

Impact of educational philosophy on the quality of teaching and learning: A comparison of two programs

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ABSTRACT This paper presents two educational programs with different philosophies. The research question is whether and how the different philosophies impact pupils' knowledge, approaches to teaching and the development of competencies. A comparison of scholastic achievements of pupils in the two programs shows that standardized testing does not reveal significant differences. Differences do however appear in the teaching methods, and consequently in the achievement of high-quality knowledge and the development of competencies. In both programs, support from factors in the learning environment is of key importance for implementing a teaching philosophy. The impact of these factors is even greater if they are consistently implemented and if they operate in unison as a whole.

Keywords: educational philosophy, teaching, learning, learning environment

Introduction

Societal development demands dynamic young people capable of generating, developing and implementing ideas, responding to changing circumstances and learning from their mistakes. At the same time, the world of educating young people is growing increasingly complex and pulling away from what could be called traditional learning. This point of departure leads to the question of educational philosophy. Educational philosophy represents one of the most important components of every educational system (Dewey 1916; Snauwaert 2012), as it gives meaning to decisions and actions and affects all components of the educational process. From a historical perspective, educational philosophies have always reflected societal, economic and political aspects of society. On the other hand, most educational systems are characterized by a combination of different philosophies, and all philosophies share a wish to improve

the educational process and scholastic achievement, create better, more productive citizens and impact societal development.

Educational philosophy greatly determines a teacher's thinking and behavior (Lloyd Yero 2010; Snauwaert 2012; Biesta 2014a). This in turn affects the convictions which shape his or her professional practices and guide his or her decisions and behavior and interactions with students. A teacher's convictions are linked to the planning of work in education and impact curriculum decisions (Alonzo et al. 2012). However, this should not be interpreted to imply that "modern" philosophies are in and of themselves superior or "traditional" ones are inferior. A "good teacher" usually has at his or her disposal a wide range of methods, approaches and strategies, which he or she uses depending on the given circumstances. Linking this with research findings (Darling-Hammond et al. 2009; Hightower et al. 2011) that show that one of the most important factors of teaching in schools is teaching quality, one may readily conclude that it is not enough to only address what teachers must do, and consideration must also be given to what they actually do and why they do it.

This paper compares two educational programs with two different philosophies and attempts to discern whether and how the programs' predominant philosophies are linked to teaching and the (types of) effects it produces. The two programs discussed are an international elementary school program and the program at a Slovenian elementary school.

At the Slovenian school, which underwent significant modernization during independence processes that took place 20 years ago, a curriculum with prescribed subjects, class hours and content is the norm. It is characterized by a relatively large number of required and elective subjects. Approaches to education are fairly traditional: transmission approaches predominate, and are additionally supported by external testing which serves to enforce the demand that pupils attain a relatively high degree of knowledge. The program is characterized by the weak systemic inclusion of cross-curricular topics and competencies, and fairly simplified quantitative forms of knowledge assessment are still in use: recognizing and calling up "basic" information, memorization, learning the answers to (convergent) questions and the use of information in isolated situations that bear no resemblance to real life. Although a great deal of attention has been paid to these issues in recent years, and schools have begun to develop numerous best practices, annual reports on national standardized tests (2013, 2014) show that pupils achieve worse results on problems that require the use of knowledge on higher taxonomical levels. This trend is particularly noticeable in certain areas of Slovenia (Cankar et al. 2011; Setnikar - Cankar et al. 2015)

The international primary school has been operating in Slovenia since the 1990s. Classes are divided into two programs: The Primary Years program (grades 1 to 5) and the Middle Years program (grades 6 to 8). The international eight-year school is characterized by a balanced and core curriculum, pupil-focused classes and the formative monitoring and assessment of knowledge. The program is based on a predominantly constructivist theory of knowledge, which brings a changed thought paradigm and attitude towards learning to education. Not only high academic achievements and sound knowledge are important, but also deeper approaches to learning (Nicolson & Hannah, 2010). Besides methods through which pupils develop the procedural, critical and creative attainment of new knowledge and skills, complex qualitative forms of knowledge assessment are also present and require pupils to use their knowledge and skills to solve real-life problems and to independently judge how to use their knowledge effectively in new problem situations.

