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## *Editorial*

Journal of Teacher Education for Sustainability (JTEFS) welcomes the authors and Editorial Board on the publication of eighth issue of JTET/JTEFS.

Editorial Board for this issue of journal includes the representatives from 15 countries. The main core of dedicated members of Editorial Board from 2002 each year is complemented with several new members of Editorial Board – experts in the field of teacher education and/or sustainability.

The 8<sup>th</sup> volume of JTEFS contains the research articles originated in Estonia, Finland, and Latvia. All articles for this volume contain the more or less pronounced theoretical, practical or complementary approach to the reorientation of teacher education or professional practice of teaching toward the sustainability.

The volume 8<sup>th</sup> of JTEFS starts with the investigation into Estonia's educators' representations of organisational culture, based on the typologies of Harrison and Handy, and into the educators' cognitive orientation on the basis of Rotter's internality/externality scale. The author concludes that the organisational culture in Estonia's schools is not the one that would best support the sustainable development of teachers and suggests reconsidering the role of school leadership and activities to change the person's locus of control in order to ensure the sustainable development of teachers. Next article, also originated in Estonia, describes the self-assessment of teachers' professional skills according to the *Teachers' 5<sup>th</sup> Professional Standard* (2005). The article by the authors from the Daugavpils University depicts the teachers' views about the development of innovative processes in schools of Latvia distinguishing the groups of teachers pertaining to the student/learning-centred or content-centred paradigm. Further, the researcher from Estonia searches for the answer on tough question: Are teachers tired of responsibilities? As the study shows, the answer can not be unanimous, since there is a contradiction between the teachers' strong feeling of mission and responsibility and the diminishing possibilities of implementing these priorities in their real work. The next article of this volume analyses the different aspects of upbringing and development concerned with preparing pre-school children for school. The focus is on justifying child development within the pre-school educational environment with elements of sustainability in order to better prepare students for school. The article "Social Aspects of Education for Sustainable Development in Primary School in Estonia" comprehends a comparative content analysis of UNECE strategy of ESD and the chapters of the text of the *Estonian National Curriculum* valid from 2002 focusing on primary education. The current volume of journal concludes with an innovative approach to theoretical and empirical analysis of the agentive role of children's views in sustainable education emerged from the research conducted in Finland.

The reconstructed website of Institute of Sustainable Education [www.ise-lv.eu](http://www.ise-lv.eu) soon will be available for a further acquaintance with *Journal of Teacher Education for Sustainability* and, as usual, it will inform about the annual JTEFS conferences "Sustainable Development. Culture. Education". The Institute of Sustainable Development invites you to follow the information about the next Conference (<http://bbcc2008.anadolu.edu.tr>) and to submit articles for the next volumes of JTEFS. The terms for article submission are January 15 for the spring volume and May 15 for the autumn volume of JTEFS.

Editor-in-chief: Anita Pipere

## CHANGES IN ORGANISATIONAL CULTURE IN SCHOOLS AND READINESS OF TEACHERS FOR THOSE CHANGES

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### Abstract

*An investigation into Estonia's educators' representations of organisational culture, based on the typologies of R. Harrison and C. Handy, and into the educators' cognitive orientation on the basis of J. Rotter's internality/externality scale was carried out. The aim was to determine, whether the organisational culture in Estonia's schools supports the sustainable development of teachers. The study revealed that amongst Estonia's teachers the individuality-oriented individualistic culture dominated, and that almost half of the teachers had an external locus of control. The conclusion was drawn that the culture of learning organisation was not characteristic of Estonia's schools, while that type of culture would best support the professional and sustainable development of teachers.*

*Key words: sustainable development; organisational culture; learning organisation; locus of control; Estonia's schools.*

### Introduction: Organisational culture and sustainable development of teachers

In recent decades professionalism of teachers has become a central issue both in education policy and in school development. Nowadays, a professional teacher can be characterised as a flexible, reflective practitioner, a team-worker, a lifelong learner, a person always striving to update his knowledge and skill base, one who is market-oriented, managerial, if not entrepreneurial (Dent & Whitehead, 2003). A professional teacher usually has an important role in society; he/she has autonomy in making decisions, high responsibility, a long study period for getting the qualification, specific knowledge and skills, code of ethics and certain standards to follow (Schön, 1983; Corrigan & Habermas, 1990; Luukkainen, 2000; Eraurt, 2002). In relation to the formation of professionalism in teacher, two main questions arise. First, does the organisational culture in schools support the professional and sustainable development of teachers? If it presently does not, are teachers ready for changes in the organisational culture and what are the prerequisites for those changes?

Several authors have concluded that if a school wants to ensure its ability to develop growth in professional abilities of its personnel, it should become a learning organisation (Fullan, 1993; Leithwood et al., 1998; Nikkanen, 2001; Quicke, 2000; Senge

et al., 2000; Silins et al., 2002; Smylie et al., 1996; Wallace et al., 1997). The learning organisation is able to keep learning and redesigning itself (Marsick & Watkins, 1999). The concept of learning organisation also includes a system of methods and means for redesigning an organisation into learning organisation. Implementation of the learning organisation concept allows creating an environment, in which people act with enthusiasm and energy; thus, it supports the professional and sustainable development of teachers and of the school as a whole.

According to a number of authors (Schein, 1990; Senge, 1990; Senge et al., 1994; Senge et al., 2000; Hargreaves, 1995; Hofstede et al., 1990; Mintzberg, 1983; Peters & Waterman, 1982), values, beliefs, attitudes, the ways of thinking, customs, and rituals are the main components of organisational culture represented by members of organisation. Therefore it is possible to study the whole area by studying their representations (Danto, 1989; Moscovici, 1984, 1998, 2000; Wagner et al., 1996), and thus the present study focuses on teachers' representations of the organisational culture in their schools.

The representations were studied within the framework of typology of organisational culture created by Harrison (1972, 1992, 1993) and developed by other authors (Handy, 1993, 1995; Handy & Aitken, 1990; Graves, 1986). Four types of organisational culture have been defined: power-oriented, role-oriented, task-oriented, and individuality-oriented cultures. The power-oriented culture is characterised by a high level of centralisation and a low level of formalisation. The role-oriented culture has a high level both of formalisation and centralisation. The task-oriented culture has a high level of formalisation and a low level of centralisation. In the individuality-oriented culture, the levels of both formalisation and centralisation are low. Analysis of suitability of these cultures for a culture of learning organisation revealed that the task-oriented culture suited the learning organisation best. Thus, task-oriented culture is the one, which best guarantees the sustainable development of teachers. The goal of this study was to find out how common it is for Estonian schools to have task-oriented culture, i.e. the culture type, which best suits for supporting the professional development of teachers. With the methodology developed by Harrison (1992; 1993), the organisational culture both in private and public sector organisations has been studied in Estonia since 2002 (Haage, 2002; Kütt, 2002; Roots, 2003). The studies show that both in the private and public sector either power- or role-oriented culture prevails, while employees would prefer the task- or result-oriented culture. Maaaja Vadi (2000) has studied the orientation of Estonia's organisations to tasks and relations with the aid of a questionnaire about organisational culture and analysed the results by her two-dimensional scale; she has found that Estonia's organisations may have difficulties with teamwork and other types of cooperation. From these studies it can be concluded that Estonia's organisations most likely have not developed yet into learning organisations. As Estonia's schools are part of the same cultural environment, it can be supposed that neither have schools developed into learning organisations yet.

The behaviour of people in an organisation is closely related to their way of thinking and that, in turn, determines their perception of the world. The application of Rotter's theory of cognitive orientation (Rotter, 1954, 1982, 1990) based on the social-cognitive paradigm provided an additional insight into the issue. Depending on whether an individual perceives that his life is mostly managed by his inner self or by external circumstances, we can distinguish between the people with the internal locus of control and the external one. People with the internal locus of control are more apt to take

initiative and more open to change, they are better at learning, more willing to contribute to the process of decision making and co-operation, more active in directing their own lives (Crooker et al., 2002). People with the internal locus of control tend to prefer the participative style of management, they are more motivated, also as learners, and they have higher expectations for achievement (Mitchell et al., 1975; Spector, 1982; Gul et al., 1994; Burns et al., 1999). In view of this, it is fair to argue that the primary goal of a learning organisation is to create the organisational culture whereby people want to take responsibility for the development of their organisation as well as of themselves, and use it as a means, which ensures their continuous learning and ability to reshape themselves, which creates the necessary conditions for their sustainable development. This also yields information about the question, are teachers ready for changes in the organisational culture and how much responsibility they are ready to take in the process of changes.

## **Method**

The study consisted of two independent parts; in each part different groups of respondents were involved. The first part investigated how teachers, deputy heads, and heads of school perceived the organisational culture; their representations were analysed within the framework of the four types of organisational culture: the power-oriented, role-oriented, task-oriented, and person-oriented culture. The study was carried out by means of the *Questionnaire on Organisational Orientation* – a four-dimensional questionnaire based on the organisation typology and devised by Harrison (1972), Handy (1993, 1995), and Handy and Aitken (1990). In total, 744 respondents took part in the study, including teachers (N=604), heads of school (N=72), and deputy heads (N=68).

In the second part of the study, *The Locus of Control Questionnaire* compiled by Rotter (1982: 185-188) was used. In total, 1187 respondents took part in the study, including teachers (N=1108), deputy heads (N=46), and heads of schools (N=33).

The questioning in schools with the instruction in the Estonian language was carried out in 1999-2004.

## **Results**

The first study revealed that in the representations of teachers the person-oriented organisational culture prevailed (33.9%); it was followed by the task-oriented (25.2%) and the power-oriented culture (24.7%). The role-oriented organisational culture was found to be the least common (16.2%).

