

Application of Traditional and Alternative Assessment in Science and Social Studies Teaching

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Abstract

Assessment of student achievement is one of the key components of teaching. Beside traditional forms of assessment, which are most common in teaching practice, recently alternative assessment is becoming more popular and frequent in educational discourse. Alternative assessment provides more comprehensive insight into students' achievements and gives authentic information about their knowledge, abilities, skills, attitudes, and competences which are developed during the teaching process. In the school subject Science and Social Studies this kind of assessment is applicable in various situations and different contexts. This paper discusses the application of different types of assessment methods in teaching. For this purpose, the results of the empirical research are presented. The main research objective was determining the application of traditional and alternative assessments during Science and Social Studies classes. The survey was conducted among primary school teachers in Zagreb and Zagreb County to detect assessment methods which are frequently or very rarely used in Science and Social Studies teaching. The results obtained allow for an analytical review of the current situation in the teaching practice of respondents. Based on the results of this study, we recommend an improvement of the assessment process in teaching practice, its reconceptualization and usage directed towards the evaluation of students' competences. The conclusions also provide recommendations for effective implementation of different types of assessment in teaching Science and Social Studies.

Key words: *alternative assessment; school subject Science and Social studies; students; teachers; traditional assessment.*

Introduction

Assessment in education is usually defined as the systematic process of gathering and discussing information in order to document student learning outcomes and the level of student achievement (Earl & Cousins, 1995; Stiggins, 1997; Black & William, 1998; Nelson & Nelson, 2001). However, educational theory and practice have dramatically changed over the past few decades. This change involves a different approach to the teaching and learning process, including a new approach to assessment. The dominance of the *knowledge transfer* paradigm was significantly reduced in favor of new paradigms such as *teaching centered on learning process* and *education based on the development of students' competences*. Education based on the development of students' competences comprises holistic development of students, including their cognitive, affective and conative abilities and the development of their integrated and complex skills. The realization of the above mentioned objectives requires an integrated approach which will be oriented towards the learning process and assessment that fits into the real-life dimension. The emphasis has been placed on the question *why* it is important to learn something and *how* acquired knowledge can be successfully applied in solving the complex, real-life problems. Within the framework of such teaching and learning, a criticism of traditional assessment has been developed, with educational scientists indicating its disadvantages (Higuchi, 1993; Pate et al., 1993; Akerson et al., 2002;). The assessment began to be understood as a complex process that should be carried out using various methods which can allow access to multiple indicators of student's progression. Also, it is emphasized that assessment should be implemented in the educational process and that it should take place simultaneously with the planning of learning and teaching process. Table 1 presents the most important features of the advanced concept of assessment and its distinction from the traditional view of assessment.

Table 1

The traditional and advanced concept of assessment in education

TRADITIONAL CONCEPT OF ASSESSMENT	ADVANCED CONCEPT OF ASSESSMENT
The emphasis is on summative assessment in a formal setting, which is used as the main or only form of assessment.	The emphasis is on formative and informal assessment.
The assessment is usually carried out at the end of the educational period or school year.	The assessment is a continuous process and integrated within the process of teaching and learning.
The assessment is based on standards. It compares student's scores with the scores of other students in order of their ranking.	The assessment is based on predetermined criteria. Teachers give students appropriate feedback in order to improve their learning process.
The emphasis is on content knowledge and reproduction of factual knowledge.	The emphasis is on the learning process and the development of students' competences.