The question posed by the research was whether and how the different philoso-

phies of the educational programs and their implementation affect the teaching methods used and if so, why. The research had the following objectives:

1. To determine whether differences exist in the level of knowledge attained by the pupils of the Slovenian and the international school.
2. To determine whether differences exist in the teaching methods at the Slovenian and the international school.
3. To determine whether differences exist in the extent of and methods for the development of competencies at the Slovenian and the international school.

Methods

For the first objective, a written test was used to assess pupils' knowledge of multiple subjects. The tests, which were prepared in advance on the basis of a comparative analysis of syllabuses, were completed by pupils in grades 2, 5 and 8 at the international school and by pupils in grades 3, 6 and 9 at the Slovenian school. The average achievements (number of points) of pupils of both programs were calculated. Differences in the averages were analyzed using a t-test for independent samples.

For the second objective, the research focused on how and in which components teaching – which is determined to a considerable extent by curriculum philosophy – in the international program differs from teaching in the Slovenian program. To achieve this objective, five hours of classes were recorded at both schools. The recordings encompass different subjects and different age groups. The recorded classes were then evaluated by nine experts with different professional profiles. Together they produced 45 marks for classes at the Slovenian school and 45 marks for classes in the international program. The evaluators used a graduated scale with three values: 1 – No, 2 – Yes, to a small degree and 3 – Yes, to a large degree. They assessed the presence of two teaching methods: teaching as shaping and teaching as personal growth (Vermunt 1993; Šteh 1998; Edwards - Leis 2010). The data were then used to calculate averages. Differences in the averages were analyzed using a t-test for independent samples. Reliability was checked for both analyzed variables. All 90 marks were included in the analysis of the reliability of the variables. Cronbach's alpha for the "shaping" variable, which consisted of seven indicators, was equal to 0.889; for the "personal growth" variable, which consisted of 10 indicators, it was equal to 0.924.

For the third objective, the types of competency-development encouragement the pupils received were assessed. This was done by selecting one longer thematic unit from social sciences on the class level (grades 3 and 4) and from social sciences and science on the subject level (grades 6 and 7). The work of the pupils of both programs was also checked. Advisers at the National Education Institute of the Republic of Slovenia had group talks with pupils (and when needed with teachers) in the selected departments. They looked at pupils' notes and their work to systematically assess the inclusion of different didactic work types prepared by the students in the framework of the selected thematic unit. They recorded their observations in structured forms. While examining the work, the experts also gathered information about the types of work, where the products were prepared and help from adults. They examined whether the work was interesting and had an affect on the knowledge and skills attained. Information was collected for 38 products in the Slovenian program and 40 products in the international program. Frequencies were calculated in the analytical processes. Differences in the averages were analyzed using a chi-square test.

Results

For the first objective, a comparison of the knowledge of pupils in the two programs was prepared. The results (Table 1) show that pupils in the international program achieved a larger average number of points in mathematics, social studies and science in the middle age group (grade 5 at the international school and grade 6 at the Slovenian school), and in social studies and techniques and technology in the upper age group (grade 8 at the international school and grade 9 at the Slovenian school). Their Slovenian peers were better in mathematics and environmental studies in the lower age group (grade 2 at the international school and grade 3 at the Slovenian school) and in mathematics and science in the upper age group.

Table 1: Knowledge assessment results by program

Subjects by age group (possible number of points)	International program (n)	Slovenian program (n)	t (sig.)
Mathematics and environment awareness - Lower age group (42)	32.00 (6)	34.18 (17)	-1.068 (0.297)
Mathematics - Middle age group (44)	29.71 (7)	23.64 (22)	-1.549 (0.133)
Mathematics - Upper age group (41)	22.42 (12)	26.19 (21)	-1.437 (0.161)
Society - Middle age group (30)	22.75 (8)	22.13 (24)	0.351 (0.728)
Social sciences - Upper age group (24)	13.23 (13)	12.00 (22)	0.983 (0.333)
Science - Middle age group (28)	20.56 (8)	18.50 (23)	1.204 (0.238)
Science - Upper age group (37)	15.85 (13)	17.83 (20)	-1.054 (0.300)
Techniques and technology - Upper age group (18)	10.38 (13)	8.83 (21)	1.782 (0.084)

Despite differences in the number of points achieved in individual subjects, the differences between the averages are not statistically significant. This is primarily the result of the small samples, that is, of the small number of units compared. Statistically significant differences did however appear in the techniques and technology unit for the upper age group. Although the differences in the average number of points achieved were not statistically significant, some tasks in individual thematic units did reveal a somewhat greater deviation.