Thus, one hardly can say that the culture of learning organisation is represented to any significant extent in Estonian schools. It follows from the results that the majority of the teachers who participated in the study did not perceive the organisational culture in schools as task-oriented; rather, they perceived it as person-oriented. As teachers perceive that the prevalent organisational culture in schools is person-oriented, the following general observation can be made on the basis of the principles of that culture. The majority of teachers perceive that the organisation takes account of their personal wishes and needs, that they are free in organising their own work. The teachers perceive themselves as professionals and individuals who are served by the organisation, rather

than *vice versa*; they do not assign the highest priority to attaining organisation's goals. Teachers are more inclined to be individualistic than seekers of co-operation. The main obstacle for the development of task-oriented culture, characteristic of a learning organisation, is apparently the individualism of teachers; such individualism facilitates isolation rather than co-operation. Harrison (1993) analyses the problems which are difficult to solve in the person-oriented culture. The person-oriented culture, prevalent in most Estonia's schools, is not strongly focused on achieving results. In addition, it is not able to efficiently solve conflicts. The process of decision-making is weak, strivings of people differ widely and have no single aim. This culture does not motivate people to get results and there is an inclination to prioritize the person's needs over the organisation's needs. These drawbacks may constitute a serious obstacle to the sustainable development of teachers. The main issue is how to boost co-operation between teachers who think of themselves as professionals and experts in their respective fields, and how to make them aware of their development needs.

The second part of the study revealed that nearly half of the responding teachers (47%) perceived their locus of control to be external, rather than internal. Thus, only half of teachers have internal locus of control, and it can be expected that quite many teachers place the causes of their success or misfortune beyond their sphere of influence; this should be taken into account in the management of the change process. There is a gap between the actual readiness of teachers to assume responsibility for change and the readiness to do so that is inherent in a learning organisation; however, this readiness is essential for ensuring the sustainable development of teachers. Development of a learning organisation presupposes a fundamental change in both the individual thinking and the collective thinking. The key actor in the learning organisation is person. If people will assume an active role, all the organisational and technical difficulties could be surmounted. It is easier to achieve the learning organisation with persons whose locus of control is internal, because they are more active, they have more initiative, assume responsibility more easily and believe more in their capabilities than those who perceive their locus of control to be external.

Figure 2 shows that the power-oriented organisational culture is more common among the teachers than among the deputy heads and heads of school. The power-oriented organisational culture presupposes that in such an organisation there is somebody who makes decisions, while other members of the organisation implement the decisions (Handy, 1995). Thus, the responsibility for the quality of decisions and their consequences rests more with the decision-maker than with those who implement the decisions. For any failure there will be the excuse that apparently the decision was bad. Thus, a reason why the organisational culture is perceived as power-oriented may be the wish to avoid any responsibility for decision-making. This is further supported by the result that about half of respondents, upon filling in the questionnaire designed to determine the degree of internality/externality, chose the answers that indicated that they perceived their locus of control to be external. People with an external locus of control tend to see the causes of their failures in other people (Rotter, 1954, 1982, 1990).

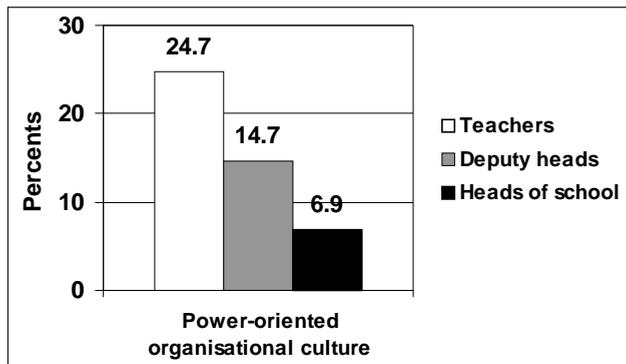


Figure 2. Representations of power-oriented organisational culture by teachers, deputy heads, and heads of school

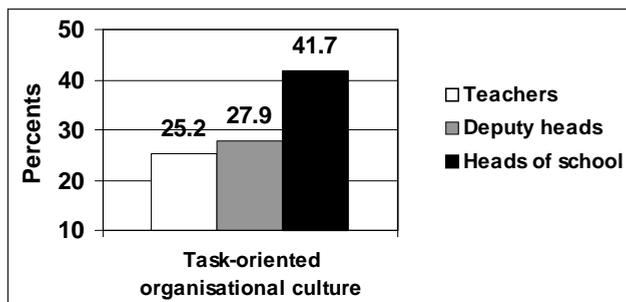


Figure 3. Representations of task-oriented organisational culture by teachers, deputy heads, and heads of school

Sustainable development of teachers and of the school as a whole implies continuing changes and readiness of organisation members for those changes. From the comparison of the results of these studies the conclusion could be drawn that the readiness for changes was greatest with heads of school, then with deputy heads and it was smallest with teachers. Heads of school and deputy heads, more than teachers, were inclined to perceive the organisational culture as task-oriented (Figure 3), which is the most suitable organisational culture on flexible management of the process of changes (Handy, 1995). Heads of school and deputy heads perceived more often than teachers that their locus of control was internal (Table 1), thus, they had more initiative and were more ready for changes (Crooker et al., 2002).

Table 1. Percentage of persons with the external locus of control in various categories of respondents

Categories of respondents	Externality	
	M	SD
Teachers	10.77	4.03
Deputy heads	9.43	3.95
Heads of school	8.06	3.67

Harrison argues that it is difficult to change the prevalent culture; an easier and more productive way would be to strengthen it, for example, in the case of power-oriented and role-oriented culture. According to him, however, there hardly is any sense in strengthening a person-oriented culture; it would be better to complement it with positive aspects of the result-oriented (task-oriented) culture (Harrison, 1993). Handy (1995) also argues that, in general, it is good first to focus on the individual needs of the people and then to try to relate these with the task-oriented culture. The main strengths of the result- (or task-) oriented culture counterbalance the weaknesses of the person-oriented culture. Result-oriented culture strives for achieving unanimity with respect to goals, as then there is less need for controlling people; the level of motivation of people is high, their abilities are most efficiently used; members of such an organisation have a high self-esteem, people are ready to quickly learn and solve problems and accommodate themselves to changes (Handy, 1995).

Thus, for complementing the person-oriented culture with the positive aspects of the task-oriented culture we have to change the culture, rather than to strengthen it. This is a difficult task, as it is difficult to change the person-oriented culture. At the same time, combining these two cultures with the aim of modifying the existing culture towards the task-oriented one may yield good results (Harrison, 1993). Person-oriented culture is characterised by the focus on needs and relations of people, while in the task-oriented culture the focus is on teamwork and results, which provides a framework directing the activities of every member of such an organisation. A combination of these two cultures allows the schools to strike a good balance between centralisation and decentralisation by creating a situation through the setting of common aims, which regulates the activities of the employees; this reduces the need for external control and direction. In Estonia's schools, there are preconditions for such culture changes, as the task-oriented culture has the second important position in the representations of teachers.

## Conclusion

From theoretical research the conclusion has been drawn that learning organisation provides the best conditions for the development of the members of organisation. The present study revealed that task-oriented culture, which is characteristic of learning organisation, is not the prevailing culture in Estonia's schools; thus, the organisational culture in Estonia's schools is not the one that would best support the sustainable development of teachers. The study revealed some unfavourable factors which hinder the change of culture. The main unfavourable factor is the predominance of individualistic person-oriented organisational culture, which leads to such kind of self-actualisation where personal aims, rather than those of the organisation are pursued. Another unfavourable factor is the great share of teachers who have an external locus of control.

In order to create preconditions for sustainable development of teachers in Estonia's schools it is essential that heads and deputy heads of school would well understand the basic ideas of the learning organisation concept and learn the methods and means, which allow them to reorganise their schools into learning organisations. Senge (1990) underlines that the role of leaders is extremely important, as they themselves must serve as models in implementing cooperation-based working methods. A central place in this process belongs to developing of visions, which could be recognised by

teachers as their own ones (Wallace, 2003). Both Senge (1990) and Wallace (2003) consider that ensuring efficient communication in an organisation is a vital task. It should be understood, however, that leaders must always keep this in mind and make continuing efforts for ensuring this; otherwise it can be expected that the dominance of the person-oriented organisational culture would drive teachers into isolation. For example, solutions to difficult pedagogical problems should be sought in small task groups as a rule. An important task of leaders is to provide teachers with the time resources and develop their cooperation skills, which are needed for such work.

Another important task in ensuring the sustainable development of Estonia's teachers proceeds from the circumstance that person's locus of control in the internality/externality scale may change under the impact of certain events and experience (Rotter, 1954); it follows from this that more work is to be done for developing the internal locus of control in teachers. For achieving that, work methods should be applied, which contribute to strengthening teachers' control over their work results. For example, in assessing work results in schools, various self-assessment and self-analysis methods should be systematically used: teachers should compile summaries of school year's work on the basis of self-analysis of their individual and group task efforts and discuss these summaries with their direct supervisor; in the case of unsatisfactory pedagogical results, the work of the teacher should be analysed and plans for improving the situation should be made, etc. Developing of the internal locus of control greatly depends on the teacher's ability to lead the educational process. It is very important to know how to establish goals, the achievement of which could be measured, how to plan one's activities and how to develop an efficient cooperation with partners. On the basis of the present study it can be said that focussing of leaders on the aforementioned tasks would greatly contribute to ensuring the sustainable development of teachers and schools in Estonia.