Traditional and Alternative Assessment

During the early 90s of the 20th century, some educational scientists (Hancock, 1994; Broadfoot, 1996; Black & William, 1998; Shepard, 2000) intensely discussed how to adapt assessment to new requirements in education. An increasingly popular and common concept in educational discourse is alternative assessment, whose main intention is to provide a more comprehensive picture and authentic information about students, their knowledge, abilities, skills and attitudes which are developed during the teaching process. The analysis of scientific literature relating to assessment in education, detects the existence of two different forces that affect the manner of assessment in educational practice. On the one side are the proponents of standardized testing, who understand the curriculum as consisting of a body of knowledge and facts, that can easily be transferred from teachers to students (Serafini, 2001). On the other side are the proponents of alternative assessment who emphasize the multidimensionality of the curriculum (Earl & Cousins, 1995; Roberts & Kellough, 1996; Stiggins, 1997; Buhagiar, 2007). The accumulation of facts and information that proponents of traditional assessment emphasize is associated with content as a part of the curriculum, and for them the primary instrument of assessment is a standardized test. Standardized tests attempt to measure the amount of knowledge acquired by a student over a period of time. This view implies that knowledge exists separate from the learner, and students work to accumulate knowledge rather than construct it. Proponents of this paradigm considered that the standardized test is the only reliable and objective form of assessment that allows quick and easy identification and tracking of student progress (Kwak, 2003). However, although standardized tests can be easy to administer, easy to score, and easy to interpret, they cannot provide teachers with all the necessary information they need to make decisions about a student's educational need and progress. Their particular disadvantages are the creation of a competitive environment and anxiety which may limit students in knowledge and skills expressed during the assessment. The time limitation which dominates in standardized tests induces the application of simple forms of questions which require a reproduction of facts and application of lower levels of knowledge. Proponents of the opposite opinion emphasize that the process of students' learning, their demonstration of what they have learned, and the circumstances in which they learn, are just as important as the content of learning. This paradigm searches for alternatives to standardized testing, and finds them in alternative forms of assessment. The Constructivist theory had a significant impact on their development (Steffe & Gale, 1995; Dixon-Krauss, 1996). The term *alternative assessment* usually implies a drift from traditional assessment in order to achieve higher levels of educational outcomes (Buhagiar, 2007). Kelvin Tan (2012) distinguishes conservative, pragmatic and progressive concept of alternative assessment (Table 2).

Table 2
 Concept of alternative assessment by Kelvin Tan (2012)

Concept of alternative assessment	CONSERVATIVE	PRAGMATIC	PROGRESSIVE
FOCUS	Accepts the current situation (status quo).	Emphasized the effectiveness of evaluation.	Emphasizes the sustainability of assessment.
CONCEPT	Alternative assessment as a supplement or fun factor.	Alternative assessment as improvement of existing practices.	Alternative assessment as opposition to existing practice.
APPLICATION	Addition to existing practice without major significance to the subjects. <i>Conformist approach.</i>	Addition to existing practice with important meaning for the subjects. <i>Conciliatory approach.</i>	Improving the assessment within and outside of school subjects. <i>A critical approach.</i>
APPROACH	Acceptance of the current way of assessment and avoiding change.	Seeks to reconcile the different views of assessment and accept a compromise.	Belief about the critical need for alternative assessment. Resists to the compromise.

The conservative concept of alternative assessment is actually an advocacy for traditional assessment through written and oral exams. Teachers with a conservative concept focus on preparing students for performing well in external or internal summative examinations and in that context alternative assessment is considered a destruction because, in their opinion, it does not contribute to better performance in the final examinations. They do not dispute the utility of alternative assessment in the learning process, but they find that it can be only a supplement to existing practices, and it can be applied only if it does not interfere with students' preparation for final examinations.

The pragmatic concept of alternative assessment focuses on the effectiveness of different forms of assessment and the need for their improvement in order to achieve desired outcomes for each student. Teachers with a pragmatic concept recognize the limitations of traditional assessment and therefore apply alternative assessment to supplement the existing practice, perceiving traditional and alternative assessment as complementary paradigms which are compatible and enrich each other.

The progressive concept of alternative assessment emphasizes the need that the educational process has the focus on the realization of educational achievements which go beyond subject boundaries and are applicable and sustainable beyond the time boundaries of the school year. Teachers with a progressive concept perceive alternative assessment as a progressive innovation, highlighting the inadequacy of traditional assessment in the evaluation of learning outcomes that students could apply in future life, but emphasizing the benefits of alternative assessment in the same context.

