

How Teachers Evaluate the Environmental Studies Subject Textbook Sets

Öđretmenler Çevresel Çalışma Kitap Setlerini nasıl Deđerlendirir?

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Abstract

The curriculum for the Environmental Studies subject which is taught in the Republic of Slovenia in the first three grades of primary schools is based on the constructivist and humanistic theory of learning and teaching. For teachers, textbook sets are a crucial aid in implementing the learning process. For the aforementioned subject, there are many sets and several factors that affect their choices. In this research study, we interrogated which textbook sets teachers use and how these help them in implementing the constructivist teaching for the Environmental Studies subject. The research was conducted on a representative sample of third-grade teachers. We found that teachers mainly use three textbook sets from various publishers and that there is only one in which the proposed and anticipated pupils' activities, methods and forms of work assume a more active role for the pupils during the learning process.

Keywords: Primary school, Environmental Studies subject, third year teachers, textbooks sets

Öz

Slovenya Cumhuriyeti'nde ilkokulun ilk üç sınıfı düzeyinde öđretilen Çevre Çalışmaları konusunun öđretim programı yapılandırma ve insancıl öđrenme ve öđretme teorilerine dayanır. Ders kitabı setleri öđrenme sürecinin tamamlanmasında öđretmenler için oldukça önemli bir yardımcıdır. Daha önce belirtilen konuda birçok set vardır ve bu setlerin seçimlerini çok sayıda faktör etkilemektedir. Bu araştırma çalışmasında, hangi ders kitabı setinin öđretmenler tarafından kullanıldığı ve bunların yapılandırma yaklaşımına göre öđretim yöntemlerinin uygulanmasında nasıl yardımcı oldukları sorgulanmıştır. Araştırma üçüncü sınıf öđretmenlerini temsil eden bir örneklem üzerinde yürütülmüştür. Öđretmenlerin temel olarak çeşitli yayınevlerine ait üç ders kitabı seti kullandıkları ve öđrenme süreci boyunca tasarlanan ve öđngörülen öđrenci etkinlikleri, yöntem ve çeşitli çalışmalarda öđrencilerin daha aktif rol aldığı varsayılan sadece bir tane kitap setinin öđduğu bulunmuştur.

Anahtar Sözcükler: Temel eğitim, çevre çalışmaları, üç yıllık öđretmenler, ders kitapları setleri.

Introduction

In the Republic of Slovenia, the shift towards the constructivist design of learning and teaching in the early school period was created by the Tempus project titled "The development of primary natural science" in the beginning of the 1990s. This project was meant to exceed the view of learning as adding new to old, and of lessons as predominating teaching of the learning material. The consequence was mainly pupils' reproductive knowledge. This was also pointed out in an IAEP study in 1991 (Piciga & Japelj, 1993).

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Constructivists believe that one cannot *give* knowledge in its end form to another, nor *receive* it from someone, but must build it through one's own mental activity. In this process, some already existing – although incorrect and incomplete conceptions – that we have about the world and phenomena are very important. Constructivists therefore argue that knowledge is built (constructed) on our own in the process of making sense of our experiences (Driver, 1983; Osborn & Freyberg, 1985; Skott, 1985; Marentič, 2003).

Active learning and encouraging pupils to explore and build their own knowledge are known to be central to constructivism (Šteh, 2004). This way of teaching demands a change of roles for the teacher (Marentič, 2004). The organisation and execution of classes according to the principles and phases of constructivism is very challenging for a teacher. As some researchers have stated (e.g. Keogh & Naylor, 1996), teachers come across many problems in transferring theory to practice.

The constructivist conception (Marentič, 2004) or model (Jank, 2006) of learning and teaching is a fundamental guideline in the Environmental Studies subject curriculum. The subject developed through the Elementary School Curricular Reform (1996) in the Republic of Slovenia, and has replaced the subject Natural and Social Studies, which was part of the Program of Life and Work of the Elementary School (1984).

The purpose of the Environmental Studies subject, which is taught in the first triennium of the nine-year elementary school system, is to show the complexity, variety and intertwining factors present in the human, natural and social environment. It includes elements from different scientific fields – natural, technical and humanistic.