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## TEACHERS' SELF-ASSESSMENT OF THEIR PROFESSIONAL SKILLS ACCORDING TO THE TEACHERS' PROFESSIONAL STANDARD

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### Abstract

*The expectations of teachers' role image have altered due to the quick changes in Estonian post-socialist society. Class teachers graduate from Tallinn University with a basic knowledge of teaching and readiness for continuous learning and self-development through daily work aimed at developing their professional competence. Teachers' 5<sup>th</sup> Professional Standard has been accepted to regulate teachers' work in Estonia. Participation in educational life fosters self-development and shapes professional and individual identity. Teachers' professional standard can guide teachers in assessing their own professional skills, including essential competence such as planning and guiding, creating the learning environment, motivating learning, co-operation, communication, and self-analysis. The research problem is: how do the teachers assess their professional skills? The data have been gathered using educational-ethnographic essay and a questionnaire clarifying the correspondence of teachers' professional skills to the standard of professional competence. The research is located within the qualitative paradigm. The highest value was attributed to the skill to consider the individual differences of each child and command of versatile teaching methods. The further development is needed in areas of sharing one's thoughts and experience with colleagues and parents' involvement in co-operation.*

*Key words: teacher; teachers' standard of professional competence; professional identity.*

Estonian post-socialist society has witnessed swift changes, especially in the increase of the standard of living. However, the new circumstances have also brought about changes in values, relations, and attitudes – hence, transformation of the teachers' role image has been inevitable. However, there are discrepancies apparent in way teachers' role is perceived in this changed society, often reflecting the values underpinning public opinion. There have been relatively few discussions in Estonia on the role of the teacher as a promoter of values characteristic of the humanistic society that assures sustainable life quality such as social equality, caring, environmental economy, etc. presently and in future.

Sustainability in teacher training and development of practising teachers' professional competence have different aspects. The primary question is – are we able to appreciate the teacher as a carrier of sustainable values now and in future? Secondly – how does the principle of the sustainable functioning work in the process of teacher training? In the other words, to what extent could the valuable experiences documented through time be retained and bound to the needs of today's life? Thirdly, how does the sustainability of the teachers' profession manifest itself in individuals, as becoming a teacher is a long, versatile, and time-consuming process, where practical experience turns into knowledge and knowledge is implemented in practice and refined through the professional skills. Such a sustainable process of development in teacher training can occur only if the acquisition of practical skills is in harmony with the understanding of oneself and development of one's professional competence.

To reach agreement on the kind of teacher qualification that can support the sustainability of his/her professional development and regulate teachers' work in Estonia *Teachers' 5<sup>th</sup> Professional Standard* (2005) has been adopted. *Teachers' 5<sup>th</sup> Professional Standard* enumerates domains which are valued in the teachers' work by the present-day schools. These are: planning and managing learning, co-operation, developing learning environment, motivation, guiding learning, communication, analysing and assessing learners' development and study process, and self-analysis and professional development.

The teacher is a key figure in educational reform; she/he understands the educational process and is ready for discussion and perfection of analysis. In contemporary society the teacher has to be: an ethical and active citizen, i.e. a bearer of national identity, a person with a student-centred approach, a good subject specialist, a supervisor and a developer of learning skills while also learning him/herself, a good team member, and a researcher. Hence, contemporary pedagogy presupposes that the teacher has excellent self-knowledge, knowledge on educational reality and his/her profession, readiness to discuss, possesses analytical skills to describe his/her development, is open to upgrading his/her knowledge and skills, and ready to accept changes. The teacher must possess the ability to work with what is unfamiliar and different, however, with securely rooted identity. Most of these qualities have been valued before, indicating that the sustainability in the teachers' professional development has been progressively a conscious process. It was succinctly emphasized in 1998, when the Commission on Sustainable Development of UNESCO developed guidelines for reorienting teacher training to address sustainability (UNESCO Education Sector, 2005): "The question seems to lie in what teachers value in the development of their professional identity? If and to what extent are teachers aware of the objectives of their activities, the ways of achieving these and the effect that they have?" Hence, the research problem is: how do teachers critically evaluate their professional skills?

## **Theoretical overview**

Teachers' professional competence, especially at elementary school level, is revealed in their ability to understand and observe the child's development and different stages of socialisation. Primary school teachers face an academically demanding role – teaching the basics of the 3Rs (reading, writing, arithmetic), at the same time providing children with a moral and social education and developing their skills of critical thinking and

aesthetic sensitivity. The qualification criteria of an Estonian teacher require higher education, however, teacher's professional career might evolve from various types of training and work experience. Setting clear objectives and developing a capacity for self-reflection are therefore priorities in teachers' professional development in Estonia. A major challenge lies in the lack of sustainable development of professional skills, the fulcrum of which are the professional standards that have to be achieved in one's job.

In present-day society teachers are required to analyse their activities, possess the skills to co-operate with the pupils, their parents, and colleagues as well as to be critically aware of their identity. Active participation in educational life would enable the teacher to learn the alternatives of his/her personal development and to practise making self-related decisions, i.e. develop his/her own professional and personal identity. Talvitie (1996: 253) defines the teacher as an individual, who acts actively and consciously, and takes conscious responsibility both for his/her activities as well as their results. Being a teacher has always been related to the question: who am I as an individual and what is my social and professional identity? (Hustonen, 2000: 15; Valk, 2003: 229; Karu, 2006).

Some researchers share a common understanding that a teacher's identity is a continuous intertwining of personal and professional aspects within the process of becoming a teacher (Beijaard et al., 2004: 113; Liebkind, 1988: 80-81; Karm, 2006: 76). Understanding of teachers' professional identity affects the efficacy of their actions, professional development, and readiness to accept changes. Kelchtermans (1993) highlights the following aspects of the development of teachers' professional identity:

- Perception of oneself as a teacher – How does a person describe him/herself as a teacher?
- Assessment of oneself as a teacher – How good does one consider him/herself to be in this profession?
- Meaning of activities to oneself – What motivates a person to become a teacher and to continue working in this profession or to give it up?
- Understanding of one's tasks as a teacher – What is the essence of teaching and what are the norms that enable teachers to describe and evaluate their professional practice?

In order to be appreciated as an effective teacher, to develop oneself in the profession and to achieve job satisfaction, a person needs a clear perception of one's professional self and positive self-esteem. If there is consistency between the criteria, actions, objectives, norms, values, positions, or resources of being a member of a group sharing the same qualities of the construction of personal self, the identification can be strong (van Dijk, 2005: 144). Henriques and Sternberg claim that a person who has a fragmented, unstable, and contradictory identity acts ineffectively. They emphasize that the same viewpoint is relevant to professional identity (2004: 1060).

Knowledge of oneself as a teacher, professional identity, and professional self-concept are fundamental elements in the understanding of one's role as a teacher and one's professional beliefs and convictions (Estola, 2003). The development of teaching competence, ability to notice the uniqueness of pupils' development and learning, and readiness to analyse and develop oneself as a teacher are considered to be crucial aspects of professional development (Kagan, 1992), and this is achieved most effectively through professional practice, i.e. day-to-day teaching. Teachers' professional development manifests itself in improving necessary professional competences to guarantee pupil development and high learning achievements (Fullan & Stiegelbauer, 1991). There-

fore, gaining an understanding of the aims of one's activities, plans, required means, processes of action, assessment and feedback is paramount (Talts, 2003: 111-112; Timoštšuk, 2006; Eisenschmidt, 2006: 10). In this study the teachers' appraisals of their professional competence in Estonia have been researched by two qualitative methods.

## **Research methodology**

The current research was conducted by the students and lecturers of primary school class teacher speciality in Tallinn University during the seven weeks of teachers' pedagogical practice in October and November 2006.

The conceptual framework underpinning this research is developed around the domains of professional skills listed in *Teachers' 5<sup>th</sup> Professional Standard*. These are: planning and managing learning (6 sub-skills); co-operation (10 sub-skills); developing learning environment (10 sub-skills); motivation (6 sub-skills), guiding learning (9 sub-skills); communication (7 sub-skills); analysing and assessing learner's development and study process (5 sub-skills); self-analysis and professional development (5 sub-skills). Each domain of professional skills can be divided into more specific sub-skills. The objective of the research was to establish how the teachers assess their conformity with the above-mentioned professional standard. Two qualitative research methods were applied to achieve this objective:

1) Educational-ethnographic interviews and students' essays formed the basis for the analysis of professional skills originating from teachers' professional standard. The method of educational ethnography is an inductive method in essence, i.e. moving from particular to general. This presupposes knowledge about the person's understanding of him/herself as a teacher. The researcher should try to see the problems through the eyes of the researched, where describing, analysing, and interpreting the researched individual's personal experiences and self-reflection is the source of information (Robson, 2002). The ethical requirements such as the consent of the studied persons to participate in an interview; creating a confiding relationship, usage of pseudonyms and confidentiality in relation to the information obtained were observed.

Eighteen interviews were conducted and essays reflecting the teachers' professional skills were compiled. The basis for analysing the essays was the teachers' descriptions of coping with different spheres of professional skills included in the professional standard.

2) The second method, conducted among 34 class teachers, was a questionnaire in which the teachers had to evaluate their professional skills relying on the professional standard on a 4-point scale (always, frequently, seldom, never) and add their own comments.

The research data gathered by the above-mentioned methods underwent complex thematic analysis depending on the dominating ideas expressed by the teachers. Qualitative approach enabled to identify teachers' subjective opinions about their professional skills, which, furthermore, indicates the teachers' professional self-esteem. The structure of analysis is based on the domains of professional skills presented in the *Teachers' 5<sup>th</sup> Professional Standard*. The most widespread opinions have been presented in italics in the next sub-section of the article.

## Results

The current article proceeds with the analysis of teachers' assessment of their professional skills based on the *Teachers' 5<sup>th</sup> Professional Standard*.