Alternative assessment can be carried out in many different ways such as: assessment of students' abilities and skills in open type problem solving, students' self-assessment, student portfolio assessment, organization and realization of individual and collaborative student projects, etc. Roberts and Kellough (1996) enumerate some

forms of alternative assessment such as: anecdotal records, audio and video recordings, checklists, diaries, journal design, mind mapping, etc. Very often in literature, we can find similar concepts such as *authentic assessment*, which is a form of alternative assessment that integrates assessment of academic content with the assessment of students' competences important for lifelong learning. The *performance assessment* is also one concept of assessment which requires from students the construction of creation, demonstration or application of knowledge and skills in a practical situation associated with the real-life context.

Alternative assessment attempts to determine the ability of the students' thinking and analyzing, their ability to apply knowledge in new situations and their understanding of the relationship between concepts. Its advantage is the possibility of collecting a multitude of information on students' understanding, since it requires from students reasoning, description or explanation of answers. Such assessment is student-centered and seeks to motivate students to take responsibility and control over the learning process. It is an integral part of the learning experience and stimulates students to formulate and apply a wide range of cognitive and metacognitive abilities instead of the reproduction of the facts, and stimulates them to monitor their own learning progress (Wolf et al., 1991; Earl & Cousins, 1995; Stiggins, 1997). Also, alternative assessment means that students' work is evaluated through an informal and continuous process (Roberts & Kellough, 1996). It is more time-consuming than traditional assessment and requires from teachers higher skills in designing tasks, which enable students to express their understanding of concepts, and not merely reproduce facts.

Table 3

Comparison of philosophical beliefs and theoretical assumptions of alternative and traditional assessment (Anderson, 1998)

TRADITIONAL ASSESSMENT	ALTERNATIVE ASSESSMENT
Assumes knowledge has a single (universally) consensual meaning.	Assumes knowledge has multiple meanings.
Treats learning as a passive process (the emphasis is on learning about something, rather than on learning how to do something)	Treats learning as an active process (the emphasis is on learning how to do something).
Separates the learning process from the final product (evaluate only the final product).	Emphasizes the learning process and the final product of learning (taking into account what, why and how students learn).
The focus is on the use of pieces of information (using lower levels of reviews)	The focus is on research, i.e. developing the ability to solve real problems.
Assumes the purpose of assessment is to document and monitor student learning and to classify students by their scores.	Assumes the purpose of assessment is to facilitate learning.
Students' cognitive, affective and conative abilities are separate (emphasis on the cognitive dimension).	Recognizes a connection between students' cognitive, affective and conative abilities.
Embraces hierarchical model of power and control (students do not participate in decision-making).	Embraces a shared model of power and control (students participate in decision-making).
Perceives learning as an individual enterprise (student should independently solve a given task).	Perceives learning as a collaborative process (teacher and student are classmates).

Comparing alternative and traditional assessment, Anderson (1998) points out that traditional assessment represents the best way for evaluating traditional teaching because traditional teaching is based on facts presentation and their reproduction. He also points out that traditional assessment is not suitable for use in contemporary teaching which is carried out as project work, research activity or discovery learning, and which promotes diverse learning styles and multiple levels of thinking (Table 3).