Understanding environment and the development of cognitive areas are basic objectives of the subject. In a narrower sense, this means getting to know the facts, designing concepts and, in a broader sense, developing abilities (skills) and processes: comparing, sorting, editing, measuring, recording data, forecasting and concluding, experimenting and communicating. With this, an attitude towards facts, openness to accepting another man's ideas and sensitivity to happenings in the natural and social environment should also be developed (Krnjel et al., 2003).

The curriculum foregrounds an active role for the pupil, his ideas, learning about phenomena through the pupil's own concrete experiences and measuring through a variety of different learning forms and work methods and according to the learning – target and development – process-based approach and on the grounds of perspectives of constructivist and humanistic theory of learning and teaching.

Pupils should get to know the environment through their own actions (blending, mixing liquids, preparing food, drawing shadows in the backyard...). Through activities, they should develop specific procedures: first observing, and then determining the characteristics through experiments, sorting, editing and communicating, and later forecasting and measuring. These procedures enable the shift from hands – actions to head – thinking (Krnjel, 1996).

Pupils' activities are recommended in the curriculum for Environmental Studies (2003). Diverse pupils' activities are foreseen. Analysis of these activities (Hus, 2004) found that practical activities of pupils prevail, followed by slightly less expressive activities, and even less sensory and mental activities which are consistent with the children's developmental stage. Piaget has emphasised that children's thinking develops at this stage in a way that we organize as many situations as possible where pupils operate with concrete objects a lot, follow practical operations and internalize them (Labinowicz, 1989).

In the ES curriculum, the role of the teacher is also especially defined. A teacher should build his classes on the personal experience of the children, consider pupils' ideas and experiences when planning the classes, develop pupils' ideas in the direction of the scientific concepts, raise their awareness of how they learned something. Often by adapting pupils' activities to their abilities, teachers are encouraged to use various forms and methods of work, guide the pupils into research and ensure they experience various sources of cognition (with the emphasis on

learning about the environment in immediate reality). During monitoring and evaluating, a teacher should pay attention to the concepts and facts and mainly focus on the development of certain skills and abilities, as well as the pupils' views (Krnjel et al., 2003).

This kind of lesson can be realised with the help of different modern didactic strategies that have a common denominator – open lessons. For this kind of lesson it is typical that we do not cling to teaching goals, study contents and methods but rather adjust to the pupils' interests and abilities, and that we create conditions for the pupils' participation during lessons, take into account already acquired experiences of the pupils, and so on (Kron, 1994; Blažič et al., 2003). These characteristics of open classes can be seen in research, project and problem lessons, behaviour (work) orientated lessons, experience-orientated lessons and team lessons.

Research carried out on Environmental Studies subject (e.g. Hus, Ivanuš Grmek, Čagran, 2005; Vrbek, 2008; Hus, Ivanuš Grmek, 2011; Hus, Kordigel Aberšek, 2011) has shown that teachers introduce constructivistic elements into classes, but they encounter problems that are associated with a number of different causes: lack of appropriate didactic material, too many pupils in class, inadequate qualifications for this type of work, etc.

Textbook sets for the Environmental Studies classes

A textbook set is a didactic material that represents a rounded entirety for an individual subject class. Mostly it consists of a workbook, a textbook, a manual for the teacher and teaching aids. It should help teachers to achieve the learning objectives written into the curriculum.

A brief insight into the history of the Environmental Studies subject (ESS), which was formerly known as the Natural and Social Studies subject (NSS), shows that up to the 1990s, textbook sets were not available to the teachers for teaching this subject. There were specific elements of a didactic set, and they were published successively: firstly a textbook, then a workbook, a methodical manual and then additional components – not as a set.

There were already attempts to overcome these shortcomings in the textbook sets for Natural and Social Studies in the 1990s, but it was being considered in a greater extent in building didactic sets for the Environmental Studies classes at the end of last century with the school reform (1998).

Today, several textbook sets for ES classes, from various publishers, are available to teachers. Many factors influence the decision of which set to choose or whether to choose one at all, such as a presentation of a textbook set from an individual publisher, other teachers' opinions, textbook funds, the influence of the principal, etc. Still, there remains the topical issue of the role of a textbook and a workbook in the Environmental Studies learning process. The fact is that autonomy is left to the teacher with regard to whether to include them in classes or not. The aforementioned issue was already a matter of debate under the Natural and Social Studies subject.