For the second objective, a comparative analysis was prepared for both teaching methods: teaching as shaping and teaching as personal growth. The results (Table 2) show that in general, teaching as personal growth is more noticeably present in the international program, while teaching as shaping is more present in the Slovenian program. Teaching as personal growth was present to a lesser degree in the Slovenian program, as was teaching as shaping in the international program.

Table 2: Teaching method by program

<i>Period: subject</i>	<i>Shaping</i>	<i>Personal growth</i>				
	<i>International pro- gram (n)</i>	<i>Slovenian program (n)</i>	<i>t (sig.)</i>	<i>Inter- national pro- gram (n)</i>	<i>Slo- venia n pro- gram (n)</i>	<i>t (sig.)</i>
Lower age group: Mathe- matics	1.86 (9)	2,38 (9)	- 2.889 (0,01 1)	2.62 (9)	1.80 (9)	3.855 (0.00 1)
Middle age group: Mathe- matics	1.51 (9)	2,40 (9)	- 5.452 (0,00 0)	2.68 (9)	2.29 (9)	1.992 (0.06 4)
Middle age group: Science	1.24 (9)	2,63 (9)	- 11.70 7 (0,00 0)	2.91 (9)	1.81 (9)	7.678 (0.00 0)
Upper age group: Mathe- matics	2.63 (9)	2,78 (9)	- 1.150 (0,26 7)	1.99 (9)	1.91 (9)	0.344 (0.73 5)
Upper age group: Science	1.90 (9)	2.17 (9)	- 1.231 (0,23 6)	2.70 (9)	1.76 (9)	4.987 (0.00 0)
Total	1.83 (45)	2.47 (45)	- 6.134 (0.00 0)	2.58 (45)	1.91 (45)	6.663 (0.00 0)

Teaching as shaping was not noticeably present in science in the upper age group; for mathematics in the middle age group, both teaching as shaping and teaching as personal growth were present. Teaching as personal growth was the predominant method in four cases in the international program, and teaching as shaping was only noticeably present in mathematics in the upper age group. Teaching in mathematics in the upper age group therefore bears a greater resemblance to the Slovenian program than to the

other classes in the international program.

A comparison of the two methods of teaching with the results obtained by assessing the knowledge of pupils in both programs shows that knowledge assessed through testing can be more efficiently obtained through teaching as shaping. This method is more present in the Slovenian program (Tables 1 and 2). Regardless, the correlation between results achieved and teaching as shaping (compared to teaching as personal growth) was shown to be rather weak. Also, the results obtained in science and mathematics in the second age group do not accord with this finding. Here pupils at the international program did better.

Analysis of the third objective revealed that pupils in both programs prepared different products and used different approaches in all the selected thematic units. At the same time, a comparative analysis of thematic units reveals the following:

- The people in society and people in the space (grades 3 and 4) thematic units were similar in both programs. They both discuss man in time and space. In both programs, emphasis was on work with materials, research, participation and reflecting on work done. Classes in the Slovenian program include a variety of activities and focus on diverse learning content. Classes in the international program stress immersion and understanding of the framework learning content through the use of systematic activities. Emphasis is on learning the verbal and non-verbal transmission of information and gaining awareness of the importance of this skill.
- The rocks and soil and cell thematic units, which pupils in both programs covered in grade 6, were comparable in terms of content. However, approaches to pupil activities differed. Although a significant difference could not be noted in knowledge of content attained, the development of competencies is envisioned in a more holistic manner in the international program. Classes are led in such a way that pupils deepen their understanding of the covered content and systematically develop communication and research skills.
- Pupils in the Slovenian program covered the ancient cultures thematic unit in history and geography (grade 7), while pupils in the international program covered it in social sciences (grade 6). The pupils in both programs prepared a variety of products, but classes in the international program were more diverse; pupils showed greater initiative and cooperated more, and the teacher used the highlighted research approaches to encourage independent work and creativity. Classes were systematic in both programs, but systematics are based on systematic content in the Slovenian program and on the systematic development of skills in the international program. Talks with pupils reveal that the teachers participate and coordinate work in both programs.

Pupils' responses differ with statistical significance in assessments of how interesting they find the preparation of products and in their assessment of how the production process affects their knowledge and skills. All pupils in the international program found the preparation of materials to be more interesting than did their peers at the Slovenian program (Table 3).