Assessment of Student Achievement in Science and Social Studies Teaching

In the Croatian educational system assessment procedures are determined by the *Regulation on the methods, procedures and elements of assessing students in elementary and secondary schools* (Ministry of Science, Education and Sports, 2010). The Regulation defines assessment as the systematic collection of data on students' learning processes and the achieved level of their competences (knowledge, skills, abilities, independence and responsibility towards learning), which is coordinated with pre-defined and accepted methods, procedures and tools. Emphasis is placed on oral and written examinations. There are no specific guidelines for the implementation of other forms of assessment. Their implementation is mostly left to the teachers' personal estimation and preferences. In *Science and Social Studies*, which is a compulsory school subject in the first education cycle, effective implementation of various alternative forms of assessment is particularly suitable. They arise from the interdisciplinary character of this subject, which enables the development of a number of student competences in the natural sciences, social sciences, humanities and the technical area. Some of the possible alternative forms of assessment in the Science and Social Studies teaching are assessment of students' abilities and skills in experimental and research activities which are carried out during classes, individual or group projects and students' demonstration of practical and hands-on activities. Assessment of student's practical, organizational and creative skills in Science and Social Studies classes can also be achieved through various outdoor education activities which provide a holistic view on student's personality, through role-playing that requires the application of specific competences for coping with real-life situations, and through self-assessment and peer-assessment (De Zan, 2005). Research has shown that scores obtained through standardized tests do not wholly reflect the students' ability to apply science knowledge and skills in practical situations (Okur, 2008), and that they are not able to fully embrace or develop students' social and civic competences or learning to learn competence which can be developed in Science and Social Studies classes. The reason for this is the fact that traditional forms of assessment are based on the psychometric theories of the 1950s, which held that individuals have or develop specific and general abilities that can be measured by written tests and will predict or correlate with actual performance in practice. However, in assessing complex skills and abilities, the credibility of this assessment was brought into question because the application of knowledge and skills greatly depends on the situation and context in

which it occurs. According to some experts, assessment in science classes is supposed to test the skills that scientists use in their everyday work (Okur, 2008). When we take into account the above mentioned recommendation, in Science and Social Studies classes, which represents propaedeutic of natural sciences in the first educational cycle, the assessment should be based on the performance of experiments, research projects and the portfolio through which students can apply the concepts and principles specified in the curriculum of this school subject. Okur (2008) also suggests enriching the traditional assessment with various types of tasks, such as tasks that require the application of interpretation of scientific data, and competence of scientific presentation of the collected data.

Despite the many advantages of alternative assessment, it is still not adequately implemented in the educational system. A reason for this situation could be insufficiently developed teachers competences for its application (Stiggins, 1997; Cheng, 2006; Okur, 2008). Stiggins (1997) points out that the lack of competences for the application of alternative assessment is the main reason why most teachers feel uncomfortable with its use.

The Methodology of Scientific Research

Research Aim

The paper will present the results of the research whose aim was to determine the frequency of application of traditional and alternative assessment in Science and Social Studies classes as well as teachers' opinions on these forms of assessment.

Research Tasks

To achieve the above mentioned goals, it was necessary:

- a) to determine the frequency of use of traditional and alternative assessment in the Science and Social Studies classes;
- b) to determine whether there is a statistically significant difference in the frequency of use of traditional and alternative assessment in Science and Social Studies classes;
- c) to identify teachers' opinions on alternative and traditional assessment in Science and Social studies classes;
- d) to determine whether there is a statistically significant difference in the opinion of teachers on alternative assessment and the frequency of its use in Science and Social Studies classes;
- e) to determine whether there is a significant difference in the frequency of use of alternative assessment and opinion about it between teachers with master's degree (MA) and bachelor's degree (BA).

Hypotheses

H (1) Teachers apply traditional forms of assessment in Science and Social Studies teaching more frequently than alternative forms of assessment.

H (2) Teachers have a more positive opinion about traditional assessment than on alternative assessment.

H (3) There is no significant difference in the teachers' opinion in favor of alternative assessment and the frequency of its use.

H (4) Teachers with a master's degree apply alternative assessment in Science and Social Studies classes more frequently than teachers with a bachelor's degree.

The Research Instruments

For the purpose of this research a questionnaire for teachers had been developed. The questionnaire consisted of three parts. The first part obtained demographic data on the respondents, while the second and third part collected data about the frequency of use of traditional and alternative assessment and determined teachers' opinions on their application in the Science and Social Studies classes. Teachers estimated the frequency of application of traditional and alternative assessment on a Likert scale from 1 to 5 (1=never, 2=rarely, 3=sometimes, 4=often, 5=always). On a similar scale they also expressed their opinion about traditional and alternative assessment (1=strongly disagree, 2=disagree, 3=undecided, 4=agree, 5=strongly agree).