Bezić (1973) believes that NSS textbooks cannot be a primary source of knowledge, but can only help and enable pupils to solve their concrete problems with working by analogy. Regarding the NSS textbooks, he also finds that from NSS subject tasks' point of view, it is very difficult to write a textbook at a national level, because every school has different contents depending on its location. He also points out the rapid obsolescence of data in the textbooks because occurrences in nature and society are constantly changing.

Adamič (1990, p. 277) says: 'The definition of the role in the learning process must derive from basic characteristics of cognitive and thought process of the children in this period. That is why mainly direct and practical experiences of the pupils are the primary sources of cognition at this developmental stage'. He continues: 'So there is no indication to assume that a textbook at this stage is the basic source of learning and cognition, but rather that a role of a textbook is primarily motivational and that pupils are indirectly being trained to acquire new knowledge.' He concludes that inflexible and mechanical use of a textbook is therefore inappropriate and ineffective.

Mileksić also talks about the motivational value of a textbook at the class level. He takes cognitive

surprise (Vigotski) as a motivational factor, which means that tasks in which a pupil cannot solve a problem without minimal help from an adult have this motivational value. Taking this motivational scheme into account, as well as the individual differences among pupils, the workbook should be differentiated on at least ten difficulty levels in order for it to be used as a motivational tool. He concludes his thinking: '/.../ in the first triad elementary didactics does not need textbook material. /.../' or '/.../ textbook material in the first triad of the primary school is needed for two functions: for literacy and for control of certain learning methods' (Milekšić, 1992, p. 30). For this purpose he is in favour of books that are adjusted to the developmental stage by thematic clusters, in which a pupil looks for missing information, and mainly learns to read.

The participants of the Bled meeting on Textbooks Today and Tomorrow have recommended, in relation to natural science textbooks, that textbooks should be context-processual for the initial level. These are the textbooks that are directed into actions that help pupils to come to as many cognitions as possible under their own volition. It is about textbooks that help children to learn the processes of gaining new knowledge. 'This means that starter textbooks should be organized around some linking topics that are interesting enough to a child to raise and keep his attention. There should also be enough suggestions in the textbooks for practical and mental activities. In particular experiments and observations should be cognitively surprising wherever possible' (Ferbar, 1992, p. 42).

Scribe Dimec (1995, p. 110) also believes that science textbooks are necessary on a class level; but they should be, according to her, designed in a way to direct children into learning with concrete objects and into concrete phenomena. With the help of activities, tasks and questions, they should lead the children to nature, rather than replacing it with pictures, photographs and texts.

From the opinions presented above, we can conclude that the authors have various opinions about the role of a textbook in NSS classes – or, now, ES classes – as well about how these should be designed. In particular, the last two opinions are strongly influenced by the constructivistic theory of learning and teaching, which is understandable since both authors were actively involved in the Tempus project at the time.

The results of the primary school reform were new textbook sets that should be based on cognitions of the constructivist theory of learning and teaching. No research has been carried out yet into how these textbook sets take this into account. The question arises of whether textbook sets can be a factor that contributes to the success of curricular reform for the Environmental Studies subject.

Method

Throughout this empirical study, it was inquired how teachers evaluate the representation of some constructivist elements in the selected textbook set prepared for the Environmental Studies subject.

We were interested in the following research questions:

- Which textbook set do teachers use for the Environmental Studies subject?
- How do the teachers assess the pupils' possibilities of independent learning with the use of the selected textbook set?
- How do teachers assess the representation of learning forms in the textbook sets?
- How do particular textbook sets offer possibilities for the use of more active learning methods?
- What is the teachers' opinion of the representation of selected pupils' skills in the textbook sets?

For our survey, we used a descriptive causal non-experimental method (Sagadin, 1993). Using a causal non-experimental method of empirical research, we collected data on a non-random sample of teachers (n=63) teaching the third grade of primary school. Over all (nine) units of the NEI (National Education Institute) of Slovenia we selected an equal share of teachers (11.1%). A

pattern selected in this way therefore represents a population of Slovene teachers that teach the Environmental Studies subject in the third grade.