Table 3: How interesting were final products in the two programs

Evaluation of how interesting final products were	Slovenian program	International program	Total
Creating the product was not interesting to any pupils	0 (0.0%)	0 (0.0%)	0 (0.0%)
Creating the product was interesting to some pupils	18 (47.4%)	10 (25.0%)	28 (35.9%)
Creating the product was interesting to all pupils	20 (52.6%)	30 (75.0%)	50 (64.1%)
Total	38 (100.0%)	40 (100.0%)	78 (100.0%)
χ^2 (sig.)	4,237 (0.040)		

A key difference was also expressed in response to the question of how preparing products affects the knowledge attained and skills developed by pupils (Table 4).

Table 4: Assessment of impact on knowledge and skills by program

Assessment of impact on knowledge and skills	Slovenian program	International program	Total
Most pupils felt they did not learn anything	0 (0.0%)	0 (0.0%)	0 (0.0%)
Most pupils felt they attained knowledge of the topic covered	12 (31.6%)	3 (7.5%)	15 (19.2%)
Most pupils felt that they attained skills through which they can use their knowledge	0 (0.0%)	6 (15.0%)	6 (7.7%)
Most pupils felt that they attained both knowledge on the covered topic and skills through which they can use the knowledge	26 (68.4%)	31 (77.5%)	57 (73.1%)
Total	38 (100.0%)	40 (100.0%)	78 (100.0%)
χ^2 (sig.)	11.795 (0.003)		

A third of the pupils at the Slovenian school felt that they attained knowledge on the subject matter when preparing their products, while nearly 80% of pupils in the international program claimed that they attained both knowledge on the subject and skills linked to the use of that knowledge.

Discussion

Differences in the average number of points achieved on knowledge assessments were not statistically significant. There are numerous reasons for this. Firstly, the samples, that is, the number of units compared, were small. The wide range of pupil ages and, in some cases, the amount of time devoted to content are additional factors. But the key is that attained knowledge was measured using classic tests of knowledge similar to those completed by pupils at the Slovenian school in the framework of the Common External Assessment of Knowledge. Nonetheless, in all subjects in both programs somewhat greater deviation could be noted between individual problems or thematic units. Differences appear in students' knowledge and understanding, analysis and mastery of knowledge processes, and also in students' knowledge and understanding. Research conducted by Tan and Bibby (2011) revealed a similar picture. The findings showed that pupils who attended a program at an international school globally achieved better results than pupils at other schools in four of the observed fields: math literacy, reading, narrative writing and expository writing.

Knowledge is therefore not some objective, measurable substance mapped out in syllabuses and transferred from teacher to pupil, but rather the result of personal and social constructs, whereby the quality of the process is exceptionally important for the quality of the result (Patrikainen 1999; Marentič Požarnik 2011). The advantages of such teaching can be discovered only if assessments encompass the use of knowledge and the quality of thinking (Darling-Hammond 2010). These were not measured by the tests. A sizeable share of the reasons for this situation must therefore be sought in the link between teaching and learning and pupils' achievements.

This is confirmed by findings for the second objective. A comparative analysis of teaching in both programs shows that in general, teaching as personal growth is more noticeably present in the international program, while teaching as shaping is more present in the Slovenian program. The first method emphasizes encouraging and helping pupils in their personal growth. The focus is on the kind of personalities the pupils develop will into. The second teaching method focuses on shaping the pupil using a specific model. Teachers' approaches are focused particularly on transferring knowledge, whereby the use of specific methodological processes is emphasized. This distinction is not found in mathematics, where teaching in both programs is based on a strictly mathematical, rule-based context.

It is clear that teachers who teach in the two programs maintain different terminologies related to teaching. Although the cognitive-constructive model of teaching and learning can be counted among generally accepted "espoused theories", the teachers' own definitions reveal paradigmatic differences in definitions of the nature of learning, the role of the teacher and the use of different learning methods. At the international school, the learning environment identifies pupils as participants and encourages their active participation to a greater extent; the development and understanding of their own thinking is stressed. Teachers in the Slovenian program still define and implement teaching as the transfer of finalized knowledge (Marentič - Požarnik 2011). They clearly have yet to recognize that their task is no longer the detailed fulfillment of the demands of the official curriculum, but enabling pupils to express their given talents.