Research Sample and Implementation

The survey was conducted in January 2014, on a sample of primary school teachers (N=160) in the city of Zagreb and Zagreb County. It established that 58% of teachers have a master's degree, and 42% have a bachelor's degree. Teachers who have a master's degree graduated from the Faculty of Teacher Education, Teacher's Academy or Faculty of Philosophy – Pedagogical Sciences where they attended a four-year program of study. Teachers who have a bachelor's degree graduated from the Pedagogical Academy where they completed a two-year program of study.

Results

Figure 1 shows the arithmetic mean of the frequency of teachers' self-assessment in the application of traditional and alternative assessment and their opinion in favor of traditional and alternative assessment in teaching Science and Social Studies. Based on the values of the arithmetic mean for the application of traditional ($M=3.42$, $SD=0.44$) and alternative ($M=3.02$, $SD=0.65$) assessment, it was determined that teachers sometimes apply both forms of assessment, and that they apply traditional assessment more frequently than alternative assessment. The teacher's opinion in favor of traditional assessment in Science and Social Studies ($M=2.84$, $SD=0.51$) is mainly indifferent with a slight tendency towards a negative opinion, while the opinion in favor of alternative assessment is affirmative ($M=3.61$, $SD=0.50$). This means that teachers generally agree with the positive effects of alternative assessment in teaching Science and Social Studies.

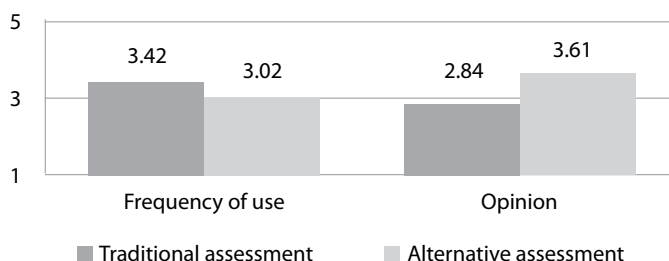


Figure 1. Comparison of arithmetic means of teachers' answers on two subscales of the questionnaire

Further analysis of the results in Table 4 shows that the use of traditional assessment in Science and Social Studies classes is significantly more frequent in relation to the use of alternative assessment ($t=6.23, p=0.00$). With regard to the teachers' opinion on alternative and traditional assessment (Table 5), it was established that teachers have a significantly more positive opinion about alternative forms of assessment in teaching Science and Social Studied than on traditional forms of assessment ($t=-6.94, p=0,00$).

Table 4

Comparison of frequency of use of traditional and alternative assessment in teaching Science and Social Studies

	N	M	SD	t-test	df	p
The frequency of use of traditional assessment	160	3.42	0.44	6.23	159	0.00**
The frequency of use of alternative assessment	160	3.02	0.65			

Table 5

Comparison of teachers' opinions on traditional and alternative assessment in teaching Science and Social Studies

	N	M	SD	t-test	df	p
Opinion in favor of traditional assessment	160	2.84	0.55	-6.94	159	0.00**
Opinion in favor of alternative assessment	160	3.61	0.51			

Comparing the arithmetic means of the frequency of use of traditional assessment in teaching Science and Social Studies ($M=3.42, SD=0.44$) and teachers' opinions in favor of such assessment ($M=2.84, SD=0.51$), and comparing the frequency of use of alternative assessment ($M=3.02, SD=0.65$) and opinion in its favor ($M=3.61, SD=0.51$), it was established that teachers have a more positive opinion of alternative assessment than of traditional assessment. Nevertheless, they apply alternative assessment in teaching Science and Social Studies less frequently than traditional assessment.