To collect data we used a questionnaire with verified dimensional characteristics (validity, reliability, objectivity). Validity is based on rational assessment of the test questionnaire by experts for content- and format-related properties and its pre-test use. Reliability was ensured through detailed instructions, single meanings, specific questions and comparison of answers to questions with similar content. Objectivity in the data collection stage is based on the use of paper questionnaires, and in the validation phase on recognition of the answer with subjective intervention.

Answers to closed-type questions are presented in tabular form (f, f %), and the existence of differences according to the publishing house has been statistically verified with χ^2 -test. When the conditions for the use of χ^2 -test were not justifiable, we eliminated the categories with low frequency or we declined the test.

Results and Discussion

The analysis of the representation of the publishers' textbooks sets

The decision about the appropriate textbook set is one of the most important and difficult for a teacher (Gibbs & Fox, 1999; Martin, 2001).

For the subject Environmental Studies, the teachers can choose from different textbooks sets from different publishers. There are many factors that influence the decision of which set to choose or whether to choose one at all, such as the presentation of a textbook set by the individual publishing houses, the opinion of other teachers, the textbook fund, the influence of the principal, etc.

Our research shows that teachers use Environmental Studies textbook sets from three different publishers. We named them Z1 (49.2%), Z2 (33.3%), Z3 (17.5%). They belong to the more successful publishers in Slovenia.

The evaluation of the textbook sets from the viewpoint of the encouragement of independent learning

Encouragement of independent learning is one of the basics of constructivist teaching. It is more effective and qualitative learning that activates students mentally and emotionally. This is an active learning that runs with independent searching and thinking, with logical dialogue in a group, with asking and testing hypotheses; basically, it is learning that is involved in a real-life environment (Marentič, 2003). We were interested how this was represented in individual textbook sets according to teachers' opinions.

Table 1.

Number (f) and percentage composition (f%) of the respondents assessing the textbook set from the promotion of pupils' independent points of view according to the publisher

answers	Z1		Z2		Z3		Together	
	f	f %	f	f %	f	f %	f	f %
Yes	7	63,6	16	76,2	28	90,3	51	81,0
No	4	36,4	5	23,8	3	9,7	12	19,0
Together	11	100,0	21	100,0	31	100,0	63	100,0
result χ^2 - test	$\chi^2 = 4,213 < \chi^2 (a = P = 0,05, g = 2) = 5,991$							

The majority of teachers believe that the selected textbook set encourages pupils towards independence. This is substantiated by the opportunities that a set offers for research and experimental work, and also for verbal and visual encouragement of pupils. Regarding the publishers, we did not find any statistically significant differences. However the tendency shows ($\chi^2 = 4.213 < \chi^2 (\alpha = 2P = 0.05, g = 2) = 5.991$) that the third publisher has some advantages in comparison to the second and especially the first from the viewpoint of encouraging pupils to undertake individual learning.

The assessment of the representation of learning forms in the textbook sets of individual publishers

In didactic recommendations of the Environmental Studies curriculum, the following was written about the learning forms: 'The teaching forms should also be adjusted to the child's age, from group classes (guided experimenting and research) to individual work and working in pairs and group where knowledge is transferred from one to another and it does not arise only from own experience' (Krnjel et al., 2003, p. 40).

In Table 2 we can see how the authors of the textbooks took the aforementioned starting point into consideration according to the teachers' opinion.

Table 2.

Number (f) and percentage composition (f%) of teachers assessing the representation of learning forms in the selected textbook set according to the publisher

learning forms	answers	Z1		Z2		Z3		result χ^2 - test
		f	f %	f	f %	f	f %	
individual work	Too much	5	45,5	2	9,5	1	3,2	$\chi^2 = 22,399 > \chi^2(a = P = 0,05, g = 4) = 9,488$
	Enough	6	54,5	12	57,1	28	90,3	
	Too little	0	0,0	7	33,3	2	6,5	
working in pairs	Too much	0	0,0	0	0,0	0	0,0	$\chi^2 = 2,628 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	4	36,4	12	57,1	20	64,5	
	Too little	7	63,6	9	42,9	11	35,5	
group work	Too much	0	0,0	0	0,0	0	0,0	$\chi^2 = 2,912 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	6	54,5	17	81,0	24	77,4	
	Too little	5	45,5	4	19,0	7	22,6	

As estimated by the teachers, individual work is most represented, regardless of the publisher, and working in pairs is least represented. Statistically important differences regarding the publisher exist in the case of individual learning. The latter can mostly be found in the third textbook set.