**Planning and managing.** The general principle of this domain is that the teacher is a leader, who organises pupils' work. Thorough preparation and planning guarantee systematic activities both within a particular lesson as well as throughout an academic year. The teacher considers the national documents and compiles syllabus and work plan to coordinate daily work related activities. Teacher sets clear objectives regarding his/her actions, defines learning results, and organizes extra-curricular activities, involving first the pupils, then colleagues and parents (Eisenschmidt, 2006: 13).

An opinion expressed by the teacher who participated in the research:

*The teacher is the key person of the educational system, the designing element of the school as a system, he leads the processes in the classroom: learning, teaching, thinking, playing, meditating, discovering, etc.*

The necessity of developing an individual curriculum was also relatively highly estimated. In order to be effective in their daily work, teachers set specific objectives to their activities.

Teacher 3 writes:

*The teacher must see the aim wider than it is possible to accomplish; consider pervasive learning topics and pupils' special needs in education.*

**Developing learning environment.** This sphere of professional skills is related to the teachers' ability to create emotionally and physically secure environment that fosters learning and the development of the learner; the environment where it is possible to observe the processes and prevent and flexibly solve the problems. Moreover, teacher should notice the pupils' cultural characteristics or the individual uniqueness of the personality of a pupil, master routine classroom activities and, if necessary, make use of the possibilities of information and communication technology, and also produce study materials. Facing crisis situations she/he must have the skills of responding adequately and providing first aid. According to the results of the two methods used, it could be said that the teachers who participated in the research are highly interested in changing the physical environment keeping in mind the possibilities of a particular school. However, many problems were highlighted in the teachers' assessments of developing learning environment:

Teachers 2, 6, 11:

*There are more hyperactive and problematic children at schools, studying is also less popular with a greater number of pupils; the values of children have altered – external values outweigh the internal ones, children are more adult-like and have more life experience and they fail to get enough attention at home, hence, they are looking for it at school.*

The analysis of the use of information and communication technology as an outstanding possibility to enrich learning environments revealed differences in opinion. Some of the teachers were always eager to make use of the technology (predominantly the participants in the educational-ethnographic study), but there were also those, who avoided it.

The most positive evaluations regarding the domain of developing the learning environment were given to the skills of conducting a lesson. Teachers believed that they could manage successfully conducting the lesson, only some hesitated about their achievements. The respondents showed high awareness of the principles of lesson planning and which activities lead to the completion of the objectives set for the lesson.

**Guiding learning.** This sphere of professional skills presupposes teachers' thorough knowledge of didactics (Eisenschmidt, 2006). The teachers participating in the study stressed that they inform the pupils of the content, aims and expected learning results of the lesson, and the principles of evaluation. Moreover, they try to connect the subject they teach to the surrounding environment, encouraging the pupils to implement the acquired knowledge. The respondents use group or individual teaching methods and forms that suit the teaching objectives, the learners' age and abilities and take the pupils' social and learning skills into consideration. They also try to support the development of new skills.

Teacher 9:

*As every lesson is new and the internal climate of the class differs from the previous, hence, every lesson the teacher must use different means of keeping order and self-assertion.*

It is encouraging to note that the respondents consider the pupil as an individual and support his/her comprehensive development.

Teachers:

*Pupil's character and individuality should be considered, teaching/learning requires becoming adjusted to many different situations and every person has a unique ability of adaptation.*

Since both teaching and learning change in time, teachers have to concentrate more on teaching the skills of independently orienteering through a wealth of information, on developing pupils' cognitive abilities and on tailoring the teaching and learning environment so that it suits the pupils with various language skills and diverse cultural backgrounds.

Teachers mentioned the following features:

*Managing teaching pupils with special needs at mainstream schools; the devices of solving problems have to be used according to the necessity and the seriousness of the problem; I value my ability to manage teaching in a large class of boys; the ability to work in multicultural learning environment.*

**Motivation.** The primary skill of the teacher is the skill to make use of active teaching methods, encourage the learner to set personal aims, guide, analyse and provide feedback. The following motivation fostering activities were emphasised in the teachers' responses:

*The use of different teaching methods and various books, course books, the Internet and the teacher's own knowledge enable him/her to make the lessons more versatile; an important component of a lesson is play.*

However, teachers have given critical evaluations of their ability to provide students with multi-faceted feedback and foster the students' skills of motivating themselves.

**Co-operation** concentrates on the collaboration between different interest groups: parents, colleagues, school authorities, other organisations and support systems. Teachers participate in the organisational and developmental activities of the school, develop their activities as team members, share their knowledge with colleagues, provide feedback on their activities and ask colleagues to assess their performance, participate in events organized inside and outside of school.

In assessment of co-operation skills, the teachers' opinions reflected a greater degree of diversity than in other domains of professional skills. Some teachers refer to their dislike of collaboration, others consider co-operation skills to be of paramount value.

An example of a negative attitude:

*The expectations and demands upon teachers have increased. At the same time the methods of childrearing at home have become very different resulting in various situations and relationships at school. Parents are less involved in the process of bringing up their children. The school and teachers are blamed if problems emerge; parents are not too inclined in expressing gratitude for the work done at school, but are very quick in pointing the finger.*

An example of supporting collaboration:

*Co-operation with the parents is good and enriching and fosters pupils' abilities of coping.*

Feedback from colleagues is very seldom requested, furthermore, teachers are rather cautious in assessing their colleagues' professional behaviour. The activities of teachers at school are not only related to teaching, they include various developmental events both for the school staff, as well as the others. Unfortunately, only few teachers considered it important to always participate in those activities.

**Communication** reveals the teachers' ability to express themselves, the quality of the message conveyed, and its comprehension by the learner. The teacher must choose an appropriate level and means of communication, use correct and appropriate oral and written language, express him/herself clearly, have the ability to solve conflict situations. Hence, communication is the process of interpersonal exchange of information, which includes mutual perception and getting to know each other, and restoring social relations.

According to the results, it could be claimed that the teachers participating in this study rated their ability to communicate and use proper language both in writing as well as in speech very highly. Furthermore, a positive evaluation was given to the teachers' ability to choose an appropriate level of communication depending on the partner.

**Analysing and assessing the learner's development and study process.** The teachers' professional standard emphasises the following skills regarding this domain: teachers' ability to analyse the results of pupils' development and give adequate and multi-faceted feedback about pupils' results to different parties who are involved in the learning

process, at the same time guaranteeing the confidentiality of personal data; an ability to introduce clearly and plainly one's principles of evaluation to the pupils, colleagues, and parents. The teachers' assessments revealed that they value and analyse the learners' development and learning results.

Teacher:

*A society pervaded by the principle of competition also encourages the pupils to work more purposefully and conscientiously.*

A positive aspect of the opinions expressed by the majority of the teachers participating in the study is that they analyse pupils' development and use this knowledge to inform the planning of future activities.

**Self-analysis and professional development.** The ability of teachers to engage in self-analysis is the foundation of sustainable professional development. The professional standard stipulates that the teacher sets objectives of personal and professional development derived from the results of self-analysis and plans actions necessary to achieve these aims. The teachers participating in the research were aware of the need to analyse their activities. Some examples of the teachers' responses:

*The primary prerequisite of self-directing is continuous self-analysis, treating oneself as a subject, adequate vision of oneself and the world; it is important to get feedback on one's work, also analysing and observing one's own work.*

Furthermore, lifelong learning was mentioned as an important component of professional development:

*Continuous development through in-service training courses supports and helps.*

## Conclusions

The evaluation of the professional skills provided by the teachers, who participated in the research, are rather similar to the requirements enumerated in the *Teachers' 5<sup>th</sup> Professional Standard* accepted in Estonia. The competences established in the professional standard form the teachers' criteria for assessing and developing their professionalism. Teachers' professional standards must not be perceived in isolation, they function well only if teachers' own values are integrated in the framework of the main values of life meaning that teachers' personal and professional values should be in congruence with each other. Hence, it is important that teachers, while guiding and teaching the children, use their professional skills to shape students' understanding of citizenship, which is connected with one's responsibility to promote the sustainable development of the country. Teachers' positive self-esteem expressed in their assessments of professional skills is related to increasing autonomy and the detailed expectations presented in professional standard (Eisenschmidt, 2006). Therefore, the sustainability of class teachers' activity is manifested at two different levels: the level of pupils, whose further welfare is dependent on the strength of value foundation created by the class teacher. The level of teachers' activities embodies the principle of positive social sus-

tainability, which is derived from the first stage of an educational system and proceeds in the context of lifelong learning. Therefore, we can say that teachers' professional competence plays a major role in the sustainability of the society. It is instilled through various subjects as well as individual and cooperative activities in the students' understandings and attitudes to the possibility of maintaining sustainable humanistic and ecological values.

The results of the research project indicate that while planning their activities of the teaching process, the class teachers rely on imposed *Teachers' Professional Standard* and in order to cope successfully, they set short- and long-term objectives. Furthermore, they have well acquired the routine activities necessary for conducting the lesson and sense that by mastering different methods and using additional study materials they are able to be successful teachers. Finding a common language with the pupils is not difficult, since teachers assess their skills of communication, public speaking, and active listening as 'good'. The research also reveals that the teachers analyse and discuss their activities, however, they are not very keen on sharing the results.

The results indicate that the teachers were aware of the necessity of co-operation in order to cope successfully in the profession of teaching, but their skills of collaboration are insufficiently developed and they do not wish to improve them. Neither colleagues nor parents are thought of as partners. In reality this is a major drawback, as it reduces the smooth spiral development in the hierarchy of coping and professional identity (Talts, 1993; Eisenschmidt, 2006). Hence, no adequate feedback is provided to the pupils about their success or failure, neither colleagues nor parents are helped.