In order to determine if there is a statistically significant difference between teachers' opinions on traditional assessment and the frequency of its use in teaching Science and Social Studies, a t-test was conducted. It established a statistically significant difference between teachers' opinions in favor of the traditional assessment and the frequency of its application in teaching Science and Social Studies ($t=-5.82, p=0.00$). In the same way, it established a statistically significant difference between the opinions in favor

of alternative assessment and the frequency of its application in teaching Science and Social Studies ($t=16.01, p=0.00$).

It was established that teachers have a more positive opinion of alternative assessment than of traditional, but despite this they apply it less frequently than traditional assessment. Similarly, it was determined that teachers have a less positive opinion of the traditional forms of assessment than of alternative, but they apply it more frequently than alternative assessment (Table 6). Based on these results, we can pose the question about the reasons for discrepancies between the teachers' opinions regarding certain forms of assessment and its application in practice. It was expected that teachers, due to their less positive opinion of traditional assessment, rarely apply this kind of assessment in practice. Also it was expected that they apply alternative forms of assessment more frequently, because of their more positive opinion about it. However, somewhat surprisingly, the results indicate an inverse condition, indicating that teachers have a highly developed awareness of the value of alternative assessment, but possibly feel that they are not qualified for applying it.

Table 6

Comparison of the frequency of use of traditional and alternative assessment in teaching Science and Social Studies and teachers' opinions about such forms of assessment

		N	M	SD	t-test	df	p
Traditional assessment	Opinion of...	160	2.84	0.51	-5.82	159	0.00**
	The frequency of use	160	3.42	0.44			
Alternative assessment	Opinion of...	160	3.61	0.51	16.01	159	0.00**
	The frequency of use	160	3.02	0.65			

Further analysis (Table 7) showed that the difference in the frequency of the use of alternative assessment between teachers with different levels of education is not statistically significant ($t=1.88, p=0.07$). Also, the t-test showed that there are no statistically significant differences in teachers' opinions about alternative assessment in teaching Science and Social Studies between teachers with a master's and bachelor's degree ($t=0.90, p=0.37$).

Table 7

Comparison of the frequency of the use of alternative forms of assessment between teachers with master's and bachelor's degree

	Degree	N	M	SD	t-test	df	p
The frequency of use of alternative assessment	BA	85	3.16	0.65	1.88	158	0.07
	MA	75	2.84	0.62			
Opinion in favor of alternative assessment	BA	85	3.56	0.41	0.90	158	0.37
	MA	75	3.68	0.61			

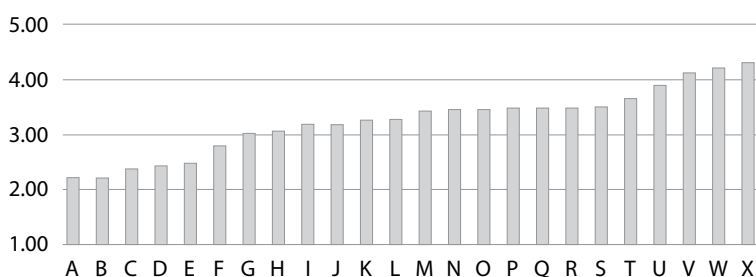
The analysis of arithmetic means for the frequency of application of each form of assessment in teaching Science and Social Studies, illustrated in Table 8, showed that teachers often apply written knowledge exams (created on their own) ($M=3.50$),

standardized tests ($M=3.52$), informal messages to students about their progress ($M=3.67$), and oral examination ($M=3.80$). All of those forms of assessment represent the traditional assessment of student achievement. On the other hand, they rarely apply patterns for observation which include criteria for high quality assessment of student abilities ($M=2.18$), and only sometimes encourage student self-assessment ($M=2.87$), which are important forms of an alternative assessment.

Table 8
Frequency of application of traditional and alternative assessment tools in Science and Social Studies classes

Methods of assessment	M	SD
Pattern for observation	2.18	0.76
Self-assessment	2.87	0.54
Final exams	2.93	0.64
Initial exams	3.05	0.72
Peer-assessment	3.25	0.42
Performance tasks	3.30	0.86
Teachers-made written tests	3.50	0.54
Standardized exams	3.52	0.62
Informal message	3.67	0.44
Oral examination	3.80	0.54

Based on the results presented in Figure 2, we can conclude that teachers in Science and Social Studies classes usually assess students' attitudes toward learning ($M=4.32$), their progress in learning ($M=4.23$), their effort ($M=4.12$), students' individual project ($M=3.90$), and students' group project ($M=3.67$). On the other hand, they rarely analyze and assess the creation of presentations ($M=2.22$), creation of brochure ($M=2.22$), rarely assess creation of student's portfolio ($M=2.40$), as well as students' preparation for speaking on a selected subject ($M=2.45$).



Legend:

- | | | |
|--------------------------------|---|--------------------------|
| A – Presentation creation | I – Conducting experiments | Q – Group work |
| B – Brochure creation | J – Presentation | R – Homework |
| C – Student's portfolio | K – Mind mapping | S – Demonstration |
| D – Holding a speech | L – Participation in heuristic conversation | T – Group project |
| E – Essay on a selected topic | M – Power point presentation | U – Individual project |
| F – Role play | N – Behavior | V – Effort |
| G – Abilities in didactic game | O – Product of handwork | W – Progress |
| H – Achievement on the quiz | P – Participation in discussion | X – Attitude to learning |

Figure 2. Frequency of use of traditional and alternative methods of assessment

Discussion

Hypothesis (1), which assumed that teachers apply traditional assessment in Science and Social Studies classes more frequently than alternative assessment, *is accepted*. The analysis showed a statistically significantly more frequent application of traditional forms of assessment in teaching Science and Social Studies compared to the application of alternative forms of assessment, which indicates the still overwhelming dominance of traditional assessment in current educational practices. This situation is determined by the structure of the valid documents such as Croatian National Educational Standard (Ministry of Science, Education and Sport, 2006) which lists the educational achievement for students in school subject Science and Social Studies, but does not specify methods for their assessment. The list mentions mainly cognitive achievements. It does not adequately include holistic development of students' personality, which indicates the prevalence of traditional teaching, and therefore, the assessment is also traditionally oriented. Similarly, the *Regulation on the methods, procedures and tools for assessing students' achievement* (Ministry of Science, Education and Sport, 2010) with its content structure suggests that teachers implement traditional assessment (written and oral exams) and does not provide specific guidance about the application of alternative assessment.

Hypothesis (2), which assumed that teachers have a more positive opinion of traditional than of alternative assessment, *is rejected*. Teachers have a significantly more positive opinion of alternative assessment compared to their opinion of traditional assessment in teaching Science and Social Studies. Based on this results we can conclude that teachers have a highly developed awareness of the benefits that alternative assessment provide in the context of obtaining complete information about students and their learning process, which is an important prerequisite for its successful application in teaching Science and Social Studies.

Hypothesis (3), which assumed that there is no significant difference in teachers' opinion in favor of alternative assessment and the frequency of its application in teaching, *is rejected*. Teachers' opinions about alternative assessment are more positive, in relation to their estimate of the frequency of its use in practice. Based on these results, we can pose the question about the reasons for the discrepancies between teachers' opinion in favor of alternative assessment and the frequency of its implementation. Some of the possible reasons can be found in the absence of a clear definition and specific guidelines for its implementation in relevant educational documents, the time consuming structure of this form of assessment, but also insufficiently developed teachers' competences for its implementation in teaching.

Hypothesis (4), which assumed that teachers with master's degree apply alternative assessment in Science and Social Studies classes more frequently than teachers with a bachelor's degree, *is rejected*. Although it was assumed that teachers with a higher level of education tend to apply alternative forms of assessment more frequently because of

the possible view that they had more opportunities for its cognition throughout their education, it was established that this is not the case. Consequently, we can conclude that all previous forms of teachers' formal education provide sufficient support to alternative assessment, or that different forms of teachers' professional training during their internship influenced their positive opinion about it.

Conclusion

Based on the results of the research presented, we can conclude that teachers' opinions of alternative assessment are mostly pragmatic, which means that they notice the limitations of traditional assessment, and they see alternative assessment as an opportunity to improve current practice. However, despite the pragmatic opinion of alternative assessment, we can observe the mismatch between teachers' positive opinion of alternative assessment and the rare frequency of its application in teaching Science and Social Studies. The reasons for this situation are the time consuming alternative assessment, lack of specific guidelines for its application in educational practice, lack of criteria for the interpretation of such assessment, and also the lack of support of educational policies for its efficient and effective implementation. In spite of the above mentioned advantages of alternative assessment, school willingness for the acceptance of efforts to increase students' responsibility and control over their own learning process is still not expressed enough. There is still a significant gap between contemporary theoretical approaches and existing teaching practices (Tot, 2010). Therefore, it is necessary to continue with promoting teachers' awareness on this relatively new approach in the Croatian system of education. In Croatian schools so far, in most cases, variables that are important for students' orientation in the future work process and life situations were not assessed (Matijević, 2005). The present orientation of the Croatian educational policy towards the development of student competences, recommended by the National Curriculum Framework for preschool education and general compulsory and secondary education (Ministry of Science, Education and Sport, 2011), can be regarded as an opportunity to improve the process of assessment in education and to modernize our schools in general. The application of alternative assessment would be more frequent, and certainly more effective if we would ensure adequate support to teachers and if we would create specific guidance and criteria for its implementation. Also, the organization of teachers' professional development which will be directed towards the acquisition of appropriate competences for effective implementation of alternative assessment would be useful. Therefore, we recommend a further reconceptualization of the process of assessment in teaching Science and Social Studies, which includes an orientation toward more progressive understanding of alternative assessment, as well as forming more specific guidelines for its implementation. The teachers' positive opinion of alternative assessment can be considered as a good foundation for their efficient and faster implementation in teaching Science and Social Studies.

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Primjena tradicionalnih i alternativnih oblika vrednovanja učeničkih postignuća u nastavi Prirode i društva

Sažetak

Vrednovanje učeničkih postignuća jedna je od ključnih komponenti nastave. Uz tradicionalne oblike vrednovanja, koji su uobičajeni u nastavnoj praksi, sve popularniji i učestaliji diskurs u obrazovanju zauzimaju i alternativni oblici vrednovanja učeničkih postignuća. Alternativni oblici vrednovanja usmjereni su na pružanje cjelovitije slike i više autentičnih informacija o učeniku, njegovu znanju, sposobnostima, vještinama i stavovima, odnosno kompetencijama koje razvija tijekom nastavnog procesa, a u nastavi Prirode i društva primjenjivi su u raznovrsnim situacijama i kontekstima. U ovome radu razmatraju se različiti oblici vrednovanja učeničkih postignuća i mogućnosti njihove primjene u nastavi. U tom kontekstu predstavljeni su rezultati istraživanja kojemu je osnovni cilj bio utvrditi koliko često učitelji primjenjuju tradicionalne i alternativne oblike vrednovanja tijekom nastave prirode i društva. Istraživanje je provedeno anketiranjem učitelja razredne nastave na području Grada Zagreba i Zagrebačke županije. Istraživanjem su detektirani oblici vrednovanja koje učitelji učestalo ili pak vrlo rijetko primjenjuju u nastavi prirode i društva. Dobiveni rezultati omogućuju analitičko razmatranje postojećeg stanja u nastavnoj praksi anketiranih ispitanika. Na temelju analize dobivenih rezultata, a u cilju osuvremenjivanja procesa vrednovanja učeničkih postignuća, kao i njegove rekonceptualizacije i upotrebe usmjerene prema vrednovanju učeničkih kompetencija, zaključci rada donose preporuke za učinkovitiju primjenu vrednovanja u nastavi Prirode i društva.

Ključne riječi: *alternativno vrednovanje; Priroda i društvo; tradicionalno vrednovanje; učenici; učitelji.*