Use of diverse learning forms provides the path to more resistant and meaningful knowledge with understanding (Plut Pregelj, 2008), which is also an important starting point in constructivist teaching. Many also agree with Vygotsky's belief that higher mental processes develop through social negotiation and interaction, which is why cooperation in learning is highly valued (Woolfolk, 2002).

Evaluation of the representation of teaching methods in the textbook sets of individual publishers

The constructivists defend all methods that encourage thinking, enable new, surprising cognitions and unusual ways of observation, open new views and broaden interests and new horizons. The adequacy of a certain method depends on the goal and the content, on a student and teacher and on the cause and the content (Špoljar, 2004, str. 66). The teachers that were surveyed have evaluated the representation of each method in the selected textbook set.

Table 3.

Number (f) and percentage composition (f%) of teachers assessing the representation of teaching methods in the selected textbook set according to the publisher

teaching methods	answers	Z1		Z2		Z3		result χ^2 - test
		f	ff%	f	ff%	f	ff%	
explanation	Too much	0	0,0	0	0,0	1	3,2	$\chi^2 = 0,863 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	10	90,9	19	90,5	29	93,5	
	Too little	1	9,1	2	9,5	1	3,2	
discussion	Too much	0	0,0	0	0,0	1	3,2	χ^2 - test is not necessary
	Enough	11	100,0	21	100,0	30	96,8	
	Too little	0	0,0	0	0,0	0	0,0	
demonstration	Too much	8	72,7	16	76,2	28	91,3	$\chi^2 = 2,625 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	3	27,3	5	23,8	3	9,7	
	Too little	0	0,0	0	0,0	0	0,0	
work with the text	Too much	0	0,0	1	4,8	0	0,0	$\chi^2 = 4,874 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	5	45,5	14	66,7	25	80,7	
	Too little	6	54,5	6	28,6	6	19,4	
experimental and lab. work	Too much	0	0,0	0	0,0	2	6,5	$\chi^2 = 7,689 > \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	6	54,5	16	76,2	27	87,1	
	Too little	5	45,5	5	23,8	2	6,5	
field work	Too much	0	0,0	0	0,0	1	3,2	$\chi^2 = 3,229 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	3	27,3	12	57,1	17	54,8	
	Too little	8	72,7	9	42,9	13	41,9	
project work	Too much	0	0,0	0	0,0	0	0,0	$\chi^2 = 0,804 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	5	45,5	10	47,6	18	58,1	
	Too little	6	54,5	11	52,4	13	41,9	

All teachers believe that the explanation method is well represented in all textbook sets. The same results are found for the methods of discussion and experimental and laboratory work. The teachers believe that the method of demonstration is over-represented. For the method of work with the text, opinions are divided (54.5% believes that it is not sufficiently represented, the other two believe that it is enough represented: 66,7%, 80,7%). Opinions about the methods of the field work and project work are divided.)

Statistically significant differences regarding the publishers are evident only in the case of the experimental and laboratory work method. This method is the most represented and this estimates the most teachers who use the textbooks set of the third publisher and at least teachers of the first publisher.

Evaluation of the representation of pupils' certain skills

One of the fundamental objectives set in the Environmental Studies subject curriculum is the development of procedural knowledge in pupils: development of cognitive procedures and thinking strategies, solving problems and collecting data. How much textbook sets contribute to this, according to teachers' assessment, is presented below.

Table 4.

Numbers (f) and percentage composition (f%) of teachers assessing the representation of certain skills in the selected textbook set according to the publisher

skills	answers	Z1		Z2		Z3		result χ^2 - test
		f	f %	f	f %	f	f %	
perception	Too much	0	0,0	1	4,8	0	0,0	$\chi^2 = 2,998 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	9	81,8	17	80,9	30	96,8	
	Too little	2	18,2	3	14,3	1	3,2	
ranking categorising	Too much	0	0,0	0	0,0	0	0,0	$\chi^2 = 3,247 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	8	72,7	18	85,7	29	93,6	
	Too little	3	27,3	3	14,3	2	6,4	
counting measuring weighing	Too much	0	0,0	0	0,0	2	6,5	$\chi^2 = 3,404 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	8	72,7	20	95,2	24	77,4	
	Too little	3	27,3	1	4,8	5	16,1	
comparation	Too much	0	0,0	0	0,0	0	0,0	$\chi^2 = 1,064 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	9	81,8	17	80,9	28	90,3	
	Too little	2	18,2	4	19,1	3	9,7	
to write down	Too much	0	0,0	0	0,0	2	6,5	$\chi^2 = 0,375 > \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	9	81,8	16	76,2	24	77,4	
	Too little	2	18,2	5	23,8	5	16,1	
data collection	Too much	0	0,0	0	0,0	2	6,5	$\chi^2 = 1,714 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	9	81,8	16	76,2	26	83,9	
	Too little	2	18,2	5	23,8	3	9,7	
concluding	Too much	0	0,0	0	0,0	0	0,0	$\chi^2 = 0,985 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	6	54,5	14	66,7	22	71,0	
	Too little	5	45,5	7	33,3	9	29,0	
experiments tests forming	Too much	0	0,0	0	0,0	0	0,0	$\chi^2 = 0,095 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	8	72,7	16	76,2	24	77,4	
	Too little	3	27,3	5	23,8	7	22,6	
hypothesis	Too much	0	0,0	0	0,0	0	0,0	$\chi^2 = 1,496 < \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	5	45,5	11	52,4	20	64,5	
	Too little	6	54,5	10	47,6	11	35,5	
reasearch	Too much	0	0,0	0	0,0	0	0,0	$\chi^2 = 6,122 > \chi^2(a = P = 0,05, g = 2) = 5,991$
	Enough	5	45,5	15	71,4	26	83,9	
	Too little	6	54,5	6	28,6	5	16,1	

According to the teachers' evaluation, there are fewer activities in the textbook sets that require thorough understanding and deeper thinking, but enough of those that require students' lower-level thinking processes.

Regarding the publisher there is a statistically important difference only by the research. The percentage of teachers that use the textbooks set Z3 and estimate that this activity is present enough is higher from the percentage of the teachers that think alike but use the textbook sets Z2 and Z1.

Conclusion

Textbook sets for the Environmental Studies subject are only one of the means through which teachers try to reach educational objectives. The choice of when and how they will be included into the learning process is left to the teacher. There are several textbook sets available for the Environmental Studies subject and teachers can avoid those that do not meet their teaching style or the specific characteristics of his pupils. All of this speaks in favour of the assumption that textbooks cannot really have a decisive impact on the outcomes of curricular changes in the Environmental Studies subject.

This study has shown that the teachers interviewed use textbook sets produced by three publishers only, but in Slovenia, they are known to be the largest ones. We did not study why they chose these textbook sets and the influences on their choices. It would be interesting to know whether the situation is similar to that stated in the evaluation report of research entitled 'Textbook as a factor of success of the curricular reform', in which teachers assessed their influence on choosing textbooks to be proportionally low (Justin, 200).

Our research established that in teachers' opinions, there are differences among the textbook sets regarding the consideration of selected constructivist elements, including the stimulation of pupils' independence, guidance to more active learning forms and methods of work and, mainly, the representation of pupils' skills and abilities. The already mentioned criteria have shown differences among individual textbook sets. With slightly more precisely defined evaluation criteria in the proposed evaluation questionnaire, as suggested by Martin (2001), these differences could perhaps be shown even more.

Therefore one textbook set helps the teachers more than others in the constructivist lessons of the Environmental Studies subject. We assume that the authors of this textbook set paid particular attention to the elements of constructivism because one of them was also the author of the curriculum and was very familiar with the conceptual design of the Environmental Studies subject. The question is what criteria authors follow when writing textbook sets for the Environmental Studies subject, and how they manage to put them into practice. This question is relevant because differently profiled professionals appear among the writers, from teachers to university professors.

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