Although the manifold contexts in which teaching and learning take place are difficult to compare, the role of the social, cultural and educational context in which teaching and learning unfold must nonetheless be emphasized. If a change can occur in teaching approaches and advances are made only within school (Darling-Hammond

2010), a question arises: what, besides a mastery of teaching terminology, guides teachers in both programs to thoroughly enforce the program guidelines? We feel the answer lies in a learning environment which brings together the different forms and activities occurring within the context (Instance and Dumont 2010). At the international school, a synergy is present between the following interlinked factors:

- the systematic education of teachers abroad;

The IB (International Baccalaureate) organizes workshops, conferences and webinars which are regularly attended by teachers (each teacher participates in at least one form of continued education at least once every two years). At each external evaluation of the school, school leadership submits a list of educational programs completed by each teacher.

- open curriculum that grants teachers greater autonomy but also demands greater responsibility and expert coordination in implementation;

Curricula at the international school are competently designed and based around processes. They list only general learning objectives and grading criteria, while the teacher himself or herself chooses subjects and content based on the interests of his or her students, current topics and professional discretion.

- regular bi-monthly training for all teachers at the school linked to concrete lessons;

Intra-school training merits special mention. Once every two months, the entire teaching staff at the international school meets up to discuss specific, common subjects (the man in the environment unit, for example). The goal is for teachers of different subjects to get together and discuss how they will address a thematic unit. It appears that such a team-based approach, which surpasses a narrow, subject-based, separate treatment of content, enables greater penetration in terms of teaching and learning quality and facilitates the ongoing implementation of the program's philosophy. This of course presupposes a somewhat more open curriculum that demands the preparation of a "school-wide" curriculum.

- weekly visitation by the principal and talks with teachers on teaching quality;

The principal at the international school regularly conducts visitations together with a coordinator. The aim is to help teachers achieve success in teaching. The visitations are not announced in advance and only last for several minutes, and the teachers are familiarized with the areas the principal and coordinator will focus on in a given period (learning through research, for example). During the visitation, one pupil receives a questionnaire with questions about learning and teaching. The visit is followed by a talk about positives and about areas where the teacher could improve.

- regular evaluations conducted by external auditors every three years;

Teachers' work is regularly monitored and evaluated by expert teams in the framework of the IB. During the evaluation, evaluators spend four days at the school and conduct talks with teachers, parents, pupils and school administrators and observe classes; prior to the evaluation, schools send a sample of pupils' work to the evaluators, who check and evaluate whether teachers are following the official guidelines of the program. The expert team then prepares an extensive report, including recommendations for improving work. These conditions ensure that the evaluations are correctly understood and accepted and conducted on equal terms.

The Slovenian school is the opposite of this. It is characterized by overburdened syllabuses (Plut- Pregelj 2004; Marentič - Požarnik 2011), teaching mostly takes place within subject guidelines, group discussions of thematic units almost never take place, etc. External knowledge assessments place additional pressure on teachers to thoroughly meet the syllabus requirements (Marentič Požarnik 2011). There is little time for anything else. The system for providing feedback on the attained knowledge of pupils through the Common External Assessment of Knowledge is well developed and applied, but this system alone is insufficient. The principals at schools, though pedagogic leaders, are drowning in administrative work, while self-evaluation processes at schools are in their infancy and external evaluation is almost entirely lacking.

The interlinking and holistic impact of all elements of the learning environment at the international school clearly produces better results and creates greater added value than the individual and sound, albeit less integrated, learning environment factors at the Slovenian school. Educational philosophy sets a direction, while an effective and holistically interconnected learning environment is responsible for activating and supporting teachers in the consistent implementation of that philosophy. This also means that the formal design of new structures meant to facilitate change in school practices alone is not enough. These new structures must also be implemented (Instance and Dumont 2010), and their implementation must be evaluated. This is the aspect of consistency, which is addressed differently by the two programs. Here one encounters the problem of organization, which has the ability to reinforce itself and to block change. Serious attention must therefore be paid to organization at a school when developing and upgrading school practices.

These findings are confirmed by other slightly older yet nonetheless relevant studies. Authors (Marentič Požarnik 2008) have claimed that the school space in Slovenia is characterized by specific forces which maintain traditional methods of work and classroom attitudes. One such force is teachers' belief that the established method of work, which is based on transferring the prescribed content without establishing links to pupils' experiences, interests and prior knowledge, is more tested and safe. Deeper changes to classes are tedious, especially if a teacher does not have the broader support of his or her colleagues, school leadership and others and if they have the feeling that they are alone in going against the current. It is therefore understandable that teachers persist with tested and safe teaching methods which are limited to learning information and rules without a deeper understanding (Marentič Požarnik 2011).