The results suggest that the teachers perceive the sustainability of their profession first of all at the level of individual action, which is manifested by applying their skills in a particular classroom. The identity is not therefore associated with the broader context of the teaching profession that would require sharing their thoughts and actions with colleagues and the general public. For the teachers to be motivated to work together with colleagues and the general public, they need more acknowledgement from the government. Latest developments show that certain steps are taken to upgrade the status of teachers in Estonia. An example of that is the planned salary increase in year 2008 as well as the development of study environment and an increase of parental influence in the schoolwork. Normalisation of workload and increase in the perceived value of teaching profession in the society would help teachers to reach the understanding that education for sustainable development is an essential part of a larger undertaking regarding the quality of life.

Looking at the research data presented, we can say that class teachers have a high sense of mission and responsibility, but they should concentrate more on self-analysis, because personal satisfaction is the foundation of professional success. The last decade has brought multiple alternative teaching and pedagogical methods to teachers, though not all of them have been analyzed enough. Nowadays the Estonian educational system has reached a level, where the past legacy can be analyzed critically and new experience can be gained from other democratic countries. *Teachers' 5<sup>th</sup> Professional Standard* helps teachers to define their identity more clearly and provides reference points about what kind of a teacher with which professional skills is expected by society today and tomorrow.

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## TEACHERS' VIEWS ON INNOVATIVE PROCESSES IN SCHOOLS OF LATVIA

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### Abstract

*Orienting society toward sustainable development is impossible without the development of a teacher into a creative person with his/her individual style of activity and thinking. This cannot be achieved without a continuous and systematic professional development that promotes innovation. Great hopes are placed on innovations, they are considered to be a reliable driving force for development.*

*The research emphasizes the importance of identifying what teachers think about innovations in education and their own position in relation to innovative activity. Evolutionary Model, Innovative Milieu Model, and Propulsion Model of Creative Contributions can be applied within a context of presented study.*

*Eight teachers (four teachers with a student/learning-centred orientation towards teaching and four teachers with content-centred orientation towards teaching), who worked at different schools, were interviewed in October and November 2006. Ettlíe and O'Keefe's scale of attitude to innovations was used as the basis during the interview (Ettlíe & O'Keefe, 1982). The research revealed the most important factors hampering teachers' motivation for innovative activity and pedagogical regularities and criteria for stimulating innovations.*

**Key words:** *innovation; teacher; motivation; creative activity.*

For Latvia as a small country with open economics and limited resources it is important to integrate the newest global social tendencies. We have to learn how to change and use the new opportunities provided by these trends. According to the studies on the development of Latvia's society (Karnītis, 2004), among others Latvia currently have the following advantages: 1) the social relationships in general are based on tolerance, 2) the population is ready to participate in the development of the country, 3) the youth has a stable interest in acquiring the tertiary education, and 4) several spheres employ the experienced and highly qualified professionals. Also, the weaknesses that urge for the improvement or innovation are noticed. These are 1) the small experience of democracy, 2) social, economical, and political diversity, 3) non-rational educational system, insufficient capacity and quality of tertiary education, and 4) deficient number of highly qualified professionals.

Nowadays, in education of Latvia great importance has been attributed to the main value of human being as a creative person who promotes the development of society. A creative person is an objective and unique wealth of society. The development of a creative person able to promote the innovations does not have any limited frontiers. It is a continuous lifelong process starting from one's early childhood years.

Analyzing the latest global social and educational trend – the sustainable development, some researchers single out the following characteristics of effective education for sustainable development: flexible and adaptable; interdisciplinary or transdisciplinary; collaborative; experiential; holistic; locally relevant; emphasizing values; future-oriented; action-oriented; learner-centered; problem solving; systematic (Institute of Environmental Studies, 1999: 16).

Implementing these requirements into life is only possible by dint of teachers' innovative activity. According to Wexler (2002: 471), innovative activity is the element in the structure of teacher's pedagogical activity and the presented research deals with the opinions of Latvia's teachers about innovations and their motivation for innovative activity.

Orienting society toward sustainable development is one of the central issues pertaining to the development of a teacher into a creative person with his/her individual style of activity and thinking. This cannot be achieved without a continuous, systematic professional perfection and innovative activity.

The range of concepts included in the term 'innovations' is wide and definitions are various. Since the 'innovation' as the research object has not yet been completely investigated and understood, the definitions of the term are still imperfect. The Latvian terminology used for innovations is quite new; therefore international notions and simplified terms are used. For instance, notions like 'innovations and National innovation system', 'a new paradigm of pedagogy', 'knowledge-based innovations', 'innovations in education', 'innovation management', etc. are widely used in plan for the Strategic Development of Latvia.

This research emphasizes the importance of identifying what Latvia's teachers think about innovations in education as well as their own position in relation to teacher's innovative activity. What are innovations? How do they "work"? Why do we encounter innovation concepts in pedagogical theories? How can we explain novelties in pedagogical processes and evaluate their influence and necessity? These and similar questions often lack the complete answers and awareness, therefore the authors have made an attempt to explore this issue in more detail.

## Theoretical background

The term 'innovation' originates from Latin '*innovatio*' which means: something newly introduced. The attempts to interpret and define the concept 'innovation' have been many and diverse (Urban & Hauser, 1980; Everett, 1983; Guile & Quinn, 1988; Schumann, 1994; OECD, 1994; NATO, 1997, etc.).

The notion of innovation comprises three meanings: innovation as instrument, innovation as process or action, innovation as end result (new offers, new technologies, changes in social life, etc.). Innovative activity is the application of scientific and technical achievements, knowledge and information in accordance with the changes in society and for the improvement and promotion of economic, social, legal, cultural, educa-

tional and other processes vital for society. According to this formulation, an innovative activity should include knowledge about scientific, technological and management processes and about other disciplines pertaining to social and humanitarian sciences.

Teachers' activity is multi-shaped and diverse, but today it is more subordinated to the existing social and economic processes of the country, which complies with the Evolutionary Model.

Saviotti (1996) enlists the following key concepts in an evolutionary approach to innovation: generation of variety; selection; reproduction and inheritance; fitness and adaptation; population perspective; elementary interactions; external environment. This approach suggests that innovations are connected with social and economic processes, where the main values are oriented towards the relationship between the person and the social environment. Thus, we believe that the innovations created by teachers have to be linked to the social context of societal development and directed toward the consideration of social context in the improvement of capacity of pedagogical process.

The Innovative Milieu Model states that "innovation stems from a creative combination of generic know-how and specific competencies" and "territorial organization is an essential component of the process of techno-economic creation" (Bramanti & Ratti, 1997: 5).

An early description of innovative milieu by Camagni (1991) lists the following components:

- a productive system;
- active territorial relationships, e.g. inter-firm and inter-organizational interactions fostering innovation;
- different territorial socio-economic factors, e.g. local private or public institutions supporting innovation;
- a specific culture and representation process;
- dynamic local collective learning process.

Irrespective of the fact that this model was initially designed for the branches of economics, we can also apply it in education.

The Propulsion Model of Creative Contributions (Sternberg, Kaufman & Pretz, 2002) is a descriptive taxonomy of eight types of creative contributions: 1) replication, 2) redefinition, 3) forward incrementation, 4) advance forward incrementation, 5) redirection, 6) reconstruction/redirection, 7) reinitiation, and 8) integration.

The model may be instrumental in understanding the types of inventions and why some inventions are more successful than others, often independent of their quality or level of novelty. This approach explains how inventions differ from one another, not just in their level of creativity but in the type of creativity they demonstrate.

Apparently, Latvia has to proceed to a certain stage of development in social and economic growth for innovative activities to impact education according to the Innovative Milieu Model and the Propulsion Model of Creative Contributions, because 1) the processes which are singled out in the Innovative Milieu Model (active territorial relationships, different territorial socio-economic actors, a specific culture and representation process) are not sufficiently developed in the regions of Latvia; for the time being the teachers' innovative activity is possible in accordance with the types of creative contributions (replication, redefinition, and forward incrimination) as distinguished in the Propulsion Model.

## Method

### *Sample*

The eight teachers, participating in this study, were selected from a larger sample of 364 Latvian secondary school teachers who had participated in previous studies about motivation of teacher's creative activity (Davidova & Kokina, 2004, 2006). The selection criterion was the pronounced difference in professional orientations, assuming that teachers would also differ in their attitudes to innovations in education, and, therefore, would clearly show the way they experience and appraise the innovations in schools. The previous studies were conducted in 2003 and 2005 and explored secondary school teachers' orientations towards different aspects of their work quantitatively (teachers' creative self-development and motivation of teachers' creative activity).

The eight teachers, who worked at different Latvian schools, were interviewed in October and November 2006. Ettlíe and O'Keefe's scale of attitude to innovations was employed during the interview (Ettlíe & O'Keefe, 1982). Drawing on the previous testing of teachers (Davidova & Kokina, 2004, 2006), the following four teachers were selected from the group of teachers with a student/learning-centred orientation towards teaching and an extended orientation towards the school organization (all names are pseudonyms):

- Normunds, physics teacher, with more than 12 years of experience;
- Daina, Latvian language teacher, with more than 16 years of experience;
- Inese, mathematics teacher, with more than 18 years of experience;
- Tereza, Latvian language teacher, with more than 21 years of experience.

The other four teachers were selected from the group of teachers with content-centred orientation towards teaching and restricted orientation towards the school organization (all names are pseudonyms):

- Laura, biology teacher, with more than 13 years of experience;
- Zhenija, music teacher, with more than 16 years of experience;
- Lusija, literature teacher, with more than 19 years of experience;
- Ausma, English language teacher, with more than 22 years of experience.

### *Procedure and data analysis*

The interviews took place either at school or at home. The first interview lasted 1-2 hours. Two researchers conducted each of the interviews: one asked questions with the aid of a topic list, and the other listened, took notes, and possibly posed additional questions at the end of the interview. A research log was kept both during and after the interview (Kelchtermans, 1994). In this log, the researchers reported their general impressions of the interview, what went well, what could be improved, their personal impression of the respondent in terms of pleasantness and interest, their impression of the environment in which the interview took place, and their role in the interview (Miles & Huberman, 1984; Kelchtermans, 1994).

All interviews were audio taped and transcribed to create a written protocol. The first steps of analysis followed (see next paragraph, phases 1-4). Then a second interview was conducted, lasting 1-1.5 hours. The interview protocols and the initial analy-

sis were sent to the respondents for validation. All of the teachers subsequently agreed with the content of the protocols and the initial analysis.

The analysis of written interview protocols carried out by the authors of the article consisted of several phases (Miles & Huberman, 1984):

- 1) Assignment of a descriptive code to interview segments relevant to the different research questions;
- 2) Assignment of a more interpretative code to each of the selected segments in order to make a global summary of the segments' content;
- 3) Codification of each interview segment for the orientation (student/learning-centred, teacher-centred, or content-centred; restricted or extended) and the primary components of appraisal and attitudes (positive or negative);
- 4) Examination of each segment from the perspective of the research questions and, on the basis of this information, development of a more specific classification of the segments. Creation of a summary data matrix for each respondent;
- 5) Discussion on the initial analysis with the teachers in the second interview, resulting in some adjustments and refinements;
- 6) Analysis of the summary data matrix for each individual respondent (vertical analysis); comparison of the data matrices from the different respondents and summary within a single data matrix (horizontal analysis);
- 7) A summary of the results with clear references to the data matrices, interview segments, and written protocols. Usage of the Atlas/ti (1997) software program to guide the qualitative analysis.

## Results

Having processed the results of the teachers' interviews, we can provide several main points clearly characterizing the position of teachers (see Table 1).

Table 1. Orientations of the teachers towards innovations in school

Orientation towards teaching	Teachers	Statements of teachers' position
Student/learning-centred orientation	Normunds, physics, 12-years of experience	<ul style="list-style-type: none"> <li>• Innovation is a new and original idea.</li> <li>• A teacher should be a daring and competent scientist.</li> <li>• I can willingly outline a new idea on a sheet of paper.</li> <li>• I would like to participate in the project if there was an interesting and competent team.</li> <li>• Innovators are surely talented fanatics.</li> </ul>
	Daina, Latvian language, 16-years of experience	<ul style="list-style-type: none"> <li>• Innovation is introducing new things in practice.</li> <li>• A teacher must be a driving force of innovative activities.</li> <li>• My innovations would not be supported,– therefore I didn't tell about them to anybody.</li> </ul>

*Sequel to Table 1 see on p. 30.*

*Sequel to Table 1.*

		<ul style="list-style-type: none"> <li>• I would willingly participate in the project, but first I need adequate knowledge, necessary for developing and implementing projects.</li> <li>• I greatly respect those teachers who are able to change the educational system in Latvia.</li> </ul>
	Inese, mathematics, 18-years of experience	<ul style="list-style-type: none"> <li>• Innovation is a characteristic feature of the present time.</li> <li>• Innovations at school, first of all, should be linked to the differentiation and individualization of the study process.</li> <li>• I pondered over the innovation for a long time, and then tried to explain my new idea to my colleagues.</li> <li>• Teachers should be more active in participating in projects.</li> <li>• Our progress will stop without people who are clever and full of initiative and who are not indifferent to ideas about changes in education.</li> </ul>
	Tereza, Latvian language, 21-year of experience	<ul style="list-style-type: none"> <li>• Innovation is novelty.</li> <li>• Teacher's innovative activity is oriented to pupils' freedom and independence.</li> <li>• I try to appraise new ideas during my classroom activities, and I often have good results. I lack courage and time to inform other people about my attempts.</li> <li>• I participated in the project and gained experience: it was both interesting and difficult.</li> <li>• Teachers-innovators are necessary today, but they are very few.</li> </ul>
Content-centred orientation	Laura, biology, 13-years of experience	<ul style="list-style-type: none"> <li>• Innovation is a progress.</li> <li>• Teachers lack knowledge about innovative activities.</li> <li>• Now and then, some interesting idea comes to me, but I am not sure whether it could be interesting to somebody else, therefore I keep silent.</li> <li>• I heard from my colleagues that to develop and implement a project is extremely difficult.</li> <li>• I am sorry for the teachers who think they can solve the problems of contemporary education.</li> </ul>
	Zhenija, music, 16-years of experience	<ul style="list-style-type: none"> <li>• Innovation is the wish and ability to change the situation in a problem field.</li> <li>• Teachers' innovations are not needed and supported at school.</li> <li>• Scientists should be concerned with innovations, we, teachers, are practitioners.</li> </ul>

*Sequel to Table 1 see on p. 31.*

Sequel to Table 1.

	<ul style="list-style-type: none"> <li>• I am not competent enough to develop and implement a project, because, in my opinion, specific knowledge and skills are necessary for this.</li> <li>• Indeed, any initiative on the teacher's part should be appreciated and supported, but today, unfortunately, the Ministry of Education and society on the whole are not interested in stimulating teachers' innovative activities.</li> </ul>
Lusija, literature, 19-years of experience	<ul style="list-style-type: none"> <li>• Innovation and new technologies are related.</li> <li>• Teachers do not have time to think about innovations.</li> <li>• School does not particularly need new ideas.</li> <li>• I doubt I can develop a project because I don't have experience in this sphere.</li> <li>• I can't understand people, who wish to change the world.</li> </ul>
Ausma, English language, 22-years of experience	<ul style="list-style-type: none"> <li>• Innovation is an abstract and new product.</li> <li>• Today, teachers are not ready for innovative activities yet.</li> <li>• It is quite difficult to implement new ideas at a contemporary school, the present education system restricts teachers' initiative.</li> <li>• I didn't participate in projects.</li> <li>• Society should take care of teachers who are daring and full of initiative, who are not indifferent and who have new ideas.</li> </ul>

As the results show, the teachers' views on innovation in both groups are rather similar: innovations are new and original ideas connected with the solution of practical problems, they mean progress and new technologies as well as desire and capacity to change the situation. As to the teachers' stance toward the innovative activities, the big differences in teachers' views are quite evident:

- *Teachers representing the student/learning-centred paradigm* indicate to the active position of teacher toward the innovative processes in school, stressing the necessity of teacher's research skills, differentiation and individualization of pedagogical process. They associate the innovative activities of teachers with the freedom and independence of pupils. Teachers from this group remark that they have new ideas, many of them are already implemented, and they are ready to share their experience with their colleagues;
- *Teachers representing the content-centered paradigm* express rather pessimistic attitude toward the teacher's innovative activities in school: teachers lack the knowledge on innovative activities; they do not have time to think about it being too busy with different work activities, have no support for implementation of innovations from the school management, educational departments, and society in general.

Analysing the results of interviews related to the participation in different projects, the interesting distinction arises:

- *Teachers representing the student/learning-centred paradigm* are open and ready for the cooperation with colleagues, they stress the role of knowledge and experience in innovations. Teachers who already participate in innovative projects mention that such activities are necessary, interesting but also complicated.
- *All teachers representing the content-centered paradigm reject the necessity for the participation in projects.* They also do not have an experience with designing and implementation of such projects.

Interviews with teachers testify to the fact that teachers are aware of the importance of innovations for the development of education institutions, nevertheless the notion 'innovations' is interpreted in quite a variety of ways. Teachers also realize that innovations exist, are possible and necessary for their pedagogical activities. For them innovations are everything that seems new when compared to what has been previously happening. It should be mentioned, however, that effectiveness of innovations is seldom viewed from global and sustainable development aspects, because, in teachers' opinion, the effect of innovation is often perceived as something abstract and short-termed.

## Discussion and conclusions

The pedagogical prognosis for effective stimulation of motivation for teachers' innovative activity would not be valuable if reasons that lessen this effectiveness were not explored. The research revealed the following most important factors hampering teacher's motivation for innovative activity:

- 1) low payment;
- 2) formalisation of administration requirements;
- 3) poor material and technical basis for studies;
- 4) biased recognition on administration's part;
- 5) teacher's discontent with self-realization methods;
- 6) lack of information about innovative teaching technologies which teachers are interested in;
- 7) unfavorable moral and psychological atmosphere at school;
- 8) too strict work regulations from the school administration's part.

The stimulation of teachers' motivation for innovative activity should be viewed in close relation with the quality of premises and technical resources at school. The analysis of research data shows that deficient material resources are among the most important reasons for pupils' reluctance to study.

An unfavorable moral and psychological atmosphere at school also essentially lessens the motivation for teachers' innovative activities, hinders teachers' mastering of new techniques and methods that would enable them to use their time and information sources rationally, operatively, and effectively. Good cooperation among pupils and teachers and a creative atmosphere at school promote the development of teacher's professional skills and qualification. Active application of effective technologies, persistent perfection of qualification and constant interest in pedagogical and psychological research findings promote the success of teachers' own activities and stimulate them to study other teachers' innovative activities.

Creative atmosphere at school facilitates application of effective technologies for pupils' teaching, education, and development. It stimulates teachers' purposefulness, develops self-discipline, readiness for innovative activity, and strengthens interest in creative activity.

The self-stimulating potential of teachers' innovative activity is realized by achieving the set aims and by identifying and solving problems important for them. In the research, the following teachers' self-identified motivation stimuli were distinguished:

- application of effective technologies for teaching, education, and development of pupils;
- recognition and prestige among pupils;
- respect shown by other teachers and administration.

Other teachers' and administration's respect is closely linked with recognition from the pupils.

The analysis of the research data proved that the teachers' desire to gain recognition and prestige among pupils strengthens their interest about the innovative activity, stimulates the skills of objective evaluation of teachers' own and pupils' activities, promotes the development of responsibility, and stimulates striving for success in a teaching process. Awareness about the need to succeed in individual activities interlinks with the necessity to improve the professional skills and pedagogical culture achieving success in creative and innovative activity as well as to analyze errors, failures, and attempts to avoid the situations that have caused them.

In their essence, the conditions of an innovative activity should be considered as non-standard conditions of a pedagogical experiment, but the needs to be informed about effective teaching, education and development technologies are closely linked with the necessity to perfect professional skills and pedagogical culture. Working under experimental conditions, the teacher observes a need to change some features of his/her personality, since the conditions of innovative activity require determination, purposefulness, communicability, and benevolence.

Participating in creative search, the teacher experiences need to conduct an experiment and strives to enrich his/her knowledge in the field of scientific research, studies the research materials, and works on gaining knowledge in psychology and methodology of teaching his/her subject. This in turn entails the necessity to have a deeper insight into the experience of effective innovative activity, thus extending the application of his/her own creative approach in innovative pedagogical activity.

Teachers, who participated in the study, associated the notion of innovation with original new things and progress. They were aware of the role of innovations in the process of educational development. For teachers with a student/learning-centred orientation innovations mainly mean introduction of new methods into the teaching process. Teachers with content-centred orientation emphasize the necessity to introduce innovations in the sphere of new technologies and to train teachers to work with these new technologies. Teachers with a student/learning-centred paradigm stress that it is vital to organize innovative teams, because one person is not able to put innovations into practice. It is also mentioned that innovations are seldom discussed at school and teachers are extremely loaded with work. Some teachers, who have a long work experience and who are content-oriented, are pessimistic about the possibility to implement innovative ideas in Latvia's education. At the same time, teachers emphasize many

problems and discrepancies in Latvia's education which require flexibility in pedagogical work:

- 1) Teachers with a student/learning-centred paradigm underline such problems as
  - restriction of teachers' and pupils' freedom;
  - restriction in differentiation and individualization possibilities of a teaching process;
  - development of pupils' initiative, activities and independence, etc.
- 2) Teachers with a content-oriented paradigm mention the following needs:
  - need to develop new teaching aids;
  - improvement of school premises and technical resources;
  - increasing teachers' prestige and salaries;
  - perfection of teaching standards, etc.

Latvian teachers are often involved only in the implementation of the reforms and not in their design, which offers them very little control over the actual innovative process. Teachers need to perceive themselves as a part of the innovative process in school and society.

Analysing the factors fostering or hampering the motivation for teachers' innovative activity, the following regularities were formulated:

- the teachers' innovative activity and the stimulation of its motivation are united and interconnected;
- the teachers' motivation for innovative activity depends on the understanding of the changes in the role of a teacher, processes in society, sustainable development of the society and education. The level of teachers' pedagogical, psychological, and scientific maturity and their involvement in professional perfection is also an important feature;
- the teachers' motivation for innovative activity depends on the cooperation at several levels (with pupils, teachers, school administration, department of education, local government, etc.), on the competence of educational management staff, heads of local government, and on preparedness of other subjects for such activity, as well as on teachers' involvement in a creative self-development in a framework of professional creative activities and communication.

The criteria for determining teacher's motivation towards innovative work have been formulated from the research data:

- The involvement of teacher in innovative experimental research activity;
- The ability of the teacher for the active participation in innovative activity;
- The enhancement of productivity of teacher's creative activity per se;
- The authentic use of pedagogical technologies;
- The enhancement of teacher's cooperation with students and teachers;
- The promotion of teacher's qualification and self-education;
- The development of teacher's general culture;
- The engagement of teachers in exploring possibilities of innovative activity.

The stimulation of creativity takes place by considering pedagogical regularities for stimulating innovations:

- The results of stimulating teacher's innovative activity depend on teacher's motivation;

- The stimulation of teacher's motivation for innovative activity depends on the level of teacher's pedagogical skills;
- Stimulation of teacher's motivation towards innovative activity depends on teacher's cooperation with students and teachers;
- Stimulation of teacher's innovative work depends on the professional competence of the leader of the school;
- Teacher's motivation towards innovative work depends on the teachers' ability to be involved in creative work.

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## ARE TEACHERS TIRED OF RESPONSIBILITIES?

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### Abstract

*Estonian educational life is at a crossroad. Schools and their educational functions have become the focus of public discussion because of the worrisome tendencies in childhood and adolescent life (dropping out of school, deteriorating mental and physical health, increase in self-destructive behaviour, etc.). Many teachers are overtaken by tiredness and apathy. To the amazement of colleagues, even the best teachers are suffering from burnout and leaving school. What are the reasons for these phenomena?*

*The general context of this article is the problem of sustainability in education and, consequently, the sustainability of society. This paper focuses on how teachers perceive themselves as subjects and how they can promote learners' becoming subjects and is based on 48 narrative essays. The author has interpreted the outcomes relying on the works of A. Maslow, L. Vygotsky, V. Peavy, and M. Fullan.*

*The most significant conclusion is that there is a contradiction between the teachers' strong feeling of mission and responsibility which contrasts with the diminishing possibilities of implementing these priorities in their real work. Teachers assume they are accepted as decisive and responsible professionals. Furthermore, they expect other participants of educational processes to share responsibility.*

*Key words: teachers; being a subject; responsibility; co-operation; attitudes; sustainable development.*

*Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability (2005) starts with a reference to Agenda 21, Chapter 36, which says, that education alone will not move citizens and governments to create a more sustainable future. However, the next extract states: "Education is essential for moving toward a more sustainable future" (Guidelines..., 2005). Education alone cannot manage everything, but without education nothing can be managed. Education plays a key role in change.*

### Background

In Estonia, we have lived in a democratic society for some time now. Fundamental reorganisations have resulted in major improvements, but have also caused post-industrial strains and problems: "Contemporary society exploits formulas, which require effectiveness, speed and maximum achievements with minimum effort, which result in

stressful life” (Peavy, 2002:15). Unfortunately, the societal problems are also reflected at school, affecting the learning environment and teacher-student relations.

The attempt to interpret school life is based on two approaches, which share a common ground, but have different perspectives. The socio-cultural approach relies on an individual or group’s cultural background and social relations while participating in human activities. The most eminent representative of this approach, L.Vygotsky, has declared: “Human’s education is fully determined by social environment he grows and develops in” (Vygotsky, 2000: 199). Socialization helps children acquire the standards and norms of a particular society. Socialization introduces the child to her/his historically developed culture and personal cognitive system of meanings and values. Since the social and cultural conditioning of education has a temporal dimension, the impact of significant social changes of the last decades in Estonia must be considered. The socio-cultural approach is definitely applicable from the aspect of sustainable co-existence of society and the school.

The new trends in socio-dynamic approach represented by V.Peavy’s ideology of counselling have concentrated on supporting an individual’s subjective existence, however, it emphasizes that “problems are usually not in thinking or personal characteristics, but in the **context and human relations**” (Peavy, 2002: 23). Furthermore, Peavy adds that “human life is linguistic life and socio-dynamic counselling is “wordplay” (ibid.: 10). Hence, we are back in socio-cultural domains. In an educational setting, the socio-cultural approach helps to analyse the situation, its causes and dynamics. The socio-dynamic approach concentrates on how to interpret the surrounding environment and cope with it as a subject.

A.Maslow’s theory of needs (Maslow, 2002) is relevant to when considering the personality of students. In an educational context, it is necessary to emphasize the importance of fulfilling belonging, esteem and self-actualization needs.

Moreover, Maslow claims that “self-actualization is not the moment when we reach total bliss, but an intense process of continuous growth, a grievous task of collecting small accomplishments” (Maslow, 2002: 62). Analysing the background of emotions, motivation and activities, we should always consider the needs of humans. Even if teacher begins to doubt his or her work satisfaction or life in general, Maslow’s theory provides a secure basis for mapping the situation and seeking solutions.

The self-actualization of teachers is treated in the following generalization: “Teachers have no opportunity to delve into problems... If one is compelled to act in the name of abstract and controversial aims, it leads to bewilderment and frustration, and eventually quitting the endeavours” (Fullan, 2006: 29). There is surely food for thought for professionals studying the current educational situation in Estonia. Estonia’s transitional society is in a phase of searching for answers. However, the direction education should take still lacks a consensus. Unfortunately, life does not wait for anyone and people must find a philosophy that gives meaning and direction to their lives. The basic issue in philosophy is being a subject and this position also determines whether teachers will treat their students as subjects of self-development or objects to be manipulated by teachers. One of the most crucial steps in pedagogy is actually implementing the philosophy of dialogue between the equal subjects, which requires major changes in school culture and management. The phenomenon of dialogic communication is still to be interpreted on the level of teachers and organisations. There is an essential difference between when the person is an object of manipulation or when he/she is an acceptable partner. It is not only world play, but also the central idea of discourse.

## Research method and procedures

Since in hermeneutics, especially in a socio-dynamic context "... human beings are, first and foremost, "story-tellers", "renderers of meaning" and collectively active "creators of the world" (Peavy, 2002: 21), the research method chosen was analysis of narrative essays based on the method of grounded theory.

The research involved 25 elementary education students participating in the elective study course "Being a Subject in Education". The majority of the participants were class teachers (grades 1-6). Their professional teaching experience ranged from five months to 18 years, from small rural schools to big urban schools. Essay writing on the topics of "Supporting a Student's Development as a Subject" and "Teacher as a Subject in Contemporary Estonian School" was their writing assignments. Before assigning the topics, teachers were told that the writing is an exercise in self-reflection and that they would not be evaluated assigning marks to their essays.

The thematic utterances or extracts carrying the underlying idea of the research were numbered and coded on the first reading. Secondly, axial coding took place and, finally, selective coding was used (Strauss & Corbin, 1998). The article concentrates on the results of axial coding, which are represented by the categories of changed family education, teacher responsibility, characteristics of professional teacher, and a teacher as a subject. Summative statements and behavioural patterns are illustrated by teachers' quotations and followed by brackets where the first number stands for the teacher code and the number after the forward slash for the sequence number of the utterance in a particular essay.

The objective of the current research is to provide an overview of teacher opinions about the subjective self-realization in contemporary Estonia. Hence, responses to the following questions are expected:

- What changes have occurred in the social system concerning education and teacher roles?
- What factors obstruct the teachers' self-actualisation as subjects?
- Which positive developments and solutions are the teachers aware of?

## Results

Before analysing the research results, it should be noted that the essays were written by professional teachers who are finishing their speciality studies at the university. Such a symbiosis presupposes that the opinions expressed in the essays are based on both practical experience and freshly acquired theoretical knowledge, which might explain the expressed sensitive criticism when expectations and school reality do not coincide. Moreover, this shows potential for more conscious analysis and motivation necessary for changes. Interpreting the background, it is pleasant to see the wide perspective of teachers, which is also characterised by the first collective category.

### *Broken childhood*

The majority of teachers express a confident belief that early childhood experiences play a crucial role in the child's development and this depends mainly on parents. *As a house cannot choose its builder, a child cannot choose his parents* (T1/5). Furthermore,

parents cannot always choose the developmental environment suitable for children. Essays exemplify numerous shortcomings in early childhood, such as:

*Development requires possibilities of play and other activities. Without it the child cannot be put on a test, be active or creative (T14/18). A child should have a chance of taking roles, setting aims .... but how to put it into practice, if the child's own spaces have disappeared – bus stops and gasoline stations have become their meeting places. Children have become consumers, almost everything is ready-made ... Even the aims of children's activities are no longer their own and the ones offered by parents are often not accepted (T18/3, 24, 25).*

Upon analysing teacher opinions, a certain pattern of childhood prevails, where the horizon remains limited, both initiative and creativity are inhibited and a consumer mentality predominates. Maslow (1970) claims that children create themselves. However, this presupposes an inspiring environment and a child's activity. Childhood as a socio-cultural phenomenon starts at home and from its surroundings, and the effects of its impairment are visible at school. The teachers describe the need to encourage pupils to concentrate on and research things, and therefore, the current category also included the sub-categories of children's laziness of mind, which were continuously illustrated in the essays with the pupils spontaneous reaction: "I cannot be bothered". The resounding idea is teacher helplessness, since the causes of these factors cannot be altered and the outcomes of these unfavourable effects should be dealt with to a greater degree.

Another problem is parents. On the one hand, high expectations of home education are described, for example:

*Home is a place where somebody awaits and cares for you; there are specific house rules.... cultural values and norms as the obvious rules of life are acquired there... strength is gathered at home (T15/17-19).*

However, the reality is:

*Many parents have to admit that they know nothing about their children's doings and problems. It is claimed that they have everything – nice clothes, a clean home, and pocket money. But children are left alone with their troubles (T2/42, 43).*

Hence, the teacher acknowledges:

*School has been called the second home of the child. For some, even the first, since the home does not fulfil its tasks. If the parents cannot be responsible, the school must be (T11/15).*

Self-sacrificial solutions to different problems have been described, e.g.:

*If nobody has time at home and mother does half of the child's homework in order to get it over with, the teacher must work with the child after lessons (T11/37).*

Since home education is shattered and many things are wrong at such an early age, we can only rely on miracles at school. Such an emphasis is so dominant in different variations that it reminds us of a desperate defence reaction against all public declarations that accuse schools.

Concentrating on the analysis of parent-children relations from a socio-cultural perspective, we see that teacher expectations concerning parents are mostly connected to forming an understanding of values and behavioural norms. Unfortunately, the teachers stress that the children have been left alone, hence, the family's socializing role has been transferred to the teacher. The same conclusion can also be reached analysing the circumstances from a socio-dynamic aspect, as teachers describe situations where homes cannot even satisfy the needs of security and belonging. Children are not listened to, understood or supported; hence, they seek teacher attention. Teachers comprehend the pupils' needs; however, these are hard to meet in over-sized classes and the inability to attend to student needs may contribute to teacher burnout.

### *Burden of responsibility accompanying the role of class teacher*

Because the classroom teacher is the first and often the only teacher a child has interaction with at the beginning of her/his school experience, the teacher is in a unique position and responsibility, which cannot be shared by anybody. An experienced teacher writes:

*As a class teacher I have an obligation and responsibility to form basis for the children's knowledge and world view and develop their self-image. I have become their second mother, trustee, counsellor and supporter... and this continues for half a page! (T23/7-16).*

The categories dominating teachers' domain of responsibility were the following: information selection, independent thinking, self-analysis, setting goals, creativity, social skills, initiative, expression of interests and abilities, providing encouraging feedback, integrating different activities, etc. The teacher essays indicate important changes in emphasis, because the content of education and its basic values are socio-cultural phenomena. For decades the primary aim of education has been to provide knowledge often presented in authoritative manner. Today, however, teachers face the responsibility of developing the learner's self-image, social skills, skills of seeking and selecting information, etc. The essays reflect a contradiction between the declared tendencies and real situation:

*Estonian school is knowledge centred and developmental sides are left undeveloped (T14/29). We measure everybody with the same criteria, compare schools and classes, pupils and teachers, tests and national exams – everything and everybody! (T14/39).*

Paradoxically:

*The teacher is held responsible for pupils passing their tests and exams. Not the child or the parent (T20/25).*

Teachers see a contradiction between the subject-centred "point hunt" and the primary goal of education:

*Contemporary schools cannot manage with mere "subject specialists". Teachers do not teach a subject or class, but individuals, and besides being a teacher she/he is also an educator (T19/15).*

Unfortunately the educational aspirations are sacrificed to economics:

*Every child embodies reflections of past and present and potentials of future. To understand it we must delve into her/his hidden nature... (T2/32).*

A young male teacher describes:

*If there are 35-36 pupils in the class, one cannot notice nor respond to their worries and joys (T10/3).*

The essays reveal that the expectations towards teachers by school authorities and parents have broadened and changed within the educational situation. Responsibility can be taken for what you have chosen and decided on. However, the teacher is facing an unethical choice: on the one hand, she/he is responsible for currently valued personal development, social skills, etc. But in reality, schools and parents expect higher marks on state tests. Time sets limitations, curriculum is oversized and everything cannot be achieved at once. Such a schizophrenic splitting may cause burnout among conscientious teachers.

The essays of researched teachers reveal that they sense their mission and responsibility, however, the burden is too heavy to be carried alone. They consider it unfair that besides their primary mission, they only have duties and responsibilities, and the other parties have only expectations and rights. The teachers' behavioural pattern reminds one of a heroic soldier whose rear is weak and energy reserves ending. Surrendering, however, is not an option. When we speak about the category of responsibility on the theoretical level, we can apply both socio-cultural and socio-dynamic approaches. Based on the analysed essays by teachers, a society that mostly values external success, which is measured in numbers (e.g. results on state exams, amounts earned, etc.), may not be sustainable for a long time. When teachers, but also students are forced to operate in such conditions, they cannot develop. Socio-dynamic approaches stress that one should not concentrate on what is wrong, missing, or impossible, but on a constructive present, "...which includes existential realities with future possibilities, casting aside a perception of oneself as a helpless creature. .... the Socio-dynamic approach is empowering" (Peavy, 2002: 16). School as a social environment depends greatly on the teacher's personal mind and energy resources.

### *Contemporary problems related to being a teacher*

Teachers understand that personal coping abilities have become essential in changing circumstances:

*In present-day schools where children are very self-assured and parents demanding, the teacher must be a strong personality (T19/22, 23).*

The category of purposefulness was considered essential in the majority of essays. Moreover, the importance of values related to self-image was also stressed, especially in connection to choices and decision-making. Discussions about priorities were also included in the value category. For example:

*Daily decision-making has lately become more connected to planning the sequence of activities. Hence, school activities take priority and home affairs are cast aside (T9/5, 6).*

The frequent use of the expression “courage of decision-making” is especially noteworthy. For example:

*There are teachers, who work as oiled tools, even against their principles... There are also teachers, who are sincere, wise, and bold. I have seen them cry, but they have remained faithful to themselves (T13/2, 5).*

Another category, which was frequently mentioned in relation to decision-making, was the harmony of words and actions.

Moreover, the skills of self-analysis were regarded as crucial:

*If a person has self-critical thinking, she/he can take time out and look into her/himself or even observe her/himself from aside. In a difficult situation one should find its starting point and untie the problem, find the reasons, seek help from elsewhere, but not to surrender (T11/33, 34).*

A novice teacher writes:

*I recall a proverb – one learns from mistakes. I would say – one learns from experience (T13/26).*

The category evident in a majority of essays was developmental need, which was predominantly associated with in-service training, although not exclusively so. Novice teachers see possibilities in daily work as well:

*I consider myself lucky for living in this time of change because there is so much to learn from different people and situations. Why not to learn from children and their parents? (T13/11).*

Furthermore, the category of the ability to exert oneself was strongly represented. A young mother describes it rather colourfully:

*On numerous weekends, holidays and weekday evenings I am with my family, although actually I am not, i.e. “there is a picture, but there is no sound”, a mother must not be disturbed. As if a hurricane has run over me, and all because of my choice to become a teacher (T1/29).*

Matching role-derived high expectations and strains pertaining to personal wishes, convictions and energy resources is a difficult task in contemporary schools, which is illustrