctiveness of Oxford's system, critics have argued that the whole field should be replaced with the psychological concept of self-regulation. However, some critics argue that self-regulation and language learning strategies measure different parts of the learning process and thus can be used in tandem to observe a more accurate picture of how learning takes place. The terms cognitive and metacognitive strategies remain common in strategy research, but others related to managing a learner's own affective state or social environment have been examined under the umbrella term of self-regulation.

After all critique and re-reflection, Oxford's taxonomy seems to match well with the material of music students' ways of learning. One minor argument for it is that languages and music are both expressive by nature and thus comparable in this aspect. Learning strategies have naturally strong links to the fields of self-directed learning, and learner autonomy (see Deci & Ryan, 1985; Nissilä, 1999), as they share core notions of independent learning, learner-centeredness, and the necessity for learners to exercise responsibility for their learning, also in music workshops (Lebler, 2008; Virkkula, 2017).

The Aim, Research Methods, and Material of this Study

This study concerns *music education* and vocational music students' self-observed learning strategies. For the research, a special intervention was arranged: during 2003-2011, 11 popular and jazz music workshops of 6-8 weeks were organised in the Conservatory of Oulu in Finland with four to eight participants in each workshop. Professional musicians were invited to practice for a concert with the students. The regular teachers acted as tutors. Each workshop started with joint pre-planning and goal setting in which the music theme and challenges in respect to the students' skills were discussed. Tasks and preparation work were agreed on. The students defined their personal developmental tasks in the workshop and wrote them in structured forms. After the workshops and concerts, the students (N = 62) wrote about their experiences in their reflection forms guided by the following themes: Describe your cooperation with the professional musician! What did you learn in the workshop? What could you have done in another way? (Nissilä & Virkkula, 2015; Virkkula, 2016a, 2016b).

For the deep analysis 20 students' documents were chosen randomly, while the total of 62 yielded material for analysing deep and surface learning strategies.

The aim of the research was to determine how music students perceive their learning and how able they are to guide, assess and verbalise it. Another purpose was to observe music students' critical thinking skills. The research questions were the following:

1. What kind of learning strategies were observed in the music students' descriptions of learning?
2. How consciously did the music students utilise learning strategies in the music workshops?
3. What were the music students' most essential learning experiences in the workshop work and performances according to their self-assessment?

The research approach was a qualitative case study supported by some quantitative data. The data sets were (1) structured workshop plans in which students outlined their learning goals and (2) written descriptions of their experiences in the workshops. The data sources were complementary and yielded detailed experiential information expressed by the participants. Student statements were classified according to the application of Oxford's taxonomy (see Appendix 1) in which language learning terms were replaced by those of music learning. The material was also analysed according to the principles of deep and surface learning, as well as those of critical thinking strategies.

To analyse the data, each relevant passage was read and the statements were isolated which captured the meaning expressed by the participant. These units ranged in lengths from a few words to a paragraph. Thematic patterns were developed that would aid in the construction of a thick description of the experience. The variation of individual conceptions of the experiences was given attention. The descriptions were arranged to give meanings to the themes. The quotes given show the identity numbers of the research persons.

The trustworthiness was developed through two researchers reading the texts and the use of a critical colleague for discussing interpretations. Through the prolonged engagement with the participants, the truth value was sought to be established (Moschovich & Brenner, 2000; Patton, 1990).

Outcomes

The definitions and list of music learners' strategies were created to suit music learning processes. The terms were given field-specific titles.

Cognitive and metacognitive learning strategies

The following table presents the deep analysis findings of *direct* and *indirect* strategies of 20 randomly chosen music students.

Table 1

The strategies used by vocational music students

DIRECT STRATEGIES	**Code**	**a)**	**b)**	**c)**	**d)**	**e)**	**f)**	**g)**	**Statements in total (F = 476)**	**Per cent of total statements (F = 100)**
Memory	MS 1	17	4	4					25	5.3
	MS 2	20	3	3	3				29	6.1
	MS 3	2							2	0.4
	MS 4	1	1						2	0.4
Cognitive	CS 1	20	20	13	2				55	11.6
	CS 2	5	7						12	2.5
	CS 3	7	4	6	6	4	9		36	7.6
	CS 4			1					1	0.2
Compensation	C 1	10	1						11	2.3
	C 2		20			3			23	4.8
									f=196	41.2
INDIRECT STRATEGIES	**Code**	**a)**	**b)**	**c)**	**d)**	**e)**	**f)**	**g)**		
Metacognitive	MES 1	3	20	16					39	8.2
	MES 2	20	15	20	20	20	10		105	22.1
	MES 3	3	20						23	4.8
Affective	AF 1				9				9	1.9
	AF 2	6	4	20					30	6.3
	AF 3			20	2	6			28	5.9
Social	S 1									0.0
	S 2	8	14						22	4.6
	S 3	2	2	20					24	5.0
									f=280	58.8
									F=476	100

Note. Codes in vertical lines refer to sub strategies. Horizontal a – f -codes refer to functions within sub strategies. In the following, the students` quoted are referred to with their research numbers. MS = memory strategies; CS = cognitive strategies; C = compensation strategies; MES = metacognitive strategies; AF = affective strategies; S = social strategies.

- **Direct strategies** (41.2%)
  Memory strategies (MS 1 – 4)
  Explanations:
  MS 1: Grouping, associating, replacing earlier learnt with new: a) grouping b) associating c) replacing earlier learnt habits with new
  MS 2: Using imagery, musical mapping, using key triggers, representing sounds in memory: a) using imagery b) musical mapping c) using key triggers d) representing sounds in memory
  MS 3: structured reviewing, structured arranging music: a) structured reviewing b) structured arranging music
  MS 4: Using physical sensation, using mechanical techniques

(MS 3/a) I had earlier heard about a half of the programme, and when I heard that there would be familiar pieces, I was able to prepare myself. (3)

(MS 3/b) I have collected an idea file about 2 years and practiced licks from there. This acts as a link between the theoretical world of the school and my own musical world. (17)

Cognitive strategies (CS 1 – 4)
Explanations:
CS 1: repeating, formally practicing with sounds and training, recognising formulas and patterns, recombining or composing my own music, practicing naturalistically; a) repeating b) formally practicing with sounds & training c) recognising formulas and patterns d) recombining or composing one's own music e) practicing naturalistically
CS 2: getting the idea quickly, using resources for communication through music; a) getting the idea quickly b) using resources for communication through music
CS 3: reasoning deductively, analysing expressions, analysing contrastively (across models), translating music expressions to meanings, transferring (one skill/expression/ tradition) to another, composing; a) reasoning deductively, b) analysing expressions, c) analysing contrastively (across models), d) translating music expressions to meanings, e) transferring (one skills/ expressions/ tradition to another), f) composing
CS 4: taking notes, summarising, highlighting: a) taking notes, b) summarising, c) highlighting

(CS 1/c) It is good that the music styles are dealt with in the workshops, because you can concentrate on one genre properly. (10)

(CS 1/d) I was prepared to compose and arrange my own piece. By practicing the programme and improvisation. (16)

(CS 3/a, c) In the group we talked of the theme and the pieces of the concert (era/genre). In the genre questions, we smoothed down in non-' jazz' pieces. So, we didn't follow the recorded versions exactly, but made also our own solutions. (4)

(CS 3/d) The piano is a good instrument in an orchestra to strengthen other themes, since it has a strong attack. Although it is not very audible, its effect is remarkable. (20)

Compensation strategies (C 1 – 2)

Explanations:

C 1 using clues from music, using clues from personal experience; a) using clues from music, b) using clues from personal experience

C 2 switching to familiar ways of presentation, getting help, avoiding playing partially or totally, selecting the topic, adjusting playing, clever inventions, paraphrasing; a) switching to familiar ways of presentation, b) getting help, c) avoiding playing partially or totally, d) selecting the topic, e) adjusting playing, f) clever inventions, g) paraphrasing

(C 1/b) In music all experiences have direct influence on practice. (3)

(C 2/e) The stemmas of background songs were picked from a cd, they were changed a little and practiced a lot. It was fine to see how the professional musician built the pieces gliding … gave also attention to students' ideas. (14)

- **Indirect strategies** (58.8%)

  Metacognition, affection and social aspects are included in this group of strategies.

  Metacognitive strategies (MES 1 – 3)

  Explanations:

  MES 1: overviewing and linking with already known material, paying attention, delaying expression to focus on listening; a) overviewing and linking with already known material, b) paying attention, c) delaying expression to focus on listening

  MES 2: finding out about music learning, organising learning, setting goals and objectives, identifying the purpose of the task, planning for the presentation of the task, seeking opportunities to practice in or for life; a) finding out about music learning, b) organising learning, c) setting goals and objectives, d) identifying the purpose of the task, e) planning for the presentation of the task, f) seeking opportunities to practice in or for work life

MES 3: self-monitoring, self-evaluating; a) self-monitoring, b) self-evaluating

(MES 2/c) I was allowed to influence the workshop. I got my ideas through in the right place. (6)

(MES 2/b-f) In the workshop you get, first of all, experience for field work; when you have three days' time to make the whole function with unfamiliar people, you only have to do so. You'll get more familiar with the core of the matter, when you practice intensively 6 h/ a day. (13)

(MES 3/a-b) I learnt to play so simply that I can listen more, hear myself as part of the band. (3)

(MES 3/b) (IC/2) My aim was to get myself through that all with honour, and it went then quite well. Later on, I felt that I gave all my best and did all that I could. (18)

Affective strategies (AF 1 – 3)

Explanations:

AF 1: using progressive relaxation, deep breathing or mediation, listening to sounds from nature, listening to others playing/ adaptation to the shared feeling, using laughter; a) using progressive relaxation, deep breathing or meditation, b) listening to sounds from nature, c) listening to others playing/ adaptation to the shared feeling, d) using laughter

AF 2: making positive statements, taking risks wisely, rewarding oneself; a) making positive statements, b) taking risks wisely, c) rewarding oneself

AF 3: listening to one's body, using a checklist, writing a learning diary, discussing one's feelings with somebody else, sharing attitudes; a) listening to one's body, b) using checklists, c) writing a learning diary, d) discussing one's feelings with somebody else, e) sharing attitudes

(AF 2/a) Cooperation with the visiting professional was really fine. No prima donna performances … suitable amount of guidance and ideas, but nothing such as would have caused the feeling of inferiority. (11)

(AF 2/b) Surprisingly I learnt how to cool down the nerves, when 15 minutes before the first concert I had to solder the loosened cable of the bass … (20)

(AF 2/c) In a concert everyone wants to give their best, so they have to work for it. (3) The concert is a reward of the work (all)

(AF 3/d-e) The workshop develops communication skills with other band members. (3)

Social strategies (S 1 – 3)

Explanations:

S 1: Asking for clarification or verification, asking for correction; a) asking for clarification or verification, b) asking for correction

S 2: cooperating with peers, cooperating with professionals; a) cooperating with peers, b) cooperating with professionals

S 3: developing cultural understanding, becoming aware of others' thoughts and feelings, sharing thoughts and intentions, playing in an orchestra; a) developing cultural understanding, b) becoming aware of others' thoughts and feelings c) sharing thoughts and intentions, playing in an orchestra

(S 2/a) I learnt more and more to listen to the others and appreciate the input of the others in the band. (15)

(S 2/b) In the presence of a really experienced professional you feel how your attitude to jazz and other music like it gets deeper. Working was motivating. (3)

(S 3/a) It was fine to talk and practice jazz more in the philosophical sense than theoretical. (16)

(S 3/b-c) I learnt to get along with people having different opinions … it is interesting to get new views from a person who has already worked years in the field of the music genre in question. A bonus is his positive attitude also to cooperation. (13)

In the next passage, the material examined above through Oxford's classification is observed from another point of view: that of critical thinking.

Critical thinking strategies

Efforts were taken to distinguish between the cognitive or epistemological aspect and the emotional, affective, motivational, and psychodynamic aspects. The following findings are divided into six skills: intellectual, perception, self-control, individuality, social, and motivational skills to represent critical thinking strategies (cf. Anderson et al., 2001; Soden & Pithers, 2001; Tiruneh et al., 2014).

Intellectual skills reveal rational, systematic and analytical thinking, problem solving, change of perspective, skills in diagnostics, evaluation and planning, centring on the individual's capacity for rational behaviour.

It is good that the music styles are dealt with in the workshops, because you can concentrate on one genre properly. (10)

It was fine to talk and practice jazz more in the philosophical sense than theoretical. (16)

Perception skills concern precise sense perception, typically including precision in observation and interpretation:

Synthesiser parts suitably scattered give a good technical added colour and counterweight to the rich-sounding world of the orchestra. It is well suited to describe the 'cold and technical' world of Bond films being present in Bond movies. (20)

Self-control skills cover definitions such as responsibility, reliability, perseverance, accuracy, ability to concentrate, quality orientation, centring on the individual's inclinations, and capacity to act in accordance with general instructions.

Surprisingly I learnt how to cool down my nerves, when 15 minutes before the first concert I had to solder the loosened cable of the bass … (20)

Individuality skills cover independence, self-confidence, and creativity – centring on the individual's ability to act alone, especially in unforeseen situations.

I have collected an idea file about 2 years and practiced licks from there. This acts as a link between the theoretical world of the school and my own musical world. (17)

Social skills concern co-operation and communication abilities, congeniality, and sociability concerning the individual's ability to interact with others.

I learnt more and more to listen to the others and appreciate the input of the others in the band. (15)

Motivational skills cover initiative, dynamism, drive, openness, keenness to learn and adaptability, and concentrate on the individual's potential to keep up with and contribute to the development (sometimes called flexibility).

The concert is a climax to which all the project aims. In a concert, everyone wants to give their best, so they have to work for it. (3)

This study shows that knowledge structures and schemes were developed through cognitive processes, while affective experiences developed emotional patterns. The cognitive and emotional patterns seemed to be difficult to keep separate. For that reason, although the students were obviously able to observe critical thinking strategies consciously, they did not deal with them very analytically (research question 2). In general, critical thinking skills/ strategies seemed to increase through the process of education (Nissilä, 2010).

Deep and surface learning strategies

To summarise, the overall approach to the strategies and critical thinking skills was examined by observing the learning approaches of 62 students. Deep learning involves critical analysis of innovative ideas, linking them to already known concepts and principles so that this understanding can be used for

problem solving in new, unfamiliar contexts (Biggs & Tang, 2011; Lublin, 2003).

The documents of 62 students revealed that none of them showed superficial approaches. All did their best to prepare for the workshops to gain as much as possible from them. During the workshops, they also showed an amazing conscientiousness. The ones who were less advanced in skills were willing to use their time for interminable practices to be able to adopt all skills and knowledge available:

> *In the beginning, the project felt nearly insurmountable because of the challenging pieces that I happened to get. Then I set myself very moderate goals and also reached them … The project was very rewarding even with all its feelings of upheaval. I learnt technically new skills just because it was necessary for performing the task. Now afterwards it is easy to smile at that wailing and gnashing of teeth. I did it!! (22)*

Conclusion

The aim of this study was to explain music students' ability to perceive and assess their learning. The aim was formed into three research questions: 1) What kind of learning strategies were observed in the music students' descriptions of learning, 2) How consciously did the music students utilise learning strategies in the music workshops, and 3) What were the music students' most essential learning experiences in the workshop work and performances according to their self-assessment? The research questions guided the analysis of the data available, the theoretical research being connected to learning strategies (e.g. Oxford, 1990).

From the viewpoint of the first research question, the data analyses reveal that the use of both cognitive and metacognitive strategies was nearly equal among the vocational music students (41.2%, vs 58.8%). Recent theories of learning speak of learner autonomy, self-directed learning, self-regulated learning, or independent learning, as well as of problem based learning and active learning. They are not only examples and a matter of cognitive skills and processes, but also have an emotional and social nature. They require metacognitive skills and strategies to be fully functional (Deci & Ryan, 2014; Nissilä, 1999).

Examining the results more closely reveals that *direct strategies* collected 196 statements (41.2%), including statements of cognitive strategies (104), memory strategies (58) and compensation strategies (34). *Indirect strategies*, i.e. metacognitive, affective and social strategies collected 280 statements, (58,8%). Metacognitive strategies dominated the data of indirect strategies (167), while affective summed up to 67 and social to 46 statements.

In light of the second research question, in the subclass of *cognitive strategies* (direct strategies) two conscious learning habits dominated: 1) 'repeating, formally practicing with sounds & training, recognising formulas and patterns, recombining or composing own music', and 2) 'reasoning deductively, analysing expressions, analysing contrastively (across models), translating music expressions to meanings, transferring (one skill/ expression/ tradition) to another and composing'. Among *memory strategies* grouping, associating, replacing earlier habits with new as well as structured reviewing and structured arranging music were used most often and consciously. *Compensation strategies* collected the least of statements in the direct strategies group.

Of *metacognitive strategies*, the most frequently referred to was 'finding out about music learning, organising learning, setting goals and objectives, identifying the purpose of the task, planning for the presentation of the task and seeking opportunities to practice in or for work life'. The next biggest class was "overviewing and linking with already known material, paying attention and delaying expressions to focus on listening" followed by 'self-monitoring and self-evaluating'. Among a*ffective strategies* 'making positive statements and sharing attitudes' was mentioned only in a minority of comments. No comments were directed e.g. to the ways that are popular in other contexts, viz. 'relaxation, deep breathing, meditation, laughing or to listening to one's body'. Instead, reflective practices were well adopted: all students wrote reflective learning diaries during their studies and thought that they were rewarded in the concert, which closed the workshop period (58 statements). *Social strategies* collected 46 statements out of which 'developing cultural understanding, becoming aware of the others' thoughts by playing together' amounted to 24 statements and 'cooperating with peers and cooperating with professionals' rose up to 22 statements. Being rewarded by an audience might also belong to this subclass, but it was placed in affective strategies of 'rewarding oneself'. This is a question of interpretation. The researchers thought that in the end the reward touched emotions and was personally affective.

Availing oneself of direct and indirect strategies shows that the overall mastering of strategies is at an appropriate, even surprisingly great level among the music students concerned (research question 1). Part of them were consciously used to it, and it seemed to form part of their habitual practices. Deep and surface learning and critical thinking strategies were analysed separately from the taxonomy. Critical thinking skills were advanced. The outcome produced another, compatible perspective for the results (research question 2).

In opposite to the pre-conceptions of the authors, the rewarding experiences were both cognitive and metacognitive not only emotional and social.

The feeling of success in the concert was shared by everybody. The experience of learning new things and overcoming individual difficulties brought joy as did the notion of the utility of their own earlier efforts. Working in a team with experts brought the feeling of self-efficacy (research question 3).

To have a wide, combinational perspective for the results, they have also to be observed from a teacher's and teacher educator's perspective. What benefit can they obtain from these learning strategies and the workshop method?

The research indicates that students and teachers are rather unanimous about their needs to master learning strategies. Consensus also appears when speaking for intensive courses in learning and striving towards a shared goal. This pattern of professional development is significant not only for students but for teachers' pedagogical knowledge enabling them to engage in the construction of their professional identity (Nissilä & Virkkula, 2015; Virkkula & Nissilä, 2014). Concerning music teachers, there is always difficulty in determining whether they are more educators than they are artists.

A significant observation comes from cross-professional collaboration. The professional musicians who participated in the project represented the same profession, but not the same instruments as the students. In that sense, the workshops offered cross-professional collaboration. This study emphasises the outcomes of changing relationships between educational experts and practitioners. The regular teachers, students, and professional musicians negotiated their tasks and especially students' learning objectives to reach the shared aim. Though the choices were successful in this project, in the future it will again be important to negotiate about the visitors' tasks, the focus of action and the expected outcomes. Collaborative processes between students, teachers, and visitors, including teacher trainers, added mutual trust and personal self-confidence in these cases and, thus, offer an interesting theme for investigation.

The findings show the great workload that the music students were willing to take. It concerned also the professional musicians who accepted their roles as mentors in addition to their regular work. The process showed shared ethos of the trade and the persons concerned. It also revealed the joy of playing, which is often lacking in strictly planned instrumental studies. Whether the studies concentrate on removing defects or enhancing musical expression depends on the cultural environment. In this process, the participants found a treasure.

In addition to learning to learn, the profitable use of workshops can be availed of in changing activities and in efforts to make processes better, flexible, and faster. It is about principles, rules, and concepts – not just tools. Learning through experiences and dialogue should be encouraged.

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Biographical note

Esa Virkkula, PhD, has been a teacher and musician since 1991. He has planned and implemented many popular and jazz music-training programs at various levels of education. He worked as a director of education of pop and jazz music in The Music Conservatory of Oulu in 2000-2011, and now works as a Principal Lecturer in Oulu University of Applied Sciences, School of Vocational Teacher Education. Virkkula's research interests have been cooperation of educational institutions and work life, socio-cultural learning and most recently competence-based education. These themes he has dealt with in his teaching, post-doctoral research, conference presentations and journal articles. As a musician, Virkkula has performed with a number of respected artists, e.g. Randy Brecker, Tim Hagans, Victoria Tolstoy and Dr. Lonnie Smith.

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Appendix 1

Music students' self-assessed strategies: a classification according to R. Oxford's (1990) taxonomy

DIRECT STRATEGIES							
Code	**I Memory Strategies**						
MS 1	a) grouping	b) associating	c) replacing earlier learnt habits with new				
MS 2	a) using imagery	b) musical mapping	c) using key triggers	d) representing sounds in memory			
MS 3	a) structured reviewing	b) structured arranging music					
MS 4	a) using physical sensation	b) using mechanical techniques					
Code	**II Cognitive Strategies**						
CS 1	a) Repeating	b) formally practicing with sounds & training	c) recognizing formulas and patterns	d) recombining or composing own music	e) practicing naturalistically		
CS 2	a) getting the idea quickly	b) using resources for communication through music					
CS 3	a) reasoning deductively	b) analysing expressions	c) analysing contrastively (across models)	d) translating music expressions to meanings	e) transferring (one skill/ expression/ tradition to another)	f) composing	
CS 4	a) taking notes	b) summarizing	c) highlighting				
Code	**III Compensation Strategies**						
C 1	a) using clues from music	b) using clues from personal experience					
C 2	a) switching to familiar ways of presentation	b) getting help	c) avoiding playing partially or totally	d) selecting the topic	e) adjusting playing	f) clever inventions	g) paraphrasing

INDIRECT STRATEGIES						
Code	**I Metacognitive Strategies**					
MES 1	a) overviewing and linking with already known material	b) paying attention	c) delaying expression to focus on listening			
MES 2	a) finding out about music learning	b) organizing learning	c) setting goals and objectives	d) identifying the purpose of the task	e) planning for the presentation of the task	f) seeking opportunities to practice in or for work life
MES 3	a) self-monitoring	b) self-evaluating				
Code	**II Affective Strategies**					
AF 1	a) using progressive relaxation, deep breathing or meditation	b) listening, e.g. sounds from nature	c) listening to others playing/ adaptation to the shared feeling	d) using laughter		
AF 2	a) making positive statements	b) taking risks wisely	c) rewarding oneself			
AF 3	a) listening to one's body	b) using a checklist	c) writing a learning diary	d) discussing one's feelings with somebody else	e) sharing attitudes	
Code	**III Social Strategies**					
S 1	a) asking for clarification or verification	b) asking for correction				
S 2	a) cooperating with peers	b) cooperating with professionals				
S 3	a) developing cultural understanding	b) becoming aware of others' thoughts and feelings	c) sharing thoughts and intentions, playing in an orchestra			

Parental Involvement as a Important Factor for Successful Education

Maša Đurišić*[1] and Mila Bunijevac[2]

To comply with the system of integrated support for their students', schools need to build partnership with parents and develop mutual responsibility for childrens' success in the educational system. In this way, parental involement are increased, parents' effort to support schools are encouraged, and they are directly making a positive impact to a successful educational system.

Considering the importance of parents' participation and involvement in school activities, in this paper, we will analyse the positive effects of parental involvement, summarize leading principles for the successful partnership of parents and school and present six factors (Parenting, Communicating, Volunteering, Learning at home, Decision-making and Collaborating with the community) and six models (Protective Model, Expert Model, Transmission Model, Curriculum-Enrichment Model, Consumer Model and Partnership Model) of parental involvement.

In addition, we will draw conclusions and make recommendations that are important for planning programs that are focused on the improvement of parent involvement.

Keywords: parents' involement, successful education, school-family partnership, examples of good practice

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Vključevanje staršev kot pomemben dejavnik uspešnega izobraževanja

Maša Đurišić in Mila Bunijevac

Skladno s celostno podporo učencem morajo šole vzpostavljati partnerstvo s starši in razvijati skupno odgovornost za uspeh otrok v šoli. Tako povečujemo vključevanje staršev, spodbujamo starševsko podporo šoli in neposredno pozitivno vplivamo na uspešnost vzgojno-izobraževalnega sistema. Upoštevajoč pomembnost sodelovanja in vključevanja staršev v šolske dejavnosti, v tem prispevku analiziramo pozitivne učinke vključevanja staršev, povzemamo vodilna načela za uspešno sodelovanje staršev in šol ter predstavljamo šest dejavnikov (starševska vloga, komunikacija, prostovoljstvo, domače učenje, sprejemanje odločitev in sodelovanje s skupnostjo) in šest modelov vključevanja staršev (zaščitniški model, ekspertni model, transmisijski model, model obogatitve kurikuluma, potrošniški model in partnerski model). Poleg tega oblikujemo sklepe in priporočila, pomembna za načrtovanje programov, ki so usmerjeni k izboljšanju vključevanja staršev.

Ključne besede: vključevanje staršev, uspešno izobraževanje, partnerstvo šol in staršev, primeri dobre prakse

Introduction

Many researchers recognise the important role that strong positive bond between homes and schools, play in the development and education of children (Edwards & Alldred, 2000; Henderson & Berla, 1994; Richardson, 2009; Sanders & Sheldon, 2009; Sheldon, 2009). The theories put forward have been supported, and reaffirmed, by numerous studies that have shown that good cooperation between schools, homes and the communities can lead to academic achievement for students, as well as to reforms in education. Research has also shown that successful students' have strong academic support from their involved parents (Sheldon, 2009). Furthermore, research on effective schools, those where students are learning and achieving, has consistently shown that these schools despite often working in low social and economic neighborhoods, have strong and positive school-home relationships (Sanders & Sheldon, 2009; Sheldon, 2009). More importantly, these effective schools with positive school climate, have made a real effort in reaching out to their students' families in order to bring about good cooperation. Sanders and Sheldon (2009) maintain that schools become successful when a strong and positive relationship among students, parents, teachers and the community has been established. All students' are more likely to experience academic success if their home environment is supportive (Henderson & Berla, 1994; Sanders & Sheldon, 2009).

Epstein (2001, 2009) alleges that there are many reasons for developing and establishing a partnership between school, family and community. The main reason for such a partnership is to aid students in succeeding at school. Other reasonsinclude improvinge school climate and school programs, developing parental skills and leadership, assisting families in connecting with others in the school and the community, and assisting teachers with their work. All these reasons emphasise the importance of parents playing an active role in their childrens' education and keeping a strong and positive relationship with schools.

Models of parental involvement

Educators and parents play major roles in the educational success of students. Students need a positive learning experience to succeed in school: one providing support, motivation, and quality instruction. With the increasing demands on the family, parental support in the education of students extends beyond the school building. Many families are faced with overwhelming and unpredictable schedules and circumstances while juggling school, sports,

family situations, family time, work schedules, and other responsibilities, allowing minimal time to provide support in any one given area (Swap, 1993).

Although it seems that parental involvement is researched the topic of many domestic and foreign studies, there is still concern regarding parental involvement and what constitutes effective parental involvement in the education of students. Educators, parents, and community members may have different opinions regarding effective involvement practices and the ways each can contribute to the educational process.

Parental involvement in the education of students begins at home with the parents providing a safe and healthy environment, appropriate learning experiences, support, and a positive attitude about school. Several studies indicate increased academic achievement with students that have involved parents (Epstein, 2009; Greenwood & Hickman, 1991; Henderson & Berla, 1994; Rumberger et al., 1990; Swap, 1993; Whitaker & Fiore, 2001). Studies also indicate that parental involvement is most effective when viewed as a partnership between educators and parents (Davies, 1996; Emeagwali, 2009; Epstein, 2009). By examining parents' and teachers' perceptions, educators and parents should have a better understanding of effective parental involvement practices in promoting student achievement.

Numerous researchers such as Berger (2008), Davies (1996), Epstein (2009), and Henderson and Mapp (2002) have studied parental involvement and its effects on the educational process over the years. A leading researcher of parental involvement is Joyce Epstein, the founder and director of the National Network of Partnership Schools at Johns Hopkins University. With numerous studies and work in over 100 publications, Epstein focuses on school, family, and community partnership programmes that will improve policy and practice in an effort to increase student academic achievement and student success. Epstein has identified a framework wich containing six important factors with regards to parental involvement. This framework is based on findings from many studies of what factors are most effective with regards comes to childrens education (Epstein, 1995, 1996, 2001, 2003, 2009). Those six factors are parenting, communicating, volunteering, learning at home, decision-making and collaborating with the community.

Parenting – includes all of the activities that parents engage in to raise happy, healthy children who become capable students. Unlike teachers, whose influence on a child's is relatively limited, parents maintain a life-long commitment to their children. Activities that support this type of involvement provide information to parents about their child's development, health, safety, or home conditions that can support student learning. Includes: parent education and

other courses or training for parents, family support programmes to assist families with health, nutrition, and other services, home visits at transition points to elementary, middle, and secondery school.

Communicating – Familes and schools communicate with each other in multiple ways. Schools send home notes and flyers about important events and activities. Parents give teachers information about their child's health and educational history. A school website is an additional mode of communication with parents and families. Includes: conferences with every parent at least once a year, language translators to assist families as needed, regular schedule of useful notices, memos, phone calls, newsletters, and other communications.

Volunteering – applies to recruiting and organising help and support from parents for school programmes and students' activities. There are three basic ways that individuals volunteer in education. First, they may volunteer in the school or classroom by helping teachers and adminstrators as tutors or assistants. Second, they may volunteer for the school; for instance, fundraising for an event or promoting a school in the community. Finally, they may volunteer as a member of an audience, attending school programmes or performances. Includes: school/classroom volunteer programme to help teachers, administrators, students, and other parents, parent room or family center for volunteer work, meetings, and resources for families, annual postcard survey to identify all available talents, times, and locations of volunteers.

Learning at home – pertains to providing ideas and information to parents about how they can best assist their children with homework and curricular-related decisions and activities. Parents helping their children with homework or takeing them to a museum, are examples of this type of involvement. These activities produce a school-oriented family and encourage parents to interact with the school curriculum. Activities to encourage learning at home provide parents with information on what children are doing in the classroom and how to help them with homework. Includes: information for families on skills required for students in all subjects at each grade, information on homework policies and how to monitor and discuss schoolwork at home, as well as family participation in setting student goals each year and in planning for college or work.

Decision making – refers to including parents in school decisions and to developing parent leaders and representatives. Parents participate in school decision making when they become part of school governance committees or join organizations, such as the parent/teachers association. Other decision-making activities include taking on leadership roles that involve disseminating information to other parents. Includes: active PTA/PTO or other parent

organizations, advisory councils, or committees for parent leadership and participation, independent advocacy groups to lobby for school reform and improvements, networks to link all families with parent representatives.

Collaborating with the community – pertains to identifying and integrating communities" services and resources to support and strengthen schools, students, and their families. Includes: information for students and families on community health, cultural, recreational, social support, and other programmes/services, information on community activities that link to learning skills and talents, including summer programmes for students.

Each of these factors can lead to various results for students, parents, teaching practices, and the school climate. In addition, each factor includes many different practices of partnership. Lastly, each factor poses challenges to involve all families and those challenges must be met. That is why Epstein (2001; 2009) considers it to be significant for each school to choose what factors are believed to be most likely to assist the school in reaching its goals for academic success, and to develop a climate of alliance between homes and the school. Even though the primary focus of these six factors is to promote academic achievements, they also contribute to various results for both parents and teachers (Epstein, 2003, 2009). For instance, it may be presumed that parents will gain more self-confidence in their role as parents, they will show leadership with decision-making, and they will have more effective and productive communication with their children with regards to school work, and will have more communication with other parents at the school. According to Henderson and Berla (1994), parents also gain a more positive attitude towards the school and its staff, and gain more confidence in assisting their children with homework, by being involved with their education. In addition, they are more likely to gather support for the school and its programmess in the community and become more active community members. For teachers, the benefits may be presumed to be better communication with parents, a deeper understanding of the family of their students and their situation, and more effective communication with both the homes and the community (Epstein, 2009). Henderson and Berla (1994) also claim that the schools will benefit from parental involvement by improved teacher morale, more support from families and higher student academic achievement. In addition, Clarke (2007) asserts that schools function best when parents and the community are active participants and have a sense of ownership of the school. Therefore, it is safe to say that these six factors not only benefit the students, but also their parents, teachers and schools.

Determinants of Parental Involvement

Parents' cognitions about their role have been identified as a major contributor to their willingness to engage in supportive parenting. We focused on three forms of parental cognition: parents' aspirations concerning their children's future occupation, their self-efficacy in rearing and educating their children, and their perceptions of the school (Eccles & Harold, 1996; Hoover-Dempsey & Sandler, 1997; Okagaki & Frensch, 1998).

Parental Aspirations – Parental aspirations refer to idealistic hopes or goals that parents may form regarding future attainment. Parents who hold high aspirations for their children's future are likely to be more willing to exert efforts to ensure that those aspirations are realized. Indeed, evidence from research suggests that educational and occupational aspirations are associated with the ways in which parents shape children's activities, time, and learning environment (Murphey, 1992).

Parenting Self-Efficacy – The construct of self-efficacy refers to „beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Research conducted in a variety of countries finds that individuals with high self-efficacy in a specific area exert effort in that area, persevere in the face of difficulty, and respond resiliently to adversity (Bandura, 2002). They are less prone to self-defeating thought patterns, and they experience less stress and depression than those with lower self-efficacy. The construct of self-efficacy is intended to be domain specific; particular experiences with respect to a given domain affect the individual's sense of confidence about acting efficaciously in that domain.

The domain of parenting self-efficacy has been examined at length, and parenting self-efficacy has shown to be an extraordinarily powerful determinant of effective parenting behaviour in Western societies. Parents with high self-efficacy are generally more optimistic, authoritative, and consistent in their interactions with their children than those with lower parenting self-efficacy (Ardelt & Eccles, 2001; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Olioff & Aboud, 1991). Additionally, theoretical formulations have identified parenting self-efficacy as a key determinant of parental involvement in schooling (Eccles & Harold, 1996; Hoover-Dempsey & Sandler, 1997). Empirical work suggests that parents with high self-efficacy are more likely to monitor their children's schoolwork and to participate actively at the school (Ardelt & Eccles, 2001).

Perceptions of the School – Parents' degree of involvement is likely to be affected by the school itself. If teachers appear to care about the welfare of the child, communicate respect for parents, and develop effective means of

communicating with families, parents are more willing and able to become involved in their children's schooling (Hoover-Dempsey & Sandler, 1997).

Parental involvement: a summary of empirical findings

Parents and families have a major impact on the success of the process of education and upbringing of children. Involvement of parents is related to their position at home (monitoring the learning of children), as well as participation in activities organized at school (parent-teacher conferences, volunteer activities, various forms of parental activism, workshops and seminars for parents). It is well established that parental involvement is correlated with school achievement of both children and adolescents (Long, 2007; Rich, 1987). Elementary school children gain greater academic, language, and social skills (Grolnick & Slowiaczek, 1994), middle and high school students have greater achievement and future aspirations (Eccles & Harold, 1993) and spend more time doing and completing homework (Epstein et al., 2009). Research shows that parental involvement is more important to children's academic success than their family's socioeconomic status, race, ethnicity, or educational background (Amatea & West, 2007; Henderson & Berla, 1994). Parental involvement can encourage children's and adolescents' achievement in many ways. One way that parents can contribute positively to their children's education is to assist them with their academic work at home. Parents who read to their children, assist them with their homework, and provide tutoring using resources provided by teachers tend to do better in school than children whose parents do not assist them (Ball & Blachman, 1991; Izzo et al., 1999). Futhermore, research shows that the level of parental involvement is associated with academic success. Children whose parents are actively involved in their schooling benefit better than children whose parents are passively involved. Specifically, if parents attend teacher conferences, accept phone calls from the school, and read and sign messages from school, their children will benefit academically more than children whose parents do none of the above. Furthermore, children excel even more when their parents assist them at home with their homework, attend school sponsored events, and volunteer at their children's schools (Suizzo, 2007; Weisz, 1990).

Barriers to parental involvement

Although parental involvement is recognized as being of significance in the education of children, there remains great diversity concerning parental involvement. Some factors exist over which schools have little control and these

factors have become of great interest to educational decision makers (Feurstein, 2000).

Today's parents are often preoccupied with the distractions and demands of daily life. Burdened by low-income, inflexible work hours and language barriers, some parents are unable to attend school activities or participate in the schooling of their children on a regular basis (Ho, 2009). Bæck (2010) as well as Lee and Bowen (2006) cite cultural norms, insufficient financial resources, and lack of educational attainment as barriers to parental involvement in school.

Davis (1996) found that many parents suffer from low self-esteem and others did not experience success in school themselves and therefore lack the knowledge and confidence to help their children. Parents who did not experience success in school may view it negatively (Greenwood & Hickman, 1991). Parents may be intimidated by the language, the curriculum, and the staff; consequently they avoid communication with the school (Flynn, 2007).

Rutherford and Edgar (1999) recognize that parents have increased difficulty in being involved in their student's secondary education as determining which educator is responsible for which part of the child's academic programme can be overwhelming. Hill and Taylor (2004) assert that "parents from lower socioeconomic backgrounds face many more barriers to involvement, including nonflexible work schedules, lack of resources, transportation problems, and stress due to residing in disadvantaged neighborhoods" (2004, p. 162). Ascher (1988) reported that low-income urban parents can and want to participate in the education of their children as much as middle-class parents. She also reported that, single-parent participation is often hindered by inflexible leave policies and child-care responsibilities. Many school officials tend to decide in advance that single and low-income working parents can not be approached or relied upon. They are not expected to participate in their children's classroom, attend meetings, or provide assistance with home learning activities (Ascher, 1988).

Williams and Sanchez (2011) identify four areas that are barriers to involvement: time poverty, lack of access, lack of financial resources, and lack of awareness. Johnson (1994) asserted that "feelings of inadequacy, limited school background, or preoccupation with basic necessities may prevent parents from communicating with schools" (1994, p. 46). Lee and Bowen (2006) and Dika and Singh (2002) cite social capital in families as being positively linked to their students' achievement, graduation rates, higher educational attainment, as well as motivation and involvement in school. Similarly, Ho (2009) discusses the benefit of parents' involvement in schools, noting that it helps parents overcome a lack of social capital. Likewise, Hill and Taylor (2004) assert that

parental involvement in the school supports students' achievement by increasing the parents' social capital.

Students are a critical component for successful school, family, and community involvement and can create a barrier for partnerships when they fail to fulfill their duty (Epstein, 1995). Students are often responsible for delivering information and communicating with their parents regarding school programmes, activities, and events (Epstein, 1995).

In programmes that require high level of involvement, teachers help students understand their role and the importance of actively participating in the family, school, and community partnership (Epstein, 1995). Given decreased budgeted funds in education and increased expectations, school administrators and teachers must take the initiative to involve parents in an effort to assist the educational achievement of students (Wherry, 2009). Some school administrators and teachers may not know how to involve parents; therefore, educators lacking this knowledge could be taught techniques for involving parents and creating partnerships (Greenwood & Hickman, 1991). Administrators and teachers may not fully understand the importance of parental involvement and the effects of parental involvement on student achievement (Flynn, 2007).

Often, teachers believe parents do not support the school and do not discipline children when there has been a problem at school. When teachers do not feel parental support, they often believe it is a waste of their time to contact parents (Flynn, 2007).

To overcome the barriers preventing parental involvement, schools need to provide a welcoming climate where the school staff is respectful and responsive to parents (Wherry, 2009). It is critical that administrators and teachers encourage respectful two-way communication between the school and home (Wherry, 2009). Bouie, an educational consultant stated, "The answer is to stop treating parents like „clients" and start treating them like „partners" in helping children learn" (as cited in Wherry, 2009, p. 7). A survey of parents in four school systems concluded that parents want to be treated with respect and do not want a professional client relationship (Davies, 1991). Failure to sufficiently train preservice teachers is a significant obstacle in promoting parental involvement in the schools (Epstein, 1995). Preservice teachers could work with parents as part of their teacher education programme and internship (Greenwood & Hickman, 1991). Classes could be incorporated into teacher education programmes and advanced degree programs to assist in defining an educator's role in school, family, and community partnerships (Epstein, 1995).

Some school systems have employed parent involvement coordinators to lead and coordinate parental involvement activities and programmes within

the system in an effort to overcome obstacles between the home and school (Epstein, 2001). Epstein (2009) described the role of parent involvement coordinators as a way of encouraging more parents to become involved in a variety of aspects of the school. Parent involvement coordinators often conduct workshops for parents to inform them of the school curriculum and remind them that they are their child's most important teacher (Epstein, 2009).

Adequately parent involvement: examples of good practice

Considering the research findings, their own practical experience, as well as discussions with other experts, Bouffard and Weiss (2008) summarize some of the basic principles that the process of involving families can make meaningful and useful. First, the involvement of parents must be part of a broader strategy of complementary support learning and development as a systematic effort supported by joint action of all stakeholders. Furthermore, the involvement of parents should be viewed as a continuous process that has its evolutionary stages through childhood and adolescence, and is especially important in the periods of the transition of children from one to another level of schooling. However, not all parents have equal capacities for fuller participation in all activities and not all schools are interested and able adequately support participation in them. Research shows that the traditional system of parental participation, despite good intentions, usually leaves out the participation of non-dominant parents. In the modern school system, there is no generally accepted model of parental participation.

Analysing a number of existing approaches in establishing an adequate model of the relationship between parents and schools, Swap (1993) identifies three models of parental involvement.

Protective Model – the goal of this model is to avoid conflict between teachers and parents by keeping the teaching and parenting functions separate (Swap, 1993). It is referred to as the protective model because its objective is to protect the school from interference by parents. The teacher's responsibility is to educate children, while the parent's responsibility is to make sure children get to school on time with the correct supplies. In this model, parental involvement is seen as unnecessary and as potentially interfering with the education of children.

Transmission Model – is predicated on the view that teachers see themselves as the primary source of expertise on children but who recognize the benefits of using parents as a resource (Swap, 1993). In this model, the teacher

remains in control and decides on the intervention, but does accepts that parents can play an important role in facilitating children's progress. Teachers using this approach must have additional skills, including techniques to effectively guide parents and interpersonal skills to establish productive working relationships. One drawback of this approach is the assumption that all parents can, and should, take on the role of acting as a resource (Swap, 1993). This model has the potential to overburden parents by placing excessive demands on them to carry out activities in the home.

Curriculum-enrichment Model – the goal of this model is to extend the school curriculum by incorporating parent's contributions (Swap, 1993). This model is based on the assumption that parents have valuable expertise to contribute and the interaction between parents and teachers will enhance the curriculum and the educational objectives of the school. Parent involvement in this model focuses primarily on curriculum and instruction within schools. The major drawback to this model is that it involves teachers permitting parents to have tremendous input regarded what is taught and how it is taught. In some cases, this may seem threatening to the teacher.

Ten years later, Hornby (2011) addes descriptions of three more models:

Expert Model – in this model teachers consider themselves to be the experts regarding all areas of the development and education of children, whereas parent's views are given little credence (Cunningham & Davis, 1985). Teachers maintain control over all decisions, while the parent's role is to receive information and instruction about their children. Parent's views and feelings, the need for a mutual relationship, and the sharing of information are given little, if any, consideration.

Consumer Model – In this model, teachers function as more of a consultant while parents decide what action is to be taken (Cunningham & Davis, 1985). The responsibility of decision-making lies on the shoulders of the parents, but it is the teachers' responsibility to provide parents with relevant information and the options available. In this model, teachers defer to the parents, who are placed in the expert role. Because parents are in control of the decision-making process, they are more likely to be satisfied with the services they receive, to feel more confident in their parenting, and to be less dependent on professionals.

Partnership Model – is the most appropriate model one in which teachers are considered to be experts on education and parents are viewed as experts on their children (Hornby, 2001).The goal is to establish a partnership in which teachers and parents share expertise and control in order to provide the optimum education for children, each contributing different strengths to

the relationship. Mutual respect, long-term commitment to a wide range of activities, and sharing of planning and decision-making responsibilities are the essential components for true partnerships between parents and teachers are to occur.

The essence of effective partnerships between parents and school staff was summarized in seven principles by Turnbull and colleagues (2011). A key principle of effective partnership is trust. The teacher is required to have reliable, confidential, open and honest relationships with parents. Furthermore, the relationship must be based on mutual respect which means respect for the opinions of others and respect for the dignity of others. Parents should be convinced of the competence of persons who are professionally involved in the work with their children. Effective partnerships require two-way communication that will enable the exchange of knowledge and ideas between all parties involved. No less important is the imperative of protecting children, which is achieved through early identification of problems, their solution, the identification of appropriate strategies and the promotion of knowledge about the protection of children.

Conclusion

Research has indicated that great schools have effective partnerships with parents (Davies, 1996); therefore, school, family, and community partnerships are critical component in educating students.

Parental involvement provides an important opportunity for schools to enrich current school programmes by bringing parents into the educational process. Increased parental involvement has been shown to result in increased student success, enhanced parent and teacher satisfaction, and improved school climate. To ensure effective parental involvement, schools may have partnership programmes in place that continually develop, implement, evaluate, and improve plans and practices encouraging family and community involvement. Schools can encourage involvement in several of areas including parenting, learning at home, communication, volunteering, decision-making, and community collaboration. Effective parental involvement programmes are built upon a careful consideration of the unique needs of the community. In order to build trust, effective approaches to parent involvement rely upon a strengthbased approach, emphasizing positive interactions. Though specifics may vary, all parent involvement programs share the goal of increasing parent-school collaboration in order to promote healthy child development and safe school communities.

There must be mutual trust and respect between the home, school, and community. Partnership programmes within the school can train volunteers on specific ways and strategies to assist in the classroom or school. With this type of training, all volunteers will know the expectations and have a better understanding of the operations of the school. Schools need to attempt to involve numerous parents and community members in the education of students through effective partnership programmes in an effort to express the importance of education. Finally, schools may implement involvement activities that concentrate on involving all parents. Administrators and educators must provide a welcoming and inviting atmosphere to make the school less intimidating and more comfortable for those parents who have negative experiences in the school. Interactions between the school and home need to be more positive, requiring teachers to contact families throughout the year and not just when problems arise. It is may be beneficial for administrators and educators to attempt to involve all parents in the education of their children and make the educational experience more positive for everyone involved.

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The Pluralisation of Family Life: Implications for Preschool Education

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The article takes as its starting point the public debate about the newly proposed Family Code in Slovenia in 2009. Inter alia, the Code introduced a new, inclusive definition of the family in accordance with the contemporary pluralisation of family life. This raised a number of questions about how – if at all – various families are addressed in the process of preschool education in public preschools in Slovenia. We maintain that the family is the child's most important frame of reference. It is therefore necessary for the preschool community to respect family plurality and treat it as such in everyday life and work. In addition, preschool teachers and preschool teacher assistants are bound by the formal framework and the current curriculum, which specifies that children in preschools must be acquainted with various forms of families and family communities. This also implies that parents – despite their right to educate their children in accordance with their religious and philosophical convictions – have no right to interfere in the educational process and insist on their particular values, such as the demand that some family forms remain unmentioned.

Keywords: family, pluralisation of family life, preschool, curriculum

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Pluralizacija družinskega življenja: implikacije za predšolsko vzgojo

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V izhodišče članka postavljava javno razpravo o novem predlogu Družinskega zakonika v Sloveniji leta 2009. Omenjeni zakon je skladno s procesom pluralizacije družinskega življenja vpeljal novo, inkluzivno definicijo družine. To je vzpostavilo vrsto vprašanj o tem, kako in ali sploh so različne oblike družin naslovljene v predšolski vzgoji in izobraževanju v javnih šolah v Sloveniji. Družino razumeva kot otrokovo najpomembnejšo referenčno točko, zato je pomembno, da tisti, ki delujejo v predšolski vzgoji, spoštujejo pluralnost družinskih oblik in da različne družinske oblike na tak način tudi naslavljajo pri svojem delu. Poleg tega vzgojitelje in pomočnike vzgojiteljev k temu zavezujeta formalni okvir in obstoječi kurikulum, ki določa, da se morajo otroci seznanjati z različnimi oblikami družin in družinskih skupnosti. To hkrati pomeni, da starši – kljub pravici, da svoje otroke vzgajajo skladno s svojimi verskimi in filozofskimi prepričanji – nimajo pravice posegati v izobraževalni proces in vztrajati pri svojih partikularnih vrednotah, kot je na primer zahteva, da določene oblike družin niso omenjene.

Ključne besede: družina, pluralizacija družinskega življenja, predšolsko izobraževanje, kurikulum

Introduction

In September 2009, the Ministry of Labour, Family and Social Affairs presented the new Family Code to the public. It was intended to replace the more-than-thirty-year-old (and thus somewhat outdated) Marriage and Family Relations Act (Zakon o zakonski zvezi in družinskih razmerjih, 1976). Although the Family Code contained over 300 articles and regulated a relatively wide area of family life and partnerships, the real causes of disagreement during the public debate were the three articles that opened adoption to same-sex couples and introduced marriage equality and a new, inclusive definition of the family into Slovenian legislation. Legally and, most importantly, symbolically, the definition encompassed various forms of families and included social parenting in addition to biological parenting. The new definition thus shifted from "blood" to "care": that which establishes a family relationship is a relationship of care between a child and an adult (Kogovšek, 2010; Rajgelj, 2010). The Family Code was passed by Parliament in September 2011, but it was rejected in a nationwide referendum in March 2012 (Kuhar, 2015).

The public debate over the Family Code explored a wide range of relevant issues; for instance, the question about how – if at all – public preschools and schools address the process of the pluralisation of family life. Due to the possibility of gay and lesbian adoption, same-sex families were particularly emphasised. The first systematic research study to investigate the question (Tuš Špilak, 2014a; Tuš Špilak, 2014b), which involved 569 Slovenian preschool teachers and preschool teacher assistants (hereafter referred to as educators), demonstrated that almost 68% of the respondents do not mention same-sex families when talking about different families. The respondents most frequently stated that they do not talk about these families because there are no children from such families in their preschool group (53%), because children would not understand it (13%), and because they do not possess sufficient information on the issue (7.4%). As many as 7% believe that such a family is not a real family, 6% said that parents would disagree if they talked about it with the children, and a little over 5% believe that the Preschool Curriculum does not require it. Some 14% of the respondents said that they would only discuss same-sex families in preschool if the head teacher agreed, and 13% would accept a demand of parents that same-sex families should not be talked about in preschool.

These figures represent the point of departure for our article, which considers the relationship between formal provisions and the professional autonomy of educators, an issue that is directly related to education in public preschools in Slovenia. We will mainly be interested in discussions about families,

and in educational actions that formally oblige educators during the process of preschool education when dealing with this question.

Our assumption is that preschools are public educational institutions that do not function in an empty space; rather, their frames of functioning are defined by the Constitution, legal acts, curricular documents, etc. Professional autonomous actions are, therefore, not independent of the binding formal framework; quite the contrary, formal provisions protect participants in preschool education from professional autonomy turning into educators' unprofessional arbitrariness, on the one hand, and from parents, preschool management, state ministries or anybody else interfering in professional decisions, on the other. In this sense, such provisions are far from being an obstacle to professional work in preschools, which seems to be quite a common presupposition (see, e.g., Batistič-Zorec & Hočevar, 2012; Hočevar, Kovač Šebart & Štefanc, 2013).

The formal framework and the planning and conducting of preschool education in public preschools in Slovenia

The formal (and ethical) value framework of how public preschools function is primarily provided by the Constitution of the Republic of Slovenia (Ustava Republike Slovenije [1991] 2011, hereafter referred to as Constitution), which contains a provision stating that, in Slovenia, everyone is equal before the law, and that everyone shall be guaranteed equal human rights and fundamental freedoms irrespective of any personal circumstance (Article 14). Human rights and fundamental freedoms can only be limited by the rights of others (Article 15), while everyone has the right to personal dignity and safety (Article 34) and to the inviolability of physical and mental integrity, as well as privacy and personality rights (Article 35).

Article 56 of the Constitution is also pertinent to the issue examined here. It states that children enjoy special protection and care and are granted human rights and fundamental freedoms consistent with their age and maturity. The protection of personal data, the right of access to the collected personal data that relate to an individual, and the right to judicial protection in the event of any abuse of such data are guaranteed by Article 38 of the Constitution.

The quoted constitutional articles demonstrate that the concept of human rights (and duties) is the fundamental legal and ethical norm in Slovenia (Kovač Šebart, 2013; Kovač Šebart & Krek, 2009). From the aspect of legality and legitimacy, this concept is the normative basis that must be followed during education in public educational institutions (for more on this, see Kovač Šebart,

2002; Kovač Šebart, 2013; Kovač Šebart & Krek, 2009; Kovač Šebart & Krek, 2010). Public educational institutions must, then, orient their participants in such a way that the value guidance derived from rights imposes duties and actions that embody respect for every person, regardless of the differences between people.

Respect for human rights is the support, safeguard and corrective that enables educators to avoid arbitrary, albeit inadvertent actions based on personal, particular value judgements or on individual parents' or children's particular values. It is the professional duty of educators not to let such views hinder the equal treatment of all children (Zaviršek & Sobočan, 2012). They must insist on the implementation of the principle of non-discrimination and act in accordance with the norm of respect for everybody, which is a professional duty in relation to others. This is the limit to the implementation of the demands originating in particular convictions (Kovač Šebart, 2013; Kovač Šebart & Krek, 2009), even when, for instance, they are put forward by parents.

In view of the latter, Article 54 of the Constitution is relevant, stating that parents have the right and duty to maintain, educate and raise their children; furthermore, Article 41 stipulates that parents have the right to provide their children with a religious and moral upbringing in accordance with their own beliefs (ibid.). In Slovenia, educational institutions – and, thereby, educators – are bound by Article 2 of Protocol No. 1 to the European Convention for the Protection of Human Rights and Fundamental Freedoms (1950), specifying that, in the exercise of any functions that the state assumes in relation to education, it must respect the right of parents to ensure such education that conforms to their own religious and philosophical convictions.

Decisions by the European Court of Human Rights and the European Commission on Human Rights have developed the general interpretations of the article: in public educational institutions, the state is not obliged to provide education in accordance with parents' wishes; however, it must enable parents to find private preschools and schools where their children will be given such education, but the state itself is not obliged to either establish or finance them (Kodelja, 1995). It is important to emphasise that public educational institutions in Slovenia must not impose on children or require them to identify with values towards which individuals adopt different attitudes. Quite the opposite: they must express such differences very clearly and allow for their coexistence (Kovač Šebart & Krek, 2009), while educational content must be imparted in an objective, critical and pluralist way.

Respect for human rights as a norm, therefore, does not require public preschools in Slovenia to yield to parents' demands that educators should not

address certain topics because they express viewpoints that contradict the parents' convictions. Educators, likewise, cannot overlook the formal framework of norms, principles and goals, not even in the name of professional autonomy. Excuses such as that they will not address an issue because they do not know how to deal with it, or that they are worried about not having enough knowledge, or that they will be accused of indoctrinating children, or that the institution's management or other educators are not keen on the issue, etc. (Zaviršek & Sobočan, 2012) do not justify the exclusion of such topics from (pre)school work. Consequently, discussion about an issue in public preschools may objectively sidestep certain particular values and parents' beliefs, and during such an educational process some children will be morally distressed. Respect for human rights and duties as a common value framework requires the educator not to impose or demand the adoption of any viewpoint about which different groups of people hold different beliefs. The decision on how to address a topic that is related to particular convictions belongs to the educator's professional autonomy. The choice of the method, however, cannot bypass the formal framework, which insists on the presentation of differences and respect for different views.

Legislation and the curriculum

Article 2 of the Organisation and Financing of Education Act (Zakon o organizaciji in financiranju vzgoje in izobraževanja [1996] 2007), which is the framework act in the area of education, includes the following aims of the education system in Slovenia: ensuring the individual optimum development regardless of his/her personal circumstances, educating for mutual tolerance, developing equal opportunities for both genders and an awareness of the equality of genders, respect for diversity and cooperation with others, respect for children's and human rights and fundamental freedoms, developing abilities to live in a democratic society, and encouraging an awareness of the individual's integrity.

Logically following the constitutional norms granting everybody equal rights and fundamental freedoms regardless of any personal circumstances, Article 3 of the Preschool Education Act (Zakon o vrtcih, [1996] 2005) also specifies the principles to which education in public preschools must adhere. These are, among others, the principles of democracy, plurality, autonomy, professionalism and responsibility of employees, equal rights for children and parents, diversity among children, the right to choose and the right to difference.

The Preschool Curriculum (Kurikulum za vrtce, 1999; hereafter referred to as the Curriculum) includes the following principles: the principle of equal

opportunities, the principle of respect for diversity among children, and the principles of multiculturalism, democracy and pluralism. The principles complement the constitutional and statutory norms presented above, but are here related to broader content norms that educators in preschools must follow.

Needless to say, the principles must not remain a dead letter; rather, they must be realised in the life and work of each preschool. They express the general guidelines and conditions for the successful methodical execution of educational activity in terms of its goals, processes and content. At the same time, they require educators to reflect upon their realisation when planning, conducting and evaluating educational work.

In addition, the Curriculum (1999) defines goals and activities in the areas of movement, language, art, society, nature and mathematics. The goals specified within each individual activity area are the framework in which content and activities provide working proposals for educators. The goal-oriented strategy of curricular planning – in combination with the process/developmental strategy, which is the expert basis for planning content and activities in preschool education in public preschools in Slovenia – is based on the assumption that specific goals in individual activity areas are the curricular starting points for planning preschool education. According to France Strmčnik (2001, p. 203), goals direct expert decisions, although they are not themselves such decisions. A great number of decisions relate to specific educational situations, which cannot be predicted in advance or from the outside. Nevertheless, educators' decisions demonstrate better quality and greater consistency if they are directed by goals.

Goals are defined at different levels of curricular planning (state, institutional, individual) and in different documents, both legal/formal and curricular (Kelly, 2009). In Slovenia, preschool education at the state level is primarily defined by the aims and goals of education as specified in the Organisation and Financing of Education Act (Zakon o organizaciji in financiranju vzgoje in izobraževanja, [1996] 2007, Article 2), by the goals of preschool education as specified in the Preschool Education Act (Zakon o vrtcih, [1996] 2005, Article 4) and by the goals and objectives as specified in the Curriculum (Kurikulum za vrtce, 1999), for the programme of preschool education as a whole and for individual preschool education areas.

Related to the goals are content and activities that are interrelated, developed and complemented at the level of the (pre)school curriculum (Kurikulum za vrtce, 1999). When choosing content, educators follow the principles and goals that are presented above, taking account of developmental-psychological and other characteristics relevant to the educational process, as well as children's interests. Furthermore, the provision in Article 92 of the Organisation

and Financing of Education Act (Zakon o organizaciji in financiranju vzgoje in izobraževanja, [1991] 2007) is also important to the planning, execution and evaluation of the educational process, requiring educators to carry out educational work in accordance with the law and valid programmes in an objective, critical and pluralist, as well as professionally autonomous, manner.

Educators are bound to transmit knowledge based on science, scientific findings and scientific argumentation. This formal norm nevertheless recognises that public educational institutions are not neutral in the sense of being without values; rather, they rely on the values that contemporary society perceives as shared. At the same time, public educational institutions must allow for plurality when particular values, beliefs and convictions are concerned, but only as long as individuals do not overstep the boundaries of tolerance and constitutionally guaranteed human rights. Plurality is also binding when educators select learning content.

The selection of content: The case of the family and various family forms

The described norms and principles, and the ways in which they affect how preschool education in public preschools is planned and conducted, will be illustrated with the case of the family. The family forms part of the content that the Curriculum (Kurikulum za vrtce, 1999) mainly integrates into the activity area of society. This is the same for both age groups, and the Curriculum includes the following as one of the goals in the area of society: "the child learns about various forms of families and family communities" (Kurikulum za vrtce, 1999).

In the area of society, the goals specified that are related to the attention given to the family define that children should experience preschool as an environment, "with equal opportunities for participation in activities and everyday life, regardless of gender, physical and mental constitution, nationality, cultural origin, religion, etc.". Moreover, children should learn about themselves and others, including "learning about differences between the habits of our culture and other cultures, and between different social groups". Finally, the goals also define "learning about intercultural and other differences" and "encouraging sensitivity to the ethical dimension of difference" (Kurikulum za vrtce, 1999, p. 50).

The Curriculum goes on to define nineteen goals related to the area of society whose content involve gaining experience and accepting difference, understanding the equality of everybody, the need for people to cooperate, challenging gender-related stereotypes, developing abilities to establish friendships, understanding rules for desirable behaviour based on the non-infringement

of the rights of others, etc. The 19 goals of the Curriculum also include the one specifying that the child must learn about "various forms of families and family communities" (Kurikulum za vrtce, 1999, pp. 50–51).

The goals and objectives just presented provide the basis for planning, realising and evaluating the programme of preschool education. We presume they can be attained through a planned realisation of the programme. Planning activity considerations are one of the key steps of individual curricular planning. Educators are autonomous in this respect, but the Curriculum provides them with sufficient support, listing examples of activities for both age groups.

Examples of activities for children aged between one and three years that directly relate to the family include: talking about family members and events at home, if the child wants to talk about them; learning about different living habits and forms of family and social life in different cultures and social groups, which acquaints the child with differences between people; and changing gender-specific roles (for example, playing at doing different jobs, housework and suchlike) (Kurikulum za vrtce, 1999, p. 52).

Examples of activities for children aged between three and six years that relate to the family include: talking about home, family and the child's experiences, if the child wants to talk about them or starts the conversation him/herself; learning about different forms of family communities; acquiring experience by changing gender-specific roles; acquiring social skills, which includes understanding and taking account of the needs, emotions and convictions of others; and other activities, such as discussion about prejudices and stereotypes (Kurikulum za vrtce, 1999, pp. 51–54).

In addition to goals, objectives and examples of activities, the Curriculum specifically defines the role of adults in achieving the goals in individual areas. In the area of society, it states that children become acquainted with their restrictions and the limits to acceptable behaviour, which primarily implies non-restriction of others. Preschools should be an environment in which children are confirmed as individuals and have the possibility of developing a sense of cooperation (Kurikulum za vrtce, 1999). Educators must enable children to accept rules critically, cooperate in their adjustment, and "cooperate in the creation of a culture of coexistence in differences and diversity. It must be guaranteed that children experience preschool as an environment with equal opportunities for participation in activities and everyday life regardless of gender, physical and mental constitution, nationality, cultural origin, religion and other circumstances, and also as an environment in which they can develop a safe gender identity" (Kurikulum za vrtce, 1999, p. 54). The Curriculum also states that adults should facilitate connections between preschools and children's

families, manage the information flow between children and families, and, in the first age group, encourage the presence of family members in the group (Kurikulum za vrtce, 1999, p. 50). This means that educators "know the cultures of the children in their groups and respect the families' orientations" (Kurikulum za vrtce, 1999, p. 50).

It is important that adults do not allow "comments, references and actions that stereotype people. They accept differences among people without exaggeration, and avoid comparisons when observing individual children" (Kurikulum za vrtce, 1999, p. 55). The document also clearly specifies that "preschools must not isolate themselves from the environment of their children and their experiential worlds; similarly, they must not use activities to transmit into preschools differences that could result in children not feeling equal" (Kurikulum za vrtce, 1999, p. 55). Furthermore, the Curriculum also states that adults must ensure corners in playrooms that are suitably equipped for social life, "including such books that can help children to become acquainted with differences between people, intercultural differences and historical changes" (Kurikulum za vrtce, 1999, p. 55).

Thus, there should be no dilemma (either formal, professional or ethical) for educators in public educational institutions: in preschools (in both age groups) they address content that relates to families and various family forms. Children learn about differences and similarities between people, and about their equality. The language of instruction is inclusive (e.g., talking about parents and a parent). In so doing, educators follow the principle of objective, critical and pluralist education.

What does this mean for the autonomous professional selection of content? It means that, in addition to the nuclear family model (mother + father + child/ren), educators must not avoid addressing families that differ from the nuclear model: one-parent families, reorganised families (families in which at least one of the partners has had an earlier family), extended families (families with at least three generations living together: children, parents, grandparents), same-sex families (families in which both parents are the same sex), as well as foster families, adoptive families, and so on. The key emphasis is on the "form", as differences from one model to another do not imply a difference in terms of the child's security and the wellbeing of family life. It is important to underline this, as the studies mentioned at the beginning of this article (Tuš Špilak, 2014a; Tuš Špilak, 2014b) concur with Tanja Rener (2006), who stresses that the idea of the nuclear family has been so overwhelmingly present in the collective imaginaries of western culture for decades (at least since the 1950s) that other family forms are defined in relation to that form: frequently as unusual, deviant or

even pathological, although such differentiation has no scientific basis in terms of the child's wellbeing. The research on educators in Slovenian preschools did in fact point to significant remnants of collective imaginaries, which appear in the form of more or less hidden prejudices towards homosexuals and their families. Every second respondent in the research thought that a child needs a father and a mother for optimum development.

Although the majority may still claim, despite this opinion, that they do not discriminate against children from other types of families, their views are likely to be reflected in the educational process and in the attitude towards children and parents from families differing from the nuclear model.

It is, therefore, very important that the Curriculum (Kurikulum za vrtce, 1999) clearly states that educators must select content that demonstrates the existence of different family types and lifestyles, and that they must present the content in a way that avoids hierarchising different family forms. This means that, when discussing families, they must not position one single family form as the norm, despite the fact that the majority of the children – or even all of them – may live in such a family. Such positioning would, at the very start, self-evidently imply that, for instance, the difference between one-parent and nuclear families means a deficiency of the former in comparison with the latter ("real"); thus, such a family is not addressed equally from the very beginning. Learning about one (dominant) family type or only those types of families in which children in the group live would disable the achievement of the Curriculum (Kurikulum za vrtce, 1999) objective that requires children to become acquainted with various family forms. Sensitisation to the process of the pluralisation of family life is important from at least two perspectives. Firstly, the presented family models must reflect the family reality of all of the children in a preschool group. Only then is it possible to ensure an inclusive and safe environment in which the child will recognise her/his own experience of the family (Oliveira-Formosinho, 2009). Secondly, it is important for children to become acquainted with other family forms that are not their own, even though they may not (yet) see them in their immediate environment. It would be wrong, then, not to address, for example, adoptive families only because there is no child from such a family in the group.

It is also important to draw attention to the unacceptable approach that outwardly follows the curriculum goal of learning about different families and family communities, but which is, in fact, exclusive, because it devotes the majority of time when debating, playing, reading books, etc. to the nuclear family with the observation that "there are also other types of families" remaining nothing but a footnote. This approach is based on a hierarchical discussion of

families, where the statistically dominant family model becomes the value-dominant family-life form. If we recognise the fact that the issue of the family permeates practically everything that occurs in preschools, it is important for educators in everyday actions (not only when addressing families in the area of society) to pay attention to the diversity of family life, regardless of their personal preferences or viewpoints.

Each child comes to preschool from a family environment and returns to it. The family belongs to the cultural phenomena that really concern each child directly and subjectively (Zaviršek & Sobočan, 2012). Consequently, it is important that preschool reality should respect family plurality and consistently address it as such. If children and adults in preschools "are not familiar with differences between family forms, or if adults purposefully ignore them or talk about them derogatorily, the differences may become a source of prejudices, due to which some children become targets of various types of violence or discrimination" (Zaviršek & Sobočan, 2012, p. 102). Moreover, prejudices harm all of the participants in the educational process, and this concerns learning content, educational actions and everyday life in preschools. As we have seen, educators are formally bound to create the conditions for an expression of children's differences that does not hierarchise, but rather builds on equality, on the levels of content, activities and materials. At the same time, educational work must be conducted in an objective, critical and pluralist manner. The Curriculum unambiguously states that public preschools must provide children with experience and knowledge regarding the diversity of the world, since this is the only way for differences between children to be taken into account during the educational process (Zaviršek & Sobočan 2012).

In view of the above, and in accordance with the presented formal and professional frameworks, educators must employ a definition of the family that is sufficiently differentiating and, at the same time, inclusive and non-discriminatory. Accordingly, they must include the forms and ways of family life that actually exist in society without making ideological judgements differentiating between them or putting one of them in the position of the norm, with the other forms representing a mere deviation from the norm (Rener, 2006). One of the possible outlines is provided by the official definition of the family in Slovenian legislation, stating that the family is "a living community of parents and children, which enjoys special protection because of the interest of children" (Zakon o zakonski zvezi in družinskih razmerjih, Article 2, [1976] 2004). This definition is sufficiently inclusive and differentiating, under two conditions: (1) if "parents" are not understood in the merely traditional sense of biological parents, which would exclude all social parents who actually perform the role of parents but are

not the children's biological parents; and (2) if "parents" are not understood as only two parents, which would exclude (at least) one-parent families.

There are fewer doubts with the 1994 definition of the family adopted by the United Nations on the occasion of the International Year of the Family and prepared by a group of family experts headed by Wilfried Dumon from the Catholic University of Leuven (Belgium): "Family is at least one (adult) person or a group of persons which cares for a child and is regarded as a family under the legislation and practice of a State" (Rener, 2006, p. 16). This so-called inclusive definition of the family has a relationship of care between an adult and a child as the basic premise of family life, whereby it is irrelevant whether the adult is the child's biological parent or not. This definition encompasses the widest possible family plurality as the principal characteristic of contemporary family life, and this is what educators' work regarding families should be like in preschools (i.e., inclusive). What is more, it is imperative that the family is not an isolated topic that is only discussed on a specified day, as children bring their family lives to preschools daily.

Conclusion

The family is the child's most important frame of reference, so it is not surprising that the formal framework that regulates educational work in Slovenian preschools states – to simplify matters a little – that nobody who is affected by preschool work should be exposed due to her/his family's characteristics. Everybody must be treated equally, without emphasising particularities. However, this does not mean, as we have said above, that differences should be erased or intentionally ignored; it simply means that differences should not be hierarchised and nobody should be excluded. Families are not something static; they are not, in Morgan's (1999) words, a noun, but rather a verb: families are forever "made" and "lived". As active subjects, we also create the reality of educational institutions, which must respect family plurality. In this respect, educators are faced with very clear demands: "In preschool, children must undergo concrete experiences in realising fundamental human rights and democratic principles, in appreciating the child as an individual, and in respecting privacy. At the same time, everyday life, work and activities in preschool must enable the development of a sense of security and social belonging, which is based on the idea of equality and non-discrimination (regarding gender, social and cultural background, religion, physical constitution, etc.). Therefore, children must acquire basic rules of behaviour and communication that originate in the conception of the individual's freedom as non-restriction of the freedom

of others. Children must also have a wide variety of possibilities of developing critical minds, personal decisions and autonomous judgements" (Kurikulum za vrtce, 1999, p. 49). We are fully aware that our analysis of the formal framework is only one of the factors that contributes to an inclusive and non-discriminatory preschool education in public preschools. Although a good knowledge of the formal framework is of key importance, there are other factors that should also be taken into consideration, such as the reasons why the goal of "learning about various forms of families and family communities" is not met and what practical tools preschool teachers have in order to reach this goal. All of these aspects need further research, although some tools – partly due to the Family Code policy debate in Slovenia – have already been created/translated in the past few years in Slovenia.[3]

Content, activities and educational actions in preschools concerning the family (as well as other topics) must, therefore, be well thought through and carefully planned. Having said that, we should not forget that the formal framework of norms, principles and goals, as presented here, is binding on educators, while the latter are, at the same time, professionally autonomous in their choice of content and didactic strategies.

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3 The book by Darja Zavišrek and Ana M. Sobočan *Mavrične družine grejo v šolo: Perspektive otrok, staršev in učiteljic* (FSD, 2012) offers a good overview of the issues children face in non-normative family settings. The second part of the book offers (preschool) teachers specific examples of how to address family diversity in kindergartens and schools. Among children's picture books, we recommend Mary Hoffman's *Velika knjiga o družinah* (Didakta, 2010), which is an excellent source for addressing family plurality "through children's eyes". Finally, there are two children's picture books that specifically address same-sex families: *In s Tango smo trije* (J. Richardson and P. Parnell, Modrijan, 2010) and *Sosedje in prijatelji* (Lawrence Schimel, Škuc Lambda, 2008).

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Biographical note

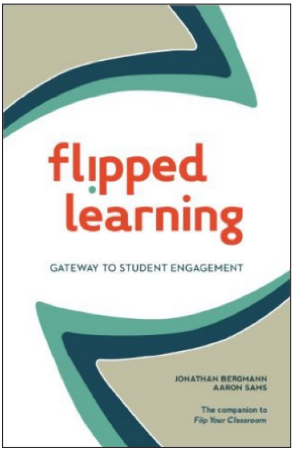
Mojca Kovač Šebart, PhD, is professor of Sociology of Education at the University of Ljubljana (Faculty of Arts, Department of Educational Sciences). Her research topics include preschool and family education, authority, moral education, multicultural and Roma education, citizenship education, classroom and school culture. She is the author of several books, among others Self-perceptions of school: conceptualizing the 9-year compulsory education in Slovenia (2002, in Slovene language), co-author (with J. Krek) of the The public school, values and educational discourse (2010), co-author (with A. Hočevar) of the Preschool education - some organizational and conceptual dilemmas (2012). She is also (co)author of numerous articles published in internationally recognized journals, among others "Curriculum planning and the concept of participation in the Reggio Emilia pedagogical approach" (2013, European early childhood education research journal), "How to evaluate and judge when the moral-educational dimension of instruction is concerned?" (2015, Review of European studies), "Citizenship education in Slovenia after the formation of the independent state" (2008, Journal für Sozialwissenschaften und ihre Didaktik), "Where East meets West: controversies of textbook publishing in small former communist countries" (2004, Publishing research quarterly).

Roman Kuhar, PhD, is a professor of sociology at the University of Ljubljana (Faculty of Arts, Department of Sociology). His research topics include glbt/queer issues, intolerance and equality, media, citizenship, and sexuality. He is the author of several books, among others Media Construction of Homosexuality (2003), At the Crossroads of Discrimination (2009), co-author (with A. Švab) of The Unbearable Comfort of Privacy (2005) and co-editor (with J. Takács) of Beyond The Pink Curtain: Everyday life of LGBT people

in Eastern Europe (2007), Doing Families: Gay and Lesbian Family Practices (2011) and (with D. Paternotte) of Anti-gender campaigns in Europe: Mobilizing against equality (Rowman & Littlefield, 2017). He is an associate co-editor of Social Politics and a board member of Journal of LGBT youth and Družboslovne razprave.

Jonathan Bergmann and Aaron Sams, Flipped Learning: Gateway to Student Engagement, International Society for Technology in Education: Eugene, Oregon and Washington, DC, 2014; 169 pp.: ISBN 978-1-56484-344-9

Reviewed by Romina Plešec Gasparič[1]



There are two main reasons for the book *Flipped Learning: Gateway to Student Engagement* being an interesting read. The first is that the book discusses a relatively new concept, dating back to only 2006. The second is that it is written by the pioneers of the concept of flipped learning. Both reasons add to high expectations for this book.

The authors of the book, Jonathan Bergmann and Aaron Sams, both have teaching experience and were in fact colleagues when they started developing the idea of flipped learning. They were both teaching high school chemistry and shared a common vision: 'to put our students first so they could develop both cognitively and affectively' (p. ix). From their initial collaboration and the idea of flipping, stemmed a numerous online community of educators interested in flipping their teaching, the Flipped Learning Network (flippedclassroom.org) with a membership of over 20,000 in 2014.

The book *Flipped Learning: Gateway to Student Engagement* is divided into two halves. In the first four chapters, the authors explain their background and aim to persuade the reader about the efficiency of the presented concept. Bergmann and Sams substantiate their thesis of flipped learning being a unique experience for each teacher and their class by including stories from a wide range of subject matter teachers, such as math, chemistry, physical education, biology, history, English and science (Chapters 5 to 11). There is also a story by a primary school fifth-grade teacher who flips her classes (Chapter 12) and a story of flipping professional development courses for teachers (Chapter 13). The final chapter summarises the teachers' stories, reviews the benefits of flipping,

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and even suggests that school administrators should flip their staff meetings to make better use of face-to-face time and thus empower teachers.

The book cover presents the book as a 'revolutionary education philosophy' taken to the next level. This refers to Bergmann and Sams' previous book, *Flip Your Classroom*: *Reach Every Student in Every Class Every Day* (2012), in which the authors focused mainly on producing high-quality videos for students, while in *Flipped Learning*, the classroom is truly student-centred and the teacher individualises instruction in order to engage each student. The book offers a general introductory look into the concept of flipped learning and indicates possible further exploration. The authors have expanded these primary notions by writing four more books dedicated to different subjects of flipping – a book series that supports flipped learning in five topic areas: science, math, English, social studies, and the elementary classroom.

Bergmann and Sams define flipped learning as an instructional model in which direct instruction is delivered individually through videos. The amount of whole-class instruction is minimised and time and space are given to other student grouping forms and activities, such as problem-based learning, discussion, inquiry, project work, etc. Throughout the book, the 'One Question' that the authors pose in the *Introduction*, is a common thread and this question is "What is the best use of face-to-face time with students?" (p. 3). Bergmann and Sams insist that this is the question that is the core of flipped learning and one that each teacher should ask constantly. Moreover, they believe each teacher should provide a unique and individual answer to it, according to the needs of their own students.

The concept of flipped learning appeared in 2006 and has passed several developmental stages since then, which also affected the terminological aspect of the concept. Originally, the concept of the flipped classroom, as it was then called, was based on the use of video as a medium of content transfer, while the teacher was at the centre of instruction. In the next developmental stage, the concept called 'the flipped mastery model' remained focused on the teacher's transfer of knowledge, but students' learning pace was taken into account and features were added to the videos that enabled adapting to the learners' needs. The last stage of development brought about the term 'flipped learning' with the student being the centre of the classroom and instructional strategies implemented with the aim of creating deep and lasting knowledge. The authors suggest that the teacher should not be the focus of instruction and that flipped learning supports student-focused processes. They note that teachers should provide quality and rich learning experiences for students and that flipping their class enables them to do so. However, they do not explain thoroughly

what those qualities and rich learning experiences might be. Some further references to other authors exploring (e.g. group work, active learning, problem-based learning, project work, etc.) might be beneficial to the book.

Bergmann and Sams constantly remind the reader to adapt the implementation to their own educational setting and be prepared that it is a lasting process, not an overnight change that would give evidence of flipped learning being an effective approach to teaching and learning. The authors emphasise the importance of personal experience and express the belief that the concept is worth implementing. The reader should keep in mind, that flipped learning is not a concrete, practical teaching strategy. Rather, as Bergmann and Sams often repeat, it is a combination of different effective teaching strategies, employed in different ways by different teachers. This makes flipped learning classes hard to compare and to make generalisations about them. A reader, interested in a more thorough research basis of the flipped learning concept, should look into the studies of Overmyer (2014), Strayer (2007) and others who have examined flipped learning both quantitatively and qualitatively.

Although the book could be upgraded by including an overview of research in this field, it still manages to provide a sound and common-sense idea on how to free up class time in order to carry out interactive and interesting learning activities which students will enjoy and benefit from. The authors emphasise that a one-size-fits-all approach to education is undoubtedly a failed one. Instead, they defend the notion that students should learn the same content but choose how they want to learn it. They advocate several grouping options: individual instruction, pairwork, and cooperative learning or, better yet, a mixed grouping organisation, with all those options being implemented at the same time; and several different teaching methods: reading, explanation, demonstration, etc. The book is encouraging and inspirational, offering many stories of real-life teachers, explaining how they implemented flipped learning into their own practice. Teachers share their ups and downs with flipped learning and admit to having to input a lot of effort, time and creativity to implement this innovation. Theirs are stories of success and an inspiration to teachers who also want their students to be more satisfied and achieve better learning results. Moreover, flipped learning enables more differentiated, democratic and equitable learning for all students.

The reader unfamiliar with the concept of flipped learning will find first-hand information about it from its founders as well as practising teachers. The book is a recommended starting point for teachers looking for ways to free up their class time in order to make teaching and learning more interactive and meaningful.

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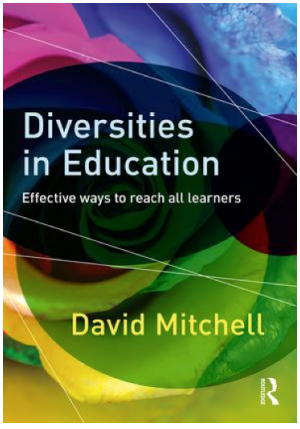
David Mitchell, Diversities in Education: Effective Ways to Reach All Learners, Routledge: Abingdon, New York, 2016; 336 pp.: ISBN 9781138924703

Reviewed by Nika Šušteric[1]



One of the central debates in education, at least since the middle of the 20th century, concerns the question of the reproduction of social inequalities. Education itself is supposed to actively contribute to reducing them. It does so primarily by reducing the inequalities in students' achievements, especially if these are produced by contingent attributes or circumstances, such as gender, socioeconomic status, ethnicity and race for example. However, the intensification of individualism, witnessed in the past few decades, shifted the focus to the uniqueness of individuals. The concepts of gender, social class, or race seem to have become too narrow to be able to describe the experiences of individuals in schools and beyond. Today, when speaking of social inequalities and the role education has in eliminating them, one comes across another term more and more often: *diversity.* Diversity is presented as a key characteristic of (mostly Western) societies in the 21st century, with its' recognition as the basis for building community and society. Recognising diversity in education is supposed to enable forming a just society while also acknowledging the entire complexity of every individual and his or her identity. Diversity in education is also the main focus of the book *Diversities in Education: Effective Ways to Reach All Learners*, written by David Mitchell, an author most known for his work in the fields of special and inclusive education.

Mitchell's book is comprised of six major chapters. The first, titled *Samenesses and differences: an introduction,* seems to promise an analysis of some crucial terms: sameness, difference, and diversity, to mention the most obvious. Mitchell does offer brief dictionary definitions of *diversity* and *difference*, terms he often uses interchangeably, but the chapter mostly comes down to an exposition of Mitchell's views on education, its' tasks and goals, and an explanation of

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certain presumptions that should form their basis.

The other five chapters concern 'the big five', as Mitchell calls them (p. 2), areas of difference: sex/gender, socioeconomic status/social class, ethnicity/race/culture, religious beliefs and abilities. These five chapters are mostly similar in their structure - the introductory definitions are followed by analyses of the effects certain differences have on the educational achievements of students. These are followed by propositions for reducing inequalities in education, arising from the aforementioned differences. In accordance with his ecological perspective (p. 15–16), Mitchell proposes solutions on systemic, school and classroom levels (the chapter on religious beliefs is an exception to which we will return later).

The second chapter, *Sex and gender differences*, starts by defining the terms *sex* and *gender*. What follows is an eclectic collection of differences between (the two) genders/sexes. Probably the greatest shortcoming of the chapter lies in the approach the author uses for explaining these differences. He separately lists a few possible reasons for differences that relate either to nature or to nurture. Despite his inclination towards an interactive approach to the topic, he does not offer an analysis that would combine both strands and thus fails to adequately shed light on the ways in which, for example, certain biological differences gain moral value which in turn significantly shape individual biographies and trajectories.

Whereas the chapter on gender/sex mostly focuses on differences between genders in general, the third chapter, *Social class/socio-economic status differences,* centres more on differences in educational achievement that arise from differences in students' social backgrounds. Mitchell stresses the effects of various factors ranging from differences in cultural and social capital to differences in students' diets. Among the many propositions for eliminating these inequalities, Mitchell also stresses the importance of appropriate funding models for education and so moves away from current trends in education policy that attempt to shift the responsibility for reducing inequality to individual schools and teachers.

The fourth chapter, *Race/ethnicity/culture differences,* follows the same structure as the two chapters preceding it. Mitchell directly acknowledges that countries differ significantly in their ethnic compositions and histories (p. 152), which makes it difficult to propose simple solutions for reducing inequalities caused by ethnic differences. Mitchell frequently points out that the discussion of the effects ethnicity has on educational achievement must consider the interactions between various factors involved in forming individuals, including at least gender and socio-economic status.

The next chapter, *Religions/beliefs differences*, is distinct from all the other chapters. Mitchell abandons the structure used in previous chapters and does not discuss the question of differences in educational outcomes arising from students' religious beliefs or practices. He does start the chapter by briefly discussing what religion and its' place in society is, but what follows concerns the role of religious and religion education in schools. Mitchell offers an overview of certain national and international conventions concerning the rights regarding religious beliefs and follows up with a comparison of different national models of religious and religion education. While he expresses his opinion against religious indoctrination in education clearly, he unfortunately does not analyse inequalities arising from students' religious beliefs. The issue is certainly complex and demanding, but this only gives all the more reason for conceptualising it and finding mechanisms to reduce educational inequalities based on religion.

The fifth chapter is titled *Different abilities*. Mitchell offers an overview of the most prominent approaches in educating children with different abilities, or, to put it differently, of children with special educational needs. He explains what some of the reasons for different abilities are and continues with a rather elaborate description of propositions for creating an education accessible to *all* students. The author, mostly known for his work in the area of special and inclusive education, does not hide his affinity for inclusive education as an appropriate model for education in general. Throughout the book, Mitchell expresses the ever more popular view that inclusion is not concerned with educating children with special needs only, but presents a model of education that can, in combination with personalisation and the universal design for learning, cater to the needs of each and everyone comprising a diverse population of students.

To conclude our review, we should emphasise that the issues discussed in *Diversities in Education* are complex and extensive and perhaps too demanding to be adequately discussed within a single book. This is also probably why the analyses of differences and their causes offered by Mitchell are often fragmented. While *Diversities in Education* can present a possible entry point to acquainting oneself with issues of equity in contemporary education it also, perhaps even more importantly, invites us to think about the concept of diversity itself. It seems, after all, that we are dealing with a concept that promises us to quite simply solve one of the fundamental tensions in education: that between the individual and the collective. However, reducing persistent and, to a degree, immanent tensions with a 'one concept solves all' approach might cause *diversity* to fall short of expectations.

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