It is not surprising that a comparison of the two teaching methods with the results obtained by assessing pupils' knowledge in both programs shows that knowledge assessed through testing can be more efficiently obtained through teaching as shaping. This method is more present in the Slovenian program. This leads to the following questions: What is quality knowledge and how can it be developed? How can attention be drawn to the awkward situation created by knowledge assessments through standardized testing? At the same time, it shows that the teaching method in place at the international program surpasses the attainment of knowledge in the traditional manner and contributes to the development of pupils' competencies to a greater degree. Not least of all, it also affects the knowledge of pupils at the international school, as their achievements in mathematics and reading, as assessed through the International School's Assessment (ISA), are characteristically higher than the achievements of pupils at other schools in the Programme for International Student Assessment (PISA) (Tan and Bibby 2011).

It is clear that compared to teachers at the Slovenian school, teachers at the international program are more aware that our lives are linked to the world and the world is

linked to our lives. They associate teaching with pupils' reality and train pupils to establish logical links between the fragmentary bits of knowledge provided by school courses. The Slovenian school still has problems in this regard. Besides a failure to attain knowledge on higher taxonomical levels (Annual Reports 2012, 2013, 2014), PISE data also shows that the average achievement of Slovenian 15-year-olds in solving problem-oriented exercises is below the OECD average (Štraus 2014). One example of this would be critical thinking abilities, which are highly beneficial to the younger generation and which are developed through quality dialogue in which knowledge-based arguments are weighed against one another and value judgments are presented. How many dialogues of this kind take place in class, how good are they, and are teachers capable of leading them? Do they even find time for them? This cannot be assessed with testing. It is not simply a matter of abilities and inclinations that pave the way to better scores on tests; dialogues of this kind are important in and of themselves. Of course, they can also help to achieve good results on tests... It is easier to resist bureaucratic pressures at a school that has an awareness of what quality lessons and quality knowledge look like.

It is normal for the different definitions and approaches of teachers to find expression in pupils. Although pupils in the two programs prepare a variety of products and use different approaches, an analysis of observations of the programs shows that the development of pupils' competencies is envisioned more holistically at the international school. Keller (2014) claims that school must be a place where the hand and heart are just as important as the brain. It is out of an equilibrium of will, compassion and thought that young people develop a desire to advance from their own inner needs. Of course, this unfolds on a base of available possibilities and opportunities. It is therefore not surprising that classes associated with the creation of a variety of products motivated the learners at the international program to a greater degree than their Slovenian peers. They found work to be more interesting and at the same time clearly expressed an awareness of the knowledge and skills attained in light of their usefulness.

Conclusion

Although the study was correctly conducted in terms of its methodology, it does have certain limitations. Data was collected at only one IB program in Slovenia (it is also the only such program in the country), which is conducted at an elementary school alongside the Slovenian elementary-school program. The findings therefore cannot be generalized. The differences noted are nonetheless noteworthy and bring up several questions.

Results achieved on knowledge assessments contribute little to discussions on the quality of education (Biesta 2014; 2015, Birrell 2014). One cannot claim that a school is good or not on the basis of test results. Achievements on tests only indicate whether pupils have a mastery of the types of knowledge assessed with the tests. This is but one key ingredient of a "good school", and the complexity inherent in that term means that test results alone are not sufficient for a competent analysis.

Teaching presents a similar dilemma. The findings tell us that differences in teaching and learning do exist between the two programs, and that teaching is handled differently in the international program. This is particularly interesting because both programs, that is, both schools, are housed in the same building. The teachers in the international program are Slovenes; they completed their education in Slovenia, although they did attend comprehensive training abroad, in accordance with the demands of the

international program. Differences in teaching and learning are all the more interesting because the teachers work together and exchange experiences on a daily basis.

The analysis and comparison of learning environment factors do however call our attention to the fact that these factors are more effective when coordinated. They place soft pressure on the school to make sense of the decisions and actions of teachers and influence the school to more consistently implement its philosophy. Further research should therefore be directed towards the question of whether and how these factors affect the attainment of quality knowledge. It is a question of the impact of individual learning environment factors and of their linkages, synergies and consistent application.

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