CONSTRUCTIVIST TEACHING

Theory and empirical research

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Foreword

Funded by the Croatian Science Foundation, the scientific project entitled *School for the Net-generation: Internal Reform of Primary and Secondary School Education* was carried out in the period from 1 September 2014 to 31 August 2017, within the framework of research activities of the Faculty of Teacher Education (University of Zagreb). This monograph is the result of long-term research on the role of digital media in informal learning environments created by schools for members of the so-called Net generation; however, only the results of more recent empirical research conducted by three members of the *School for the Net-generation* research team among Croatian primary and secondary school students and teachers are presented herein. Empirical results are contextualised within theories of education and learning presented in recent scholarly writings on didactics and psychology. The authors of the present monograph would like to take this opportunity to thank the Croatian Science Foundation and the Faculty of Teacher Education (University of Zagreb) for providing financial assistance necessary to conduct the empirical research, and to prepare and publish the results.

We are also grateful to the primary and secondary schools where data presented in this monograph and our other publications (Matijević et al., 2016) were collected. We owe special thanks to the students, teachers, principals and other experts employed in the following primary schools: "Đulovac" Primary School; "Ljubo Babić" Primary School, Jastrebarsko; "Lipik" Primary School; "Braća Radić" Primary School, Pakrac; "Vjenceslav Novak" Primary School, Zagreb; "Antun Gustav Matoš" Primary School, Zagreb; "Lijepa naša" Primary School, Tuhelj; First Primary School, Varaždin; "Ostrog" Primary School, Kaštel Lukšić; and the Second Primary School, Bjelovar. We would also like to acknowledge the assistance and cooperation of the principals, teachers and experts employed in secondary schools we visited in order to collect data and exchange opinions on teaching and learning for the Net generation. They include the following: Economics Secondary School, Čakovec; "Matija Antun Reljković" Secondary School, Slavonski Brod; Secondary Trade School, Vinkovci; and the Veterinary Secondary School, Zagreb.

The authors would also like to thank the reviewers of this books for their useful advice and critical remarks.

A list of selected publications produced by members of the research team in the course of this project has been included in a different monograph, prepared by the research team members (cf. Matijević, 2017, pp. 344–347).

The Authors

SUMMARY

Constructivist teaching: Theory and empirical research

Constructivism cannot be defined or explained in a single, unique way: it is, at the same time, a theory of learning and a theory of knowledge. Constructivism and constructivist learning theories are based in ontology and epistemology. Theses and hypotheses inscribed in the constructivist view on the genesis of reality, knowledge and learning are neither new nor original. What is new, however, is the way they perceive and interpret that same reality, knowledge, and learning. When it comes to the history of constructivist thought, some authors claim it was first formed in the 20th century (Watzlawick, 1984; 2003; Ernst 1998; 2005; Piaget, 2002; 2005; Vygotsky, 1977). In contrast, some authors (Palekčić, Vollstädt, Terhart i Katzenbach, 1999; Pritchard & Woollard, 2010; Von Glasersfeld 2003) describe the long history of the development of constructivism, a history they trace back to the B.C.E period, while others believe constructivist thought has been around for a little over one hundred years (Schweizer, 2007).

Depending on their approach to constructivism, Null (2004) has divided constructivists into three groups, based on the specific level they focus on. The first of Null's groups encompasses epistemological constructivists, i.e. theoreticians who study knowledge on the epistemological level, examining *how, why, when, and where* knowledge is created (constructed) within society. These theoreticians often deal with the social, political, and economic context. The second group consists of instructional constructivists, whose main focus of interest is research on local and individual constructions of knowledge which take place within individual classrooms, and are performed by individual students. These theoreticians and researchers therefore examine the processes of learning and instruction. They frequently point out that learning is not linear, and that it is rooted in students' abilities to attribute meaning. Simply put, the third of Null's groups includes researchers – prescriptive constructivists – who study constructivism by prescribing certain actions. They distil the entirety of theoretical and scientific discussions into a certain number of techniques and advice teachers should implement in their classrooms. There are some indications of attempting to prescribe what the teacher

"must" do in order to organise classes in accordance with the theoretical findings of constructivism (Null, 2004, pp. 181–182).

However, there are different types of theoretical approaches and different types of constructivism, which can be viewed through three theoretical lenses: philosophy (ontology and epistemology); the psychological theory of learning; and didactics (the theory of education) (Kanselaar, de Jong, Andriessen & Goodyear, 2002).

The philosophical approach focuses on ontology and epistemology, with the former examining the issue and nature of reality, and the means of its comprehension. This raises the question about whether all people perceive reality and the world around them in the same way and in terms of the same content. Developed in the 20th century, the second theoretical approach views constructivism as a psychological theory of learning. The basic premise of this learning theory is the notion that the learning process is facilitated by human activity, handling objects, and interaction with one's physical and social environment. The psychological constructivist theory has undergone significant development in the last three decades, primarily thanks to the implications its findings have had in the context of education. Older than the psychological approach, the third approach to constructivism is rooted in didactics and focuses on the characteristics and means of organising education, i.e. instruction and learning. In contrast to some other didactic approaches, the constructivist approach to education places emphasis on student activity. The constructivist approach in didactics stands in direct contrast to the dominant paradigm of the class-subject-lesson system and instruction from the front, which requires students to be silent, remain seated, listen, and observe.

There are several constructivist learning theories. Phillips (1995) lists three aspects of thinking about constructivist learning: individually or socially constructed knowledge; creation or discovery; and intellectual or physical knowledge construction. It should therefore come as no surprise that there are many classifications of constructivism, and that the concept is often understood as a synthesis of existing approaches: cognitive constructivism, personal constructivism, social constructivism, critical constructivism, and radical constructivism. Approaches that have had the most influence on the organisation of student-oriented education include the cognitive constructivist theory of learning and the social theo-

ry of learning (social constructivism). Constructivist learning is defined as a self-regulatory, interpretative, and non-linear process of knowledge building, supported by active interaction with one's surroundings – both physical and social (Fosnot & Perry, 2005, p. 34). Within the constructivist paradigm, learning is seen as a constructive and situational process, with classroom education functioning as a source of support, stimulation and advice for students participating in the learning process (Palekčić, 2002; Babić, 2007). The role of the teacher is to organise learning activities, experiences and an environment in which learning will take place. Constructivist didactics ensures the conditions and circumstances which support independent learning (knowledge construction). Terhart (2003) explains that the principles of constructivist didactics have already been recognised and were founded at the beginning of the 20th century, within the framework of reform pedagogy.

To be sure, these theories of learning have not been immune to criticism. Kirchner, Sweller and Clark (2006) point to several weak points of constructivist education: namely, they consider constructivist education – especially research and problem-solving learning – to be based on the processes of scientific knowledge and scientific methodologies of a given discipline (mostly in the field of natural sciences). Kirchner (1992) explains that the way in which a (scientific) expert reaches scientific conclusions is not the same as classroom education and the didactic formation of the processes of instruction and learning. Mayer (2004), Kirchner, Sweller and Clark (2006), Rosenshine (2009) and others believe there is not enough empirical data to support the notion of the superiority of constructivist learning over learning through direct instruction.

However, it is important to recognise that constructivist learning is future-oriented. It is an anticipatory type of learning which lays the groundwork for competences necessary for studying. Regardless of the different approaches to what we call learning theories, the constructivist approach can be recognised in all previously mentioned ideas formed within reform pedagogy and didactics. The idea of the so-called new school was formed under the influence of art education and the working school movement. It is believed that constructivism first appeared within the field of arts at the beginning of the 20th century: first in Russia, from where it gradually spread through the rest of Europe. As an artistic style

and approach, constructivism first affected painting, and later developed into an approach to architectural design. All this could not have been excluded from the art classroom, where it was manifested as freedom of expression, encouragement of aesthetic perception and experience, and stimulation of creativity and divergent ways of thinking. Creative artistic expression, students' individuality and creativity in artistic fields earned their place on the lists of content and activities in the curricula of general and trade schools, which presented a significant and necessary departure from highly didactic 19th-century intellectualism (Croatian Encyclopaedia, http://www.enciklopedija.hr/).

In didactics and pedagogy, constructivism implies the activity of all the participants involved, primarily the students. Representatives of one of the original pedagogical reform movements (the working school movement) which appeared at the turn of the 20th century, support active and independent student work. Proponents of the working school movement call for more active learning, with special focus on students' manual labour. The working school movement developed during the Second Industrial Revolution, in the period of intensive search for new didactic strategies that would satisfy the needs and expectations connected to school results; this was a time when Maria Montessori, Dewey, Freinet, Feriere, Petersen, Parkhurst, Claparede, Decroly, Cousinet and others intensively examined didactic scenarios and strategies that highlight the different (individual, group) student activities connected to independent research, discovery, and problem-solving.

They provide changes in ways of thinking about the curriculum, as well as the processes of learning, instruction, and evaluation. Their approach to curriculum development presents a departure from the standardised curriculum and is based on students' previous experiences. Learning and instruction are organised as processes of meaningful activities during which students gain new knowledge based on their previous experiences and abilities, which they increase and improve with the help of others and in cooperation with them. Education strategies promote questioning, research, reflection, and practical activities, while avoiding memorising facts. Naturally, this approach also affects evaluation methods and principles, which become part of the learning process. Standardised student evaluation and marking become pointless. Another

common feature of the previously presented projects and pedagogues is the search for balance between independent individual activities on the one hand, and students' independent group and collaborative work on the other. All forms described here require teachers who are not lecturers, but organisers, moderators, and collaborators. However, despite these long-standing observations and solutions that have been tested in practice, many institutions of teacher education still insists on training future teacher-lecturers, who will rely primarily on lecture-demonstrations, ignoring constructivist principles.

A new wave of changes in education was prompted by computer technologies and new media. Initial research on the role and effect of computer technology was dominated by euphoria and the notion that in and of themselves, media would raise the quality of education and learning (Tamim et al., 2011; Timmermann & Kruepke, 2006). These results suggest that media-based instruction is at least as efficient as or even more efficient than instruction that does not rely on the use of media (Schmidt et al. 2009; Torgerson & Elbourne, 2002; Zhao, 2003). The development and intensification of research which took place during the 1980s and lasted until around the middle of the 1990s resulted in a lowering of this estimate; in other words, research began to indicate that (digital) media-based instruction was as efficient as instruction that did not rely on media. Research conducted in the 1990s pointed out, and that from the 2000s confirmed that (digital) media are simply one of many factors whose interconnectedness (interaction, multivariance) can improve the quality and raise the level of reaching certain learning goals (e.g. Tamim, 2009; Tamim et al., 2011).

The importance of (socio)constructivist learning, self-regulated, contextualised, and cooperative learning supported by digital technologies (primarily the internet and Web 2.0 technologies) and contextualised within the relativisation of formal and emphasis on informal learning (anywhere, anytime) triggered the emergence of special discourse on what has been termed "worlds of digital learning" (Ger. *Digitale Lernwelten*) (Hugger & Walberg, 2010). Generally speaking, worlds of digital learning signify the possibility of self-regulatory, independent, but also collaborative learning supported by digital technologies.

It is not possible to fully examine the characteristics of contemporary education based on constructivist theories of learning and multimedia

education without studying the computer self-efficacy of teachers and students, and the motivation for implementing digital media. Research has confirmed that attitudes toward digital technology and the perception of one's ability to use it play an important role in determining one's success in performing tasks by employing that same technology. Computer self-efficacy is defined as the self-perception of one's abilities to perform certain tasks and activities with the help of digital (computer) technology. Computer self-efficacy has developed from the theoretical concept of self-efficacy, proposed by Albert Bandura (1977, 1982, 1993, 1997). It is important to note that self-efficacy – be it a general or specific type of self-efficacy (Pintrich, 2004; Pintrich & De Groot, 1990; Schunk, 2005; Torrano Montali & Tores, 2004; Usher & Pajares, 2008) – is an important factor in motivation and self-regulated study.

When discussing the possibility of implementing digital technology into a specific phenomenon and process, i.e. education, learning, instruction, and schooling, the theory of values and expectations has proved highly useful (e.g. Eccles, 2005; Eccles & Harold, 1991; Wigfield & Eccles, 2000). In other words, this theory has proved to be the optimal theoretical and practical framework which can be used to explain a series of implementations of innovations in the educational context (e.g. Marušić, Jugović & Pavin Ivanec, 2011; Pavlin-Bernardić, Rovan & Marušić, 2017; Wozney, Venkatesh, & Abrami, 2006).

The aim of the present research was to examine the characteristics of digital media use and constructivist education, from the point of view of students and teachers in primary and secondary schools in the Republic of Croatia. Specifically, our goal was to examine the degree to which teachers and students possess individual digital media; the degree to which schools are equipped with digital media and encourage their use; the frequency of using individual digital media in the classroom; the level of computer self-efficiency; reasons for using digital media in the classroom (motivation for their use); and students' and teachers' views of constructivist learning. To collect data on computer self-efficacy, the Computer Self-Efficacy Scale developed by Teo and Ling Koh (2010) was used. To examine the elements of constructivist education, Taylor, Fraser and Fischer's (1997) Constructivist Learning Environment Scale was used. To determine the motivation for using digital media in the class-

room, Wozney, Venkatesh and Abrami's (2006) Technology Implementation Questionnaire was employed to examine the reasons, i.e. motivation, for using both digital technology and digital media in the classroom. The instruments were constructed based on the theory of values and expectations, and on the theory of motivation (e.g. Eccles, 2005; Eccles & Harold, 1991; Wigfield & Eccles, 2000). Further, our aim was to examine the characteristics of each previously listed variable with regards to the individual demographic characteristics of students and teachers. Finally, we wanted to determine whether or not differences in the examined variables exist between students and teachers.

Data were collected among participants (N = 880) from the whole of the Republic of Croatia. The aim was to encompass schools from all regions in Croatia in order to obtain the most representative sample possible. The sample included primary and secondary school students (n = 512) and teachers (n = 368). Data were gathered in January and February 2016 using the paper-and-pencil method. The research was conducted in accordance with the Code of Ethical Research Involving Children and Young Adults, and was entirely anonymous and voluntary. The research itself was quite extensive, and the following paragraphs present only some of the results of the detailed analyses, with regards to the independent variables.

A descriptive analysis shows that almost every student owns a computer and has internet access, a mobile phone, smart phone, and a social media profile. To a lesser, but still large, extent, students own multimedia software; an even smaller number of students owns tablets. These results correspond to those obtained by OECD (2015), which suggest that the digital divide with regards to socio-demographic factors no longer poses a real problem in education. A significant difference when it comes to ownership of digital media was determined with regards to student gender: compared to their male colleagues, more female students own mobile phones (χ^2 = –0,141; df = 1; p = 0,001) and have social media profiles (χ^2 = –0,103; df = 1; p = 0,019). A significant difference in digital media ownership with regards to the level of education was determined only for tablets: primary school students own tablets more often than secondary school students (χ^2 = 0,181; df = 1; p = 0,000). When it comes to their results at school, students who finished the previous class with a passing grade are

less likely to have a computer (χ^2 = 0,526; df = 3; p = 0,022) and internet access (χ^2 = 1,930; df = 3; p = 0,039) than other students. Analyses of differences based on individual school programmes indicate that gimnazija (grammar) school students are slightly more likely to own some kind of multimedia software (χ^2 = 0,143; df = 1; p = 0,019) than vocational school students. When it comes to the schools' level of digital media equipment, it was determined that, on average, schools are somewhat equipped with computers, internet access, special computer programs, and projectors; they are equipped with SMART Boards to a lesser degree, and completely unequipped with tablets. Student assessments indicate that secondary schools are somewhat better equipped when it comes to internet access (U = 27607,0; z = -3,346; p = 0,001) and SMART Boards (U = 29279,0; z = -2,276; p = 0,023), while primary schools are better equipped with tablets (U = 29649,5; z = -2,292; p = 0,022). According to student assessments, classes very often include activities that require them to use the internet (63,7%), look up information online (56,6%), and use social media (60%). On the other hand, a large number of students believe classroom activities are organised so that they never get a chance to show video (54,3%) or audio recordings (73,8%), use online learning platforms (66,8%), or do any programming (63,5%). Based on the analysis of pedagogical practices in 174 case studies, Kozma (2003) established that in the majority of cases, students use various design tools in the classroom, such as presentations (78%), web resources (71%), and multimedia software (52%). When it comes to the degree in which the use of digital media in education and learning is encouraged, students assess that teachers usually do not encourage them to use digital media in the classroom or for studying purposes (M = 2,33; SD = 0,89); rather, it is their parents who mostly encourage the use of digital media (M = 2,85; SD = 0,92).

It was established that almost all the teachers included in the research own personal computers (99,7%), have internet access, and own mobile phones. To a lesser degree, they also have smart phones, multimedia software (64%) and social media profiles (65%); the smallest percentage of teachers own tablets (56%). Asked to comment on how well their schools are equipped with digital media, teachers on average consider the schools in which they work to be somewhat equipped with computers, appropriate computer programmes, projectors, SMART Boards, and tablets. 50% of the 605 teachers consider their schools to be fully equipped with

projectors, internet access, and computers. A little over 50% find their schools to be somewhat equipped with SMART Boards, although more than 40% claim their schools are completely unequipped with SMART Boards. More than 60% of teachers consider their schools completely unequipped with tablets.

It was established that 30–60% of teachers claim their principals encourage them to use digital media, while 30–45% claim they receive this type of encouragement from experts. On the other hand, around 30% of teachers state they were trained to use digital media in education during their professional development, while 1/5 of teachers point out they have not participated in this type of training.

With regards to assessments of media ownership among students and teachers, the Mann-Whitney U test established considerable differences in the ownership of computers (U = 91704,0; z = –2,909; p = 0,004), internet access (U = 91264,0; z = –3,420; p = 0,001), multimedia software (CD, DVD) (U = 69688,0; z = –9,436,432; p = 0,000), smart phones (U = 78728,0; z = –7,572; p = 0,000), and social media profiles (U = 65632,0; z = –11,925; p = 0,000); however, no significant differences were determined with regards to mobile phones (U = 93504,0; z = –0,984; p = 0,325) or tablets (U = 90456,0; z = –1,181; p = 0,238). A significantly higher number of teachers claimed to have computers and internet access at home, while more students claimed to have multimedia software, smart phones, and social media profiles.

Evaluating the constructivist learning environment at their school on a 4-grade scale (with 1 meaning "does not describe to me at all", and 4 meaning "fully describes me"), students assessed that classroom education provides them with learning activities that, for the most part, enable them to maintain interest in learning and recognise its importance (M = 2,99), and promote critical thinking (M = 3,07) and collaborative learning (student negotiation) (M = 2,73). However, students also believe they are not given control of their own learning process (individualisation and self-regulated learning) (M = 2,43). Teachers also generally believe the learning environment they create for their students has constructivist elements. Specifically, they believe the learning environment enables students to develop a personal sense of the importance of learning (connecting the contents of learning with real-life situations) (M = 3,36), critical

thinking (M = 3,44), learning control (M = 2,96), and student negotiation (collaborative learning) (M = 3,8).

An analysis of the results determined no significant difference in evaluating constructivist learning with regards to teachers' gender. Teachers who obtained their degree from faculties other than the Faculty of Teacher Education (University of Zagreb) have a significantly more negative perception of students' learning control and negotiation abilities. Furthermore, significant differences were noted in evaluations of students' abilities to recognise the personal importance of learning, students' critical thinking, and students' ability to negotiate when it comes to the learning process. Primary school teachers gave higher assessments of these elements than their secondary school colleagues. Considering the type of secondary school, significant differences were also established when it comes to the control factor. Grammar school teachers gave much lower assessments of students' abilities to control learning than primary school and secondary vocational school teachers. Years of working experience did not prove to be a source of statistically significant differences in evaluating constructivist learning.

When analysing differences with the help of the Mann-Whitney U test in student and teacher assessments of opportunities for creating a constructivist learning environment, significant differences were determined with regards to each factor. Student assessment of the levels of the personal importance of learning (U = 56914,0; z = –10,026; p = 0,000), critical thinking (U = 56060,0; z = –10,293; p = 0,000), the ability to control learning (U = 49094,5; z = – 12,155; p = 0,000), and their negotiation abilities with regards to the learning process (U = 59788,0; z = –9,292; p = 0,000) are much lower than the teachers' assessment.

The research findings indicate that students gave a positive assessment of the value of using digital media in the classroom (M = 2,89), have similar expectations when it comes to achieving learning goals with the help of digital media (M = 2,83), and believe the use of digital media in learning activities does not require additional effort on their part (M = 2,83). It was found that teachers have a relatively high degree of motivation for using digital media in the classroom. In other words, teachers ascribe more value to digital media (M = 3,03) and their ability to successfully organise classes by using it (among other tools) (M = 3). Furthermore, they believe

that organising classroom activities with the help of digital media does not require additional effort on their part (M = 2,97). No significant differences were determined in teacher assessment with regards to gender. Assessments of the implementation of digital media and the investment of effort required to use them differ significantly depending on the teachers' initial education: teachers who were trained at faculties other than the Faculty of Teacher Education gave a more negative assessment. There are no significant differences when it comes to teachers' assessments of the implementation of digital media in terms of the education level of the school in which the teachers are employed, the education programme, or years of working experience.

The Mann-Whitney U test was used to examine the differences in student and teacher assessments of the motivation for implementing digital technology. Significant differences were found: students' assessment of the values and benefits of classroom use of digital media (U = 86060,0; z = –2,193; p = 0,028), their expectations regarding the success of digital media use (U = 79907,0; z = –3,855; p = 0,000), and assessment of the effort required to use digital media (U = 84942,0; z = –2,497; p = 0,013) are considerably more negative.

The research findings confirm that students believe that they have an above-average level of computer self-efficacy in all aspects, i.e. in terms of basic computer skills (M = 3,63), the use of individual computer programs (M = 2,74), and internet skills (M = 3). Teachers assess their own levels of computer self-efficacy as being partially high. Namely, they consider their basic computer (M = 3,69) and internet skills (M = 3,03) to be above average, but find their ability to use computer programs to be below average (M = 2,01). Male teachers provided considerably more positive assessments of their computer self-efficacy than their female colleagues. It is interesting to note that teachers who graduated from the Faculty of Teacher Education consider their basic computer skills to be considerably lower than teachers who received pedagogical training from a different faculty, or who graduated from a different faculty and received pedagogical training only subsequently. Significant differences in evaluating computer self-efficacy were established among primary school and secondary school teachers. In both cases, secondary school teachers provided much higher evaluations of their computer self-efficacy. When it comes

to evaluating computer self-efficacy with regards to years of teaching experience, significant differences were found in the self-assessment of basic computer skills and computer program skills. Teachers with the most years of teaching experience gave the most negative assessment of these factors. There are no significant differences in assessing internet skills.

When analysing data with the Mann-Whitney U-test, partially significant differences were established in student self-assessment of computer self-efficacy, and teacher assessment of their computer program skills (U = 55863,5; z = –19,364; p = 0,000), as well the self-assessment of their internet skills (U = 53416,0; z = –11,045; p = 0,000). Students provided considerably more positive assessments of their computer program and internet skills. These findings indicate that students, and younger generations in general, consider the level of their own computer-efficacy to be much higher than that of their teachers, and older generations in general, which further supports previous findings on this issue (European Commission, 2013; Topolovčan & Matijević, 2014; Topolovčan, Matijević & Dumančić, 2016; Whitley, 1997).

The previously presented conclusions and results of some other research point to a need for more radical changes in pedagogical scenarios which contemporary schools offer members of the Net generation (Matijević, 2015; Topolovčan, Matijević & Dumančić, 2016; Matijević, 2017). Rooted in movements and orientations of reform pedagogy launched some hundred years ago, constructivist education provides positive options and stimuli for change in the pedagogical outlook which is meant to dominate the present-day classroom. This new outlook provides ample room for the implementation of digital media in both curricular and extra-curricular activities. While acknowledging the findings of multimedia pedagogy and curriculum theory, multiple intelligence theories, and the findings of educational neuroscience, pedagogical scenarios in education and in the classroom will continue to undergo significant changes in the coming years. The research findings presented in this monograph may be of use to experts faced with selecting criteria for choosing and pedagogically designing educational scenarios for new generations of students.

LITERATURA

Albirini, A. (2006). Teachers attitudes toward information and communication technologies: The case of Syrian EFL teachers. *Computers & Education*, *47*, 373–398.

Alfieri, L., Brooks, P. J., Aldrich, N. J. & Tenenbaum, H. R. (2011). Does dicovery-based instruction enhance learning. *Journal of Educational Psychology, 103*(1), 1–18.

Ally, M. (2008). Foundations of educational theory in online education. In T. Anderson (Ed.), *The theory and practice of online learning* (pp. 15–44). Edmunton: AU Press.

Appleby, J. et al. (Eds.). (2010). *At the heart of teaching: A Guide to reflective practice*. London: Teachers College Press.

Babić, N. (2007). Konstruktivizam i pedagogija. *Pedagogijska istraživanja 4*(2), 217–231.

Baillet, D. (1989). *Freinet – praktisch: Beispiele und Berichte aus Grundschule und Sekundarstufe*. Weinheim und Basel: Beltz Verlag.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review, 84*, 191–215.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American psychologist, 37*(2), 122–147.

Bandura, A. (1993). Percived self-efficacy in cognitive development and functioning. *Educational psychologist, 28*(2), 117–148.

Bandura, A. (1997). Exercise of personal and collective efficacy in changing societies. In A. Bandura (Ed.), *Self-efficacy in Changing Societies* (pp. 1–45). New York: Cambridge University Press.

Bangert-Drowns, R. L., Kulik, J. A. & Kulik, C.-L. C. (1985). Effectiveness of computer-based education in secondary schools. *Journal of Computer-Based lnstruction, 12*, 59–68.

Batinić, Š. (2014). *Povijesni razvoj i recepcija reformne pedagogije u Hrvatskoj* (Doktorska disertacija). Zagreb: Filozofski fakultet Sveučilišta u Zagrebu.

Bebell, D., Russell, M. & O'Dwyer, L. (2004). Measuring teachers' technology uses: Why multiple measures are more revealing. *Journal of Research on Technology in Education,37*(1), 45–63.

Becker, H. J. (2000). Findings from the teaching, learning, and computing survey. *Education policy analysis archives, 8*(*5)*, 1–31.

Beetham, H. & Sharpe, R. (2007). An introduction to rethinking pedagogy for a digital age. In H. Beetham & R. Sharpe (Eds.), *Rethinkinking pedagogy for a digital age* (pp. 1–11). London: Routledge.

Bentley, M. L., Fleury, S. C. & Garrison, J. W. (2007). Critical constructivism for teaching and learning in a democratic society. *Journal of Thought, 42,* 9–22.

Blount, B. (2007). Why Montessori works. *Montessori life*, *1*, 84–91.

Bognar, B. (2013). Pedagogija na putu prema pluralizmu znanstvenih paradigmi i stvaralaštvu. U N. Hrvatić, i A. Klapan (Ur.), *Pedagogija i kultura* (str. 101–111). Zagreb: Hrvatsko pedagogijsko društvo.

Bognar, B. (2016). Theoretical backgrounds of e-learning. *Croatian Journal of Education, 18*(1), 225–256.

Both, K. (2003). Die Jenaplan -Basisprinzipien - Beobachtungskriterien für die Praxis. *Kinderleben - Zeitschrift für Jenaplan -Pädagogik, 17/18*, 21–31.

Botkin J.W., Elmandjra, M. & Malitza M. (1979). *No Limits to Learning – Bridging the Human Gap*. Oxford: Pergamon Press.

Bredo, E. (1997). The social construction of learning. In G. Phye (Ed.), *Handbook of Academic Learning: construction of knowledge* (pp. 3–45). San Diego, CA: Academic Press.

Britton, L. (2000). *Montessori učenje kroz igru: Za djecu od 2 do 6 godina.* Zagreb: Hena com.

Brosnan, M. J. (1998). The impact of computer anxiety and self-efficacy upon performance. *Journal of Computer Assisted Learning*, *14*, 223–234.

Brown, J. S., Collins, A. & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42.

Bruner, J. (2000). *Kultura obrazovanja*. Zagreb: Educa.

Bruner, J. S. (1960). *Proces of education*. Cambridge: Harvard University Press.

Bruner, J. S. (1961). The art of discovery. *Harvard Educational Review, 31,* 21-32.

Bucy, E. P. (2000). Social access to the Internet. *The Harvard International Journal of Press/Politics, 5,* 50–61 .

Buczynski, N. (2007). *Hrvatska Montessori priča: nastanak i priča prve Montessori škole*. Zagreb: Agram naklada d. o. o.

Burrell, G. & Morgan, G. (1979). *Sociological paradigms and organizational analysis*. London: Heinemann Educational Books.

Carlgren, F. (1991.). *Odgoj ka slobodi: Pedagogija Rudolfa Steinera*. Zagreb: Društvo za waldorfsku pedagogiju.

Chi, M. T. H. (2008). Three types of conceptual change: Belief revision, mental model transformation, and categorical shift. In S. Vosniadou (Ed.), *Handbook of research on conceptual change* (pp. 61–82). Hillsdale, NJ: Erlbaum.

Chou, H.-W. (2001). Effects of training method and computer anxiety on learning performance and self-effcacy. *Computers in Human Behavior, 17*, 51–69.

Christensen, R. & Knezek, G. (2008). Self-report measures and findings for information technology attitudes and competencies. In J. Voogt & G. Knezek (Eds.), *International handbook of information technology in primary and secondary education* (pp. 349–365). Berlin: Springer.

Claparede, E. (1929). Škola po meri. Beograd: Geca Kon.

Clark, R. E. (2009). How Much and What Type of Guidance is Optimal for Learning from Instruction. In S. Tobias, & T. M. Duffy (Eds.), *Constructivist Instruction: Success or Failure?* (pp. 158–183). New York, NY: Routledge Publications.

Coffin, R. J. & MacIntyre, P. D. (1999). Motivational infuences on computer-related affective states. *Computers in Human Behavior*, *15*, 549–569.

Cohen, L., Manion, L. & Morrison, K. (2007). *Research Methods in Education*. London: Routledge.

Collins, A. (1988). *Cognitive apprenticeship and instructional technology*. Cambridge: BBN Labs Inc.

Corner, J., Schlesinger, P. & Silverstone, R. (Eds.). (1997). *International media research: A critical survey*. London & New York: Routledge.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks: SAGE.

de Bens, E., Golding, P. & McQuail, D. (Eds.). (2005). *Communication theory & research*. Thousand Oaks, CA: Sage.

de Corte, E. (2010). Historical developments in the understatinding of learning. In H. Dumont, D. Istance & Benavides, F. (Eds.), *The na-*

ture of learning: Using research to inspire practice (pp. 35–68). Paris: OECD.

Delors, J. (1998). *Učenje: blago u nama*. Zagreb: Educa.

Deng, X., Doll, W. J. & Troung, D. (2004.). Computer self-efficacy in an ongoing use context. *Behaviour & Information Technology, 23*(6), 395–412.

Dewey, E. (1922). The Dalton Laboratory Plan. New York: E. P. Dutton & Co.

Dewey, J (1899). *My pedagogic creed.* Washington DC: The Progressive Education Association.

Dewey, J. (1902). *The child and the curriculum*. Chicago: University of Chicago Press.

Dewey, J. (1910). *How we thik.* Boston: B. C. Heath & Co.

Dewey, J. (1913). *Interest and effort in education*. Boston: University Press Cambridge.

Dewey, J. (1915). The psychology of elementary education. In *The School and Society* (pp. 87–108). Chicago: University of Chicago.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York: Macmillan.

Dewey, J. (1990). *Democracy and education. An introduction to the philosophy of education*. Delhi: Aakar Books.

Dewey, J. (Dž. Djui) (1934). *Pedagogika i demokratija: uvod u filozofiju vaspitanja*. Beograd: Izdavačko i knjižarsko predužeće Geca Kon A.D.

Dewey, J. & Dewey, E. (1915). *Schools of To-Morrow*. New York: Dutton.

Dietrich, I. (Hrsg.) (1995). *Handbuch Freinet Pädagogik*. Weinheim und Basel: Beltz Verlag.

Dietrich, T. (1995). *Die Pädagogik Peter Petersens: der Jena-Plan: Beispiel einer humanen Schule*. Bad Heilbrunn: Klinkhardt.

Dillon, A. & Gabbard, R. (1998). Hypermedia as an educational technology. A review of the quantitative research literature on learner comprehenzion, control and style. *Review of Educational Research, 68*, 322–349.

Dobozy, E. (1999). *Constructivist and Montessorian perspectives on student autonomy and freedom*. Proceedings Western Australian Institute for Educational Research Forum 1999. Dostupno na: http://www.waier.org.au/forums/1999/dobozy.html 22.06.2017.

Doll, W. E. (1993). *A post-modern perspective on curriculum*. New York and London: Teacher College Press.

Drossel, K., Eickelmann, B. & Gerick, J. (2017). Predictors of teachers' use of ICT in school – the relevance of school characteristics, teachers' attitudes and teacher collaboration. *Educ Inf Technol 22*, 551–573.

Eccles, J. S. (2005). Subjective task value and the Eccles et al. model of achievement-related choices. In A. J. Elliot, & C. S. Dweck (Eds.), *Handbook of competence and motivation* (str. 105-121). New York: Guilford Press.

Eccles, J. S., & Harold, R. D. (1991). Gender differences in sport involvement: Applying the eccles' expectancy-value model. *Journal of Applied Sport Psychology, 3*(1), 7–35.

Eickelmann, B., Bos, W., Gerick, J., & Kahnert, J. (2014). Anlage, Durchführung und Instrumentierung von ICILS 2013. (ur.) W. Bos, B. Eickelmann, J. Gerick, F. Goldhammer, H. Schaumburg, K. Schwippert, M. Senkbeil, R. Schulz-Zander, & H. Wendt (u), *ICILS 2013. Computer- und informationsbezogene Kompetenzen von Schülerinnen und Schülern in der 8. Jahrgangsstufe im internationalen Vergleich* (pp. 43–81). Waxmann: Münster.

Engeström, Y., Miettinen, R., & Punamäki, R.-L. (Eds.). (1999). *Perspectives on activity theory*. Cambridge: University Press.

Ernst, P. (1998). *Social constructivism as a philosophy of mathematics*. Albany: State University of New York Press.

Ernst, P. (2005). *Constructing mathematical knowledge: Epistemology and mathematics education*. London: Routledge.

Ertmer, P. A., Evenbeck, E, Cennamo, K. S. & Lehman, J. D. (1994). Enhancing self-efficacy for computer technologies through the use of positive classroom experiences. *Educational Technology Research and Development, 42*(3), 45–62.

European commision (2014). The international computer and information literacy study – ICILS (2013). Main findings and implications for education policies in Europe

European Commission. (2013). *Survey of schools: ICT in education. Benchmarking Access, Use and Attitudes to Technology in Europe's Schools*. dostupno na: https://ec.europa.eu/digital-agenda/sites/digital-agenda/ files/KK-31-13-401-EN-N.pdf. pristupljeno 20.06. 2017.

Ferriere, A. (1920). *The active school* (1920) (reprint 1953)

Ficker, P. (1930). *Didaktik der Neuen Schule*. Osterwieck/ Leipzig: Zickfeldt Verlag

Fosnot, C. T. & Perry, R. S. (2005). Constructivism: A psychological theory of learning. In C. T. Fosnot (Ed.) *Constructivism: Theory, perspectives and practice* (pp. 8–33). New York, NY: Teacher College Press.

Friedrich, H. F. & Hron, A. (2011). Factors affecting teachers' student-centered classroom computer use. *Educational Media International, 48*(4), 273–285.

Gardner, H. (1983/2011). *Frames of mind: the theory of multiple inteligences*. New York: Basic Books.

Gaudig, H. (1921). *Auf dem Wege zur neuen Schule: Versuche und Ergebnise*. Leipzig: Jaeger.

Gaudig, H. (1925). *Frei Geistige Schularbeit in Theorie und Praxis*. Breslau: Hirt.

Gentile, D. A., Swing, E. L., Guan Lim, C. & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture, 1*(1), 62–70.

Gesellschaft für JenaplanPädagogik in Deutschland. Dostupno 02.01.2017. http://www.jenaplan.eu/

Giesecke, H. (1993). *Uvod u pedagogiju*. Zagreb: Educa.

Glasersfeld, E. (1981). Einführung in den Radikalen Konstruktivismus. Im P. Watzlawick (Hrsg.), *Die Erfundene Wirklichkeit* (pp. 16–38). Munich: Piper.

Gläser-Zikuda, M., Ziegelbauer, S., Rohde, J., Conrad, M. & Limprecht, S. (2012). *Case Study: The Jenaplan School of Jena. Jena: Department of School Education & Didactics Institute for Educational Science Friedrich-Schiller-University of Jena*. Dostupno 01.02.2017. http://www.oecd.org/edu/ceri/DEU.THU.003.%20Finalwihcover.pdf

Gunter, B. (2000). *Media research methods: Measuring audiences, reactions and impact*. Thousand Oaks, CA: Sage.

Hackett, G. (1997). Self-efficacy in career choice and development. In A. Bandura (Ed.), *Self-efficacy in Changing Societies* (pp. 232–258). New York: Cambridge University Press.

Haines,A, Baker, K., Khann, D. (2003). Optimal developmental outcomes: The social, moral, cognitive, and emotional dimensions of a Montessori education. *The NAMTA Journal 28.3. 12–52.*

Hayes, D. (2006). *Primary education: The key concepts.* London and New York. Routledge.

Hayes, W. (2006). *The progressive education movement.* Rowman & Littlefield Education Lanham New York: Toronto Plymouth.

Hayes, W., (2006) *The progressive education movement: Is it still a factor in today's schools?*. Mayland: Rowman and Littlefield Publishers Inc.

Hentig, v. H. (1997). *Humana škola. Škola mišljenja na nov način*. Zagreb: Educa.

Herman, P. H. & Gomez, L. M. (2009). Taking guided leaning theory to school: Reconciling the cognitive, motivational, and social contexts of instruction. In S. Tobias, & T. M. Duffy (Eds.), *Constructivist instruction: Success or failure?* (pp. 62–81). New York, NY: Routledge Publications.

Hermans, R., Tondeur, J., van Braak, J. & Valcke, M. (2008). The impact of primary school teachers' educational beliefs on the classroom use of computers. *Computers* & *Education, 51*, 1499–1509.

Herrington, J., Oliver, R., & Herrington, A. (2007). Authentic learning on the web: Guidelines for course design. In B. H. Kahn (Ed.), *Flexible Learning in an Information Society* (pp. 26–35). London: Information Science Publishing.

Herrmann, U. (Hrsg.). (2009). *Neurodidaktik: Grundlagen und Vorschläge für gehirngerechtes Lehren und Lernen*. Weinheim und Basel: Beltz Verlag.

Higgins, S., Xiao, Z. & Katsipataki, M. (2012). *The impact of digital technology on Learning: A summary for the education endowment foundation (Full report)*. Durham: Durham University & Education Endowment Foundation.

Hill, T., Smith, N. D. & Mann, M. F. (1987). Role of efficacy expectations in predicting the decision to use advanced technologies: The case of computers. *Journal of Applied Psychology, 72*(2), 307–313.

Hmelo-Silver, C. E., Duncan, R. G. & Chinn, C. A. (2007). Scaffolding and achievement in problem-based and inquiry learning: A response to Kirschner, Sweller, and Clark (2006). *Educational psycologist, 42*(2), 99–107.

Holistic Curriculum of Dr. Ovide Decroly, dostupno 02.01.2017. http://www.holisticeducator.com/decroly.htm

Hong, B.-B. et al. (2013). Decreased functional brain connectivity in adolescents with internet addiction. *PLoS, 8*(2), 1–8.

Hövel, W. (1987). *Freie Texte warum nicht.?* Mülheim a.d. Ruhr: Verlag Die Schulpraxis.

Hövel, W. (1987). Vierkötter und Geuss, I. Warum nicht? – Handlungorientiert Literatur. Mülheiman der Ruhr: Verlag an der Ruhr

Hövel, W. (1995). Demokratie im Klassenraum. Die Rechte der Kinder und der Klassenrat (46–72). In I. Dietrich (Hrsg.), *Handbuch Freinet Pädagogik* (pp. 46–72). Weinheim und Basel: Beltz Verlag.

Hruby, G. G. & Roegiers, A. (2012). Cognitive constructivism. In C. A. Chappell (Ed.), *Encyclopedia of Applied Linguistics*. Oxford. Wiley-Blackwell.

Hugger, K.-U. und Walberg, M. (Hrsg.). (2010). *Digitale Lernwelten: Konzepte, Beispiele und Perspektiven*. Wiesbaden: VS Verlag fur Sozialwissenschaften und Springer Fachmedien.

Ilišin, V. (2003). Mediji u slobodnom vremenu djece i komunikacija o medijskim sadržajima. *Medijska istraživanja, 9*(2), 9–34.

Ischinger, B. (Ed.). (2007). *Understanding the brain: The birth of a learning science*. Paris: OECD.

Isman, A. & Celikli, G. E. (2009). How does student ability and self-efficacy affects the usage of computer technology. *The Turkish online journal of educational technology, 8,* 1–9.

Issing, L. J. (1994a). From instructional technology to multimedia didactics. *Educational Media International, 31*(3), 171–182.

Issing, L. J. (1994b). Von der Mediendidaktik zur Multimedia-Didaktik. *Unterrichtswissenschaft, 22*(3), 267–284.

Issing, L. J. (2011). Psychologische Grundlagen des Online-Lernens. Im P. Klimsa und L. J. Issing (Hrgs.), *Online-Lernen. Handbuch für Wissenschaft und Praxis* (pp. 19–34). München: Oldenbourg.

Ivić, I. (1983). Predgovor. U L. Vygotsky, *Mišljenje i govor*. Beograd: Nolit.

Jakopović, S. (1984). *Pokret radne škole u Hrvatskoj*. Zagreb: Školske novine.

Jensen, E. (2005). *Poučavanje s mozgom na umu*. Zagreb: Educa.

Joët, G., Usher, E. & Bressoux, P. (2011). Sources of self-efficacy: An investigation of elementary school students in France. *Journal of Educational Psychology, 103*(3), 649–663.

Johnson, R. (2005). An empirical investigation of sources of application-specific computer-self-efficacy and mediators of the efficacy-performance relationship. *International Journal of Human-Computer Studies*, *62,* 737–758.

JRC-IPTS (2014), *Mainstreaming ICT-enabled Innovation in Education and Training in Europe* (http://ftp.jrc.es/EURdoc/JRC83502.pdf). Pristupljeno 22.06.2017.

Kanselaar, G., de Jong, T., Andriessen, J. & Goodyear, P. (2002). New technologies. In R.-J. Simons, J. van der Linden & T. Duffy (Eds.), *New learning* (pp. 55–82). Dordrecht: Kluwer Academic Publishers.

Kennedy, D. (1995). Philosophy for children and school reform: dewey, lipman, and community of inquiry. In R. Reed (Ed.), *Children, Philosophy, and Democracy*, (pp. 159–177). Calgary, British Columbia, Canada: Detsilig Publishers.

Khorrami-Arani, O. (2001). Researching computer self-efficacy. *International Educational Journal, 4*(2), 17–26.

Kilpatrick, W. H. (1918). *The Project Method*. New York: Columbia University, Teachers College.

Kilpatrick, W. H. (1929). *The Project Method: The Use of the Purposeful Act in the Educative Process* 11th impression: New York: Teachers college, Columbia University.

Kirchner, P. A. (2009). Epistemology or pedagogy, that is the question. In S. Tobias & T. M. Duffy (Eds.), *Constructivist instruction: Success or failure?* (pp. 144–157). New York: Routledge.

Kirchner, P. A., Sweller, J. & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational psychologist, 41*(2), 75–86.

Kirkpatrick, J. (2008). *Montessori, Dewey, and capitalism: Educational theory for a free market in education*. Clament: TLJ Books.

Kitching, L. & Wheeler, S. (2013). Playing games: Do games console have a positive impact on girl's learning outcome and motivation. *European Journal of Open, Distance and e-Learning, 16*(2), 111–122.

Klahr, D. (2009). To everything there is a season, and a time to every purpose under the heavens: What about direct instruction? In: S. Tobias, & T. M. Duffy (Eds.), *Constructivist Instruction: Success or failure?* (pp. 291–310). New York, NY: Routledge Publications.

Klapared, K. (Claparede, E.) (1929). Škola po meri. Beograd: Savremena pedagoška biblioteka.

Klassen, F.T., Skiera, E. und Wachter, B. (1990). *Handbuch der reform-pädagogischen und alternativen Schulen in Europa*. Baltmannsweiler:

Verlag Burgbücherei Schneider.

Knezek, G., Christensen, R. & Fluke, R. (2003). Testing a will, skill, tool model of technology integration. In *Paper presented at the annual meeting of the American educational*

Knezek, G., Christensen, R., Hancock, R. & Shoho, A. (2000). Toward a structural model of technology integration. *Paper presented to the annual Hawaii educational research association conference*. Honolulu, Hawaii, February 12, 2000.

Koitka, Ch. (Hrsg) (1989). *Freinet-Päddagogik*. Frankfurt am Main: Basis Verlag, Jetpress.

Köning, E. i Zedler, P. (2001). *Teorije znanosti o odgoju*. Zagreb: Educa.

Kozma R., B: (2003) Technology and classroom practices. *Journal of Research on Technology in Education*. 36:1, 1–14, DOI: 10.1080/15391523.2003.10782399

Kron, F. W. und Sofos, A. (2003). *Mediendidaktik. Neue Medien in Lehr- und Lernprozesse*n. München: Ernst Reinhardt Verlag.

Kulik, C.-L. C. & Kulik, J. A. (1986). Effectiveness of computer-based education in colleges. *AEDS Journal, 19*, 81–108.

Kulik, C.-L. C. & Kulik, J. A. (1991). Effectiveness of computer-based instruction: An updated analysis. *Computers in Human Behavior, 7*, 75–94.

Kulik, C.-L. C., Kulik, J. A. & Shwalb, B. J. (1986). The effectiveness of computer-based adult education: A meta-analysis. *Journal of Educational Computing Research*, *2*, 235–252.

Kulik, J. A., Kulik, C.-L. & Cohen, P. A. (1980). Effectiveness of Computer-based Teaching: A Meta-analysis of Findings. *Review of Educational Research, 50*(4), 525–544.

Kulik, J. A., Kulik, C.-L. C. & Bangert-Drowns, R. L. (1985). Effectiveness of computer-based education in elementary schools. *Computers in Human Behavior, 1*, 59–74.

Kutlaca, T. (2011). A study on computer usage and attitudes toward computer of prospective preschool teachers. *International Journal on New Trends in Education and Their Implications, 2*(1), 1–17.

Langford, P. E. (2005). *Vygotsky's developmental and educational psychology*. New York: Psychology Press.

Larbi-Apau, J. A. & Moseley, J. L. (2012). Computer attitude of teaching faculty: Implications for technology-based performance in higher education. *Journal of Information Technology Education, 11*, 221–233.

Laun, R. (1982). *Freinet – 50 Jahre danach: Dokumente und Berichte aus drei französischen Grundschulklassen*. Heidelberg: BVB – Edition Meichsner und Schmidt.

Lave, J. & Wenger, E. (1996). *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.

Law, N., Pelgrum, W. J. & Plomp, T. (Eds.) (2008). *Pedagogy and ICT use in schools around the world: Findings from the IEA SITES 2006 Study*. Hong Kong: CERC-Springer.

Lazonder, A. W. & van der Meij, H. (1994). Effect of error information in tutorial documentation. *Interacting with Computer, 6*(1), 23–40.

LeBlanc K. (2003). Guiding your child's artistic compass. *Montessori Life, 15(1)*, 8–9, 33.

Lee, C.-L. & Chen, M.-P. (2009). A computer game as a context for non-routine mathematical problem solving: The effects of type of question prompt and level of prior knowledge. *Computers & Education, 52*, 530–542.

Lenzen, D. (2002). *Vodič za studij znanosti o odgoju: što može, što želi*. Zagreb: Educa.

Leutner, D. (1993). Guided discovery learning with computer-based simulation games: Effect of adaptive and non-adaptive instructional support. *Learning and Instruction, 3*, 113–132.

Lindenberg, Ch. (1995). *Waldorfschulen: angstfrei lernen, selbstbewusst handeln*. Rheinbek bei Hamburg: Rowohlt.

March, T. (2006). The new www: Whatever, whenever, wherever. *Educational Leadership, 63*(4), 14–19.

Marlatt, G. A., Baer, J. S. & Quigley, L. A. (1997). Self-efficacy and adictive behavior. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 289–315). New York: Cambridge University Press.

Marušić, I., Jugović, I. i Pavin Ivanec, T. (2011). Primjena teorije vrijednosti i očekivanja u kontekstu odabira učiteljske profesije. *Psihologijske teme, 20*(2), 299–318.

Matijević, M. (1992). Kompjutorska „alternativna" škola. U B. Ličina, V. Previšić i S. Vučak (Ur.), *Prema slobodnoj školi* (str. 102–112). Zagreb: Institut za pedagogijska istraživanja.

Matijević, M. (1993). Jena-plan u europskim školama: nekad i danas. *Metodički ogledi*, 4(1), 87–94.

Matijević, M. (2001). *Alternativne škole: Didaktičke i pedagoške koncepcije*.

Zagreb: Tipex.

Matijević, M. (2008). Medijska uvjetovanost andragoške didaktike. *Andragoški glasnik, 12*(2), 119–126.

Matijević, M. (2015). Digitalni mediji i medijski odgoj u školi. U S. Opić, V. Bilić i M. Jurčić (Ur.), *Odgoj u školi* (str. 177–196). Zagreb: Učiteljski fakultet Sveučilišta u Zagrebu.

Matijević, M. (2017). Video igre u kulturi informalnog učenja odraslih. U M. Matijević i T. Žiljak (Ur.), *Kome treba obrazovanje odraslih* (str. 68–79). Zagreb: Agencija za strukovno obrazovanje i obrazovanje odraslih.

Matijević, M. (Ur.). (2017). *Nastava i škola za net-generacije*. Zagreb: Učiteljski fakultet Sveučilišta u Zagrebu.

Matijević, M., Topolovčan, T. & Rajić, V. (2017). Teacher assessment related to the use of digital media and constructivist learning in primary and secondary education. *Croatian Journal of Education, 19*(2), 563-603.

Maturana, H. (2002). Autopoesis, structural coupling and cognition: A history of these and other notions in the biology of cognition. *Cybernetics & Human Knowing, 9*(3–4), 5–34.

Maturana, H. R., & Varela, F. J. (1992). *The Tree of knowledge: The biological roots of human understanding*. Boston: Shambala.

Mayer, R. E. (2004). Should there be a three-strikes rule against pure discovery learning? *American Psychologist, 59*(1), 14–19.

Mayer, R. E. (2009). Constructivism as a theory of learning versus constructivism as a prescription for instruction. In S. Tobias, & T. M. Duffy (Eds.), *Constructivist instruction: Success or failure?* (pp. 184–200). New York: Routledge.

Mayes, T. & de Freitas, S. (2007). Learning and e-learning: The role of theory. In H. Beetham, & R. Sharpe (Eds.), *Rethinking pedagogy for a digital Age* (pp. 13–25). London: Routledge.

Mayes, T. & de Freitas, S. (2007). Learning and e-learning: the role of theory. In: H. Beetham, & R. Sharpe (Ed.), *Rethinking pedagogy for a digital age: Designing and delivering e-learning* (pp. 13–25). London: Routledge.

Mesić, M. i Topolovčan, T. (2016). Cjeloživotno učenje učitelja u digitalnom dobu: uloga ciljnih orijentacija u poslu i društvenih mreža. *Andragoški glasnik, 20*(1–2), 59–82.

Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education, 74*, 5–12.

Miljković, D., Rijavec, M., Vlahović-Štetić, V. i Vizek-Vidović, V. (2014). *Psihologija obrazovanja*. zagreb: IEP.

Montessori, M. (1909). *Il Metodo della Pedagogia – Scientifica applicato all'educazione infantile nele Case dei Bambini.* /1913/1926/1935.

Montessori, M. (1910). *Antropologia pedagogica* (English Edition: Pedagpgocal antropology, 1913).

Montessori, M. M., (2003). The *Human tendencies and Montessori education, in Communications ½; (1957)*. Amsterdam: Association Montessori Internationale.

Montessori, M., (1912) T*he Montessori method: Scientific pedagogy as applied to child education* In "The Children's Houses" with additions and revisions by the author; Frederick A. New York: Stokes Company

Montessori, M., (1939). *The four planes of education*: *Text of a lecture given during the Montessori Congress in 1938 in Edinghbourgh and in London 1939*. Ed. Montessori, Mario, Amsterdam : Association Montessori Internationale.

Mooney, C. G. (2000). *Theories of childhood: An introduction to Dewey, Montessori, Erikson Piaget and Vygotsky*. St. Paul: Redleaf Press.

Murphy, C. A., Coover, D. & Owen, S. V. (1989). Development and validation of the computer self-efficacy scale. *Educational and Psychological Measurement, 49*(4), 893–899.

Mušanović, M. (2000). Konstruktivistička teorija i obrazovni process. U M. Kramar (Ur.), *Didaktični in metodični vidiki nadaljnega razvoja izobraževanja* (str. 28–35). Maribor : Univerza v Mariboru, Pedagoška fakulteta Mariboru.

Nederlandse Jenaplan Vereinigung. Dostupno 02.01.2017. http://www.jenaplan.nl/

Null, J. W. (2004). Is constructivism traditional? Historical and practical perspectives on a popular advocacy. *The Educational Forum, 68*(2), 180–188.

OECD (2010). *Are the new millennium learners making the grade? Technology use and educational performance in PISA*. Paris: OECD Publishing.

OECD (2015). *Students, computers and learning: Making the connection.* PISA, OECD Publishing. http://dx.doi.org/10.1787/9789264239555-en

Oelkers, J. (2010). *Reformpädagogik: Entstehungsgeschichten einer international Bewegung*. Leipzig: Klett und Balmer Verlag Zug.

Oldfather, P., West, J., White, J. & Wilmarth, L. (1998). *Learning through children's eyes: Social constructivism and the desire to learn.* Washington, DC: American Psychological Association.

Overby, A., Patterson, A. S., Vasau, E. S. & Grable, L. L. (2010). Constructivism and technology use: Findings from the IMPACTing Leadership project. *Educational Media International, 47*(2), 103–120.

Palekčić, M. (2002). Konstruktivizam – nova paradigma u pedagogiji? *Napredak, 143*(4), 403–413.

Palekčić, M., Vollstädt, W., Terhart, E. i Katzenbach, D. (1999). Nastavni sadržaji i znanje. U A. Mijatović (Ur.), Osnove suvremene pedagogije (str. 291–336). Zagreb: Hrvatsko pedagoško-književni zbor.

Palmer, J. A. (Ed.). (2001). *Fifty Modern Thinkers on education; From Piaget to Present.* Routledge, New York.

Patchin, J. W. & Hinduja, S. (Eds.). (2012). *Cyberbullying prevention and response: Expert perspectives*. London: Routledge.

Patton, M. Q. (2002). *Qualitative research & evaluation methods*. Thousand Oaks: Sage.

Pavlin-Bernardić, N., Rovan, D. & Marušić, A. (2017). Students' Motivation for Learning Mathematics in Mathematical and Language-Program Gymnasiums. *Croatian Journal of Education, 19*(1), 93–115.

Pavlou, V. & Vyronides, M. (2009). Understanding factors that influence teacher's accetance of technology and actual computer use for teaching: the case of Greece. *Mediteranean journal of educational studies, 14*(2), 5–25.

Petersen, P. (1927/2001). *Der Kleine Jena-Plan einer freien allgemeinen Volksschule*. Weinheim und Basel: Beltz Verlag.

Petko, D. (2012). Teacher's pedagogical beliefs and their use of digital media in classrooms: Sharpening the focus of the „wil, skill, tool" model and integrating teacher' costructivist orientation. *Computers & Education, 58*, 1351–1359.

Philipps, S. (1999). *Montessori priprema za život: odgoj neovisnosti i odgovornosti.* Jastrebarsko: Naklada Slap.

Phillips, D. C. (1995). The good, the bad, and the ugly: The many faces of constructivism. *Educational Researcher, 24*(7), 5–12.

Piaget, J. (2002). *Judgement and the reasoning in the child*. London: Routledge.

Piaget, J. (2005). *Psychology of the intelligence*. London: Routledge.

Pintrich, P. R. & De Groot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*(1), 33–40.

Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review, 16*(4), 385–407.

Poljak, V. (1965). Cjelovitost nastave. Zagreb: Školska knjiga.

Potosky, D. (2002). A field study of computer efficacy beliefs as an outcome of training: the role of computer playfulness, computer knowledge, and performance during training. *Computers in Human Behavior*, *18*, 241–255.

Prichard, A., & Woollard, J. (2010.). *Psychology for the classroom: Constructivism and social learning*. London: Routledge.

Rajić, V. (2011). Razvojne faze djeteta i obrazovna postignuća u Montessori pedagogiji. U H. Ivon, L. Krogo i B. Mendeš (Ur.), *Pedagogija Marije Montessori – poticaj za razvoj pedagoškog pluralizma* (str. 155–165). Split: Dječji vrtić Montessori dječja kuća, Udruga Montessori pedagogije.

Rajić, V. (2012). Samoaktualizacija, optimalna iskustva i reformske pedagogije. *Napredak. 153, 2*; 235–248.

Rajić, V. (2013). *Elementi unutarnje reforme primarnog obrazovanja implementacijom didaktičko-pedagoških vidova reformskih pedagogija* (Doktorska disertacija). Zagreb: Učiteljski fakultet Sveučilišta u Zagrebu.

Reid, D. J., Zhang, J. & Chen, Q. (2003). Supporting scientific discovery learning in a simulation environment. *Journal of Computer Assisted Learning, 19*, 9–20.

Reiser, R. A. (2001a). A history of instructional design and technology: Part I: A history of instructional media. *Educational Technology, Research and Development, 49(1),* 53-64. 47.

Reiser, R. A. (2001b). A history of instructional design and technology: Part II: A history of instructional design. *Educational Technology, Research and Development, 49(2)*, 57-67.

Resnick, L. (1987). Learning in School and Out. *Educational Researcher*, *16* (9), 13–20.

Reynolds, C. R. & Fletcher-Janzen, E. (Eds.). (2009). *Handbook of clinical child neuropsychology*. New York: Springer.

Rideout, V. J., Foehr, U. G. & Roberts, D. F. (2010). *Generation M²: Media in the lives from 8- to 18-years-olds*. Menlo Park, CA: Kaiser Family Foundation.

Roberts, D., Foehr, U. G., Rideout, V. J. & Brodie, M. (1999). *Kids & media @ new millennium*. Menlo Park, CA: Kaiser Family Foundation.

Rodek, S. (1992). Istraživački trendovi u području primjene medija. *Istraživanja odgoja i obrazovanja, 9*, 83–87.

Rodek, S. (2007a). Modeli istraživanja medijskog učinka u odgoju i obrazovanju. *Školski vjesnik, 56*(1–2), 7–15.

Rodek, S. (2007b). Novi mediji i učinkovitost učenja i nastave. *Školski vjesnik, 56*(1–2), 165–70.

Rodek, S. (2011). Novi mediji i nova kultura učenja. *Napredak, 152*(1), 9–28.

Rosen, Y. & Salomon, G. (2007). The differential learning achievements of constructivist technology-intensive learning environments as compared with traditional ones: A meta-analysis. *Journal of Educational Computing Research, 36*(1), 1–14.

Rosen, Y. & Salomon, G. (2007). The Differential Learning Achievements of Constructivist Technology-Intensive Learning Environments as Compared with Traditional Ones: A Meta-Analysis. *Journal of Educational Computing Research, 36*(1), 1–14.

Ross, J. A. (1994). *Beliefs that make a difference: The origins and impacts of teacher efficacy*. Paper presented at the annual meeting of Canadian association for curriculum studies, Calgary, Alberta.

Salanova, M., Grau, R. M., Cifre, E. & Llorens, S. (2000). Computer training, frequency of usage and burnout: the moderating role of computer self-effcacy. *Computers in Human Behavior, 16*, 575–590.

Sam, H. K., Othman, A. E. A., & Nordin, Z. S. (2005). Computer self-efficacy, computer anxiety, and attitudes toward the internet: a study among undergraduates in Unimas. *Educational technology & society, 8*(4), 205–219.

Schaumburg, H. (2003). *Konstruktivistischer Unterricht mit Laptops? Eine Fallstudie zum Einfluss mobiler Computer aud die Methodik des Unterrichts*. (*Doctoral Dissertation*). Berlin: Freie Universität Berlin.

Schaumburg, H. und Issing, L. J. (2002). *Lernen mit Laptops: Ergebnise einer Evalutionsstudie*. Gütersloth: Bertelsmann Stiftung.

Schmidt, R. F. et al. (2009). Technology's effect on achievement in higher education: A stage I meta-analysis of classroom applications. *Journal of Computing in Higher Education, 21*(2), 95–109.

Schulz-Zander, R. & Tulodziecki, G. (2011). Pädagogische Grundlagen für das Online-Lernen. Im P. Klimsa und L. J. Issing (Hrsg.), *Online-Lernen: Handbuch für Wissenschaft und Praxix* (s. 35–46). München: Oldenbourg.

Schunk, D. H. & Zimmerman, B. J. (1997). Social origins of self-regulatory competence. *Educational Psychologist, 32*, 195–208.

Schunk, D. H. (2005). Self-regulated learning: The educational legacy of Paul R. Pintrich. *Educational Psychologist, 40*, 85–94.

Schwartz, D. L., Lindgren, R., & Lewis, S. (2009). Constructivism in an Age of Non-Constructivist Assessments. In S. Tobias, & T. M. Duffy (Eds.), *Constructivist Instruction: Success or Failure?* (pp. 34–61). New York, NY: Routledge Publications.

Schwarzer, R. & Fuchs, R. (1997). Changing risk behaviors and adopting health behaviors: The role of self-efficacy beliefs. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 259–288). New York: Cambridge University Press.

Schweiser, S. (2007). In history of ideas, constructivist pedagogy stems from German idealism. *Electroneurobiologia, 15*(4), 63-95.

Seitz, M. i Hallwachs, U. (1997). *Montessori ili Waldorf? Knjiga za roditelje, odgajatelje i pedagoge.* Zagreb: Educa.

Sekulić-Majurec, A. (2007). Kraj rata paradigmi pedagoških istraživanja. *Pedagogijska istraživanja, 4*(2), 189–202.

Selwyn, N. (1999). Student's attitudes toward computers in sixteen to nineteen education. *Education and Information Technologies, 4*(2), 129–141.

Shapka, J. D., & Ferrari, M. (2003). Computer-related attitudes and actions of teacher candidates. *Education and Information Technologies, 4*(2), 129–141.

Shariff, S. (2008). *Cyber-bullying: Issues and solutions for the school, the classroom and the home*. London: Routledge.

Simons, R. – J., van der Linden, J. & Duffy, T. (Eds.) (2002). *New learning*. Dordrecht: Kluwer Academic Publishers.

Skiera, E. (1982). *Die Jena-Plan-Bewegung in den Niederlanden*. Weinheim: Beltz.

Skiera, E. (2009). *Reformpädagogik in Geschichte und Gegenwart: Eine kritische Einführung*. München: Oldenburg.

Skiera, E. (2010). *Reformpädagogik in Geschichte und Gegenwart*. München: Oldenbourg.

Skinner, B. F. (1976). *Beyond Freedom and Dignity*. Middlesex: Penguin Books.

Spiro, R. J. & DeSchryver, M. (2009). Constructivism: When it's the wrong idea and when it's the only idea. In S. Tobias, & T. M. Duffy (Eds.), *Constructivist instruction: Success or failure?* (pp. 106–124). New York: Routledge.

Sprenger, M. (1999). *Learning and memory: The brain in action*. Alexandria: ASCD.

Standing, E. M. (1957). *Maria Montessori: Her life and work*. Fresno: Academy library guild.

Steiner, R. (1990). *Odgoj djeteta sa stanovišta duhovne znanosti*. Zagreb: Društvo prijatelja waldorfske pedagogije.

Swaak, J., Van Joolingen, W. R. & De Jong, T. (1998). Supporting simulation-based learning: The effects of model progression and assignments on definitional and intuitive knowledge. *Learning and Instruction, 8*(3), 235–252.

Swing, E. L., Gentile, D. A., Anderson, C. A. & Walsh, D. A. (2010). Television and video game exposure and the development of attention problems. *Pediatrics, 126*(2), 214–221.

Šagud, M. (2006). *Odgajatelj kao refleksivni praktičar*. Petrinja: Visoka učiteljska škola.

Šimleša, P. (1965). *Suvremena nastava*. Zagreb: Pedagoško-književni zbor.

Švajcer, V. (1964). *Grupa kao subjekt obrazovanja*. Zagreb: Matica hrvatska.

Tamim, R. M. (2009). *Effects of technology on students' achievement: A second-order meta-analysis* (Doctoral Dissertation). Monteral, Quebec: Concordia University.

Tamim, R. M., Bernard, R. M., Borokhovski, E., Abrami, P. C. & Schmid, R. F. (2011). What forty years of research says about the impact of technology on learning: A second-order meta-analysis and validation study. *Review of Educational Research, 81*(1), 4–28.

Taylor, P. C. (2015). Constructivism. In T. Gunstone (Ed.), *Encyclopedia of science education* (pp. 218–224). Dordrecht: Springer.

Taylor, P. C., Fraser, B. J., & Fischer, D. (1997). Monitoring constructivist classroom learning environments. *International Journal of Educational Research, 27*, 293–302.

Teo, T. & Ling Koh, J. H. (2010). Assessing the dimensionality of computer self-efficacy among pre-service teachers in Singapore: A structur-

al equation modelling approach. *International Journal of Education and Development Using Information and Communication Technology, 6*(3), 7–18.

Teo, T. (2002). Examing the relationship between student teachers' self-efficacy belifs and their intendend uses of technology for teaching: structural equation modeling approach. *The Turkish Online Journal of Educational Technology, 8*(4), 7–15.

Terhart, E. (1999). Konstruktivismus und Unterricht. Gibt es einen neuen Ansatz in der Allgemeinen Didaktik? *Zeitschrift für Pädagogik, 45*(5), 629–647.

Terhart, E. (2003). Constructivism and teaching: A new paradigm in general didactics? *Journal of Curriculum Studies, 35*(1), 25–44.

Thompson, L. F., Meriac, J. P. & Cope, J. G. (2002). Motivating online performance: The influences of goal setting and internet self-efficacy. *Social Science Computer Review, 20*(2), 149–160.

Timmerman, C. E. & Kruepke, K. A. (2006). Computer-assisted instruction, media richness, and college student performace. *Communication Education, 55*(1), 73–104.

Tobias, S. & Duffy, T. M. (Eds.). (2009). *Constructivist instruction: Success or failure?* New York: Routledge.

Topolovčan, T. (2015). *Uloga novih medija i računalna samodjelotvornost u individualiziranoj i konstruktivističkoj nastavi* (Doktorska disertacija). Zagreb: Učiteljski fakultet Sveučilišta u Zagrebu.

Topolovčan, T. & Matijević, M. (2014). Distinctions between computer self-efficacy of pupils and teachers in elementary school. In M. Teixeira, A. Szucz & I. Mazar (Eds.), *E-learning at work and the workplace* (pp. 517–526). Budapest: European Distance and E-Learning Network.

Topolovčan, T., Matijević, M. & Dumančić, M. (2016). Some predictors of constructivist teaching in elementary education. *Croatian Journal of Education, 1*8(1), Sp.Ed., 193–212.

Torgerson, C. L. & Elbourne, D. (2002). A systematic review and meta-analysis of the effectiveness of information and communication technology (ICT) on the teaching of spelling. *Journal of Research in Reading, 25*(2), 129–143.

Torkzadehi, G. & Van Dyke, T. P. (2002). Effects of training on Internet self-efficacy and computer user attitudes. *Computers in Human Behavior*, *18*, 479–494.

Torrano Montalvo, F. & Torres, M. C. G. (2004). Self-regulated learning: Current and future direction. *Electronic Journal of Research of Educational Psychology, 2*(1), 1–34.

Tschannen-Moran, M., Woolfolk Hoy. A. & Hoy, W. K. (1998). Teacher efficacy: It's meaning and measure. *Review of Educational Research*, *68*(2), 202–248.

Tulodziecki, G. (2014). Approaches to learning with media and media literacy education – trends and current situation in Germany. *Journal of Media Literacy, 4*(1), 44–60.

Usher, E. L. & Pajares, F. (2008). Self-efficacy for self-regulated learn-ing: A validation study. *Educational and Psychological Measurement, 68*, 443–463.

van Dijk, J. & Hacker, K. (2003) The digital divide as a complex and dynamic phenomenon, *The Information Society, 19(4)*, 315-326. DOI: 10.1080/01972240309487.

Vasta, R., Haith, M., M. i Miller, S. A. (1998). *Dječja psihologija*. Jastrebarsko: Naklada Slap.

Velički, V. i Topolovčan, T. (2017.). Neuroznanost, nastava, učenje i razvoj govora. U M. Matijević (Ur.), *Nastava i škola za net-generacije* (str. 77–114). Zagreb: Učiteljski fakultet Sveučilišta u Zagrebu.

von Cube, F. (1994). Didaktika kao kibernetičko-informacijska teorija. U H. Gudjons, R. Teske i R. Winkel (Ur.), *Didaktičke teorije* (str. 59–76). Zagreb: Educa

von Glasersfeld, E. (2003). *Radical constructivism. A way of knowing and learning*. London: Routledge Publication.

Vourela, M. & Nummenmaa, L. (2004). How undergraduate students meet a new learning environment? *Computers in Human Behavior*, *20*, 763–777.

Vygotsky, L. S. (1978). *Mind in society; The Development of higher psychological processes.* In M. Cole, V. John-Steiner, S. Scribner & E. Souberman. London: Harvard University Press.

Vygotsky L. (1977). *Mišljenje i govor*. Beograd: Nolit.

Vygotsky, L. S. (1983). *Mišljenje i govor*. Beograd: Nolit.

Wang, A. Y. & Newlin, M. H. (2002). Predictors of web-student performance: the role of self-efficacy and reasons for taking an on-line class. *Computers in Human Behavior*, 18, 151–163.

Wartella, E. A. & Jeninngs, N. (2000). Children and computers: New technology--old concerns. *Children and Computer Technology, 10*(2), 31–43.

Washburne, C. W. (1927). The Philosophy of the Winnetka Curriculum. In W. Chandler Bagley (Ed.), *Curriculum-Making: Past and Present*. Bloomington, IL: Public School Publishing.

Washburne, C. W. & Sidney P. Marland, Jr. (1963). *Winnetka: The History and Significance of an Educational Experiment*. Carleton Washburne (1889–1968), Dostupno 02.01.2017. http://education.stateuniversity.com/pages/2541/Washburne-Carleton-1889-1968.html#ixzz4Uc2kYf00

Washburne, C. W. (1925). Burk's Individual System as Developed at Winnetka. In G. Montrose Wippley (ed.), *Adapting the Schools to Individual Differences.* ed. Bloomington, IL: Public School Publishing.

Watzlawick, P. (1984). *The invented reality. How do we know what we believe we know?* New York: Norton and Co.

Watzlawick, P. (2003). *Wie wirklich ist die Wirklichkeit? Wahn – Täuschung – Verstehen.* München: Piper Verlag.

Weiland (1994). Erikson after Dewey: Education, psychology, and rhetoric. *Educational Theory, 44, 3.* 341–360.

Weinberg, R., Gould, D. & Jackson, A. (1979). Expectations and performance: A empirical test of bandura's self –efficacy theory. *Journal of Sport Psychology*, *1*, 320–331.

Wertsch, J., V. (2010). Vygotsky and recant developments, In V. G. Aukrust (Ed.), *Learning and Cognition in Education* (pp. 40–45). New York: Elsevier Ltd.

Westbury, I., Hopmann, S. & Riquarts, K. (Eds.). (2000). *Teaching as a reflective practice: The german didactic tradition*. New Jersey: Lawrence Erlbaum Associates.

Whitley, B. E. (1997). Gender differences in computer-related attitudes and behavior: A meta-analysis. *Computers in Human Behavior, 13*(1), 1–22.

Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 25*, 68–81.

Wikefeldt, U. (2011). Maria Montessori – holistički pristup životu U H. Ivon, I. Krolo & B. Mendeš (Ur.), *Pedagogija Marije Montessori – poticaj za razvoj pedagoškog pluralizma* (pp.179–185). Split: Dječji vrtić Montessori dječje kuća, Udruga Montessori pedagogije.

Winkel, R. (1994). Didaktika kao kritička teorija nastavne komunikacije. U H. Gudjons, R. Teske, i R. Winkel (Ur.), *Didaktičke teorije* (str. 95–116). Zagreb: Educa.

Wise, A. F. & O'Neill, K. (2009). Beyond more versus less: A Refreming of the debate on instructional guidance. In S. Tobias, & T. M. Duffy (Eds.), *Constructivist instruction: Success or failure?* (pp. 82–105). New York: Routledge.

Wozney, L., Venkatesh, V. & Abrami, P. C. (2006). Implementing computer technologies: Teacher's perceptions and practice. *Journal of Technology and Teacher Education, 14*(1), 173–207.

Yilmaz, K. (2008). Constructivism: Its Theoretical underpinnings, variations, and implications for classroom instruction. *Educational Horizons, 86*(3), 161–172.

Zacharia, Z. & Anderson, O. R. (2003). The effects of an interactive computer-based simulation prior to performing a laboratory inquiry based experiment in students' conceptual understanding of physics. *American Journal of Physiology, 71*(6), 618–629.

Zammito, J. (2002). *Kant, Herder, and the birth of anthropology*. Chicago: University of Chicago Press.

Zarevski, P. (2007). *Psihologija pamćenja i učenja*. Jastrebarsko: Naklada Slap.

Zehir Topkaya, E. (2010). Pre-service English teachers' perceptions of computer self-efficacy and general self-efficacy. *The Turkish online journal of educational technology, 9*(1), 143–156.

Zimmerman, B. J. (1997). Self-efficacy and educational development. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 202–231). New York: Cambridge University Press.

Žlebnik, L. (1962). *Opšta istorija školstva i pedagoških ideja*. Beograd: Naučna knjiga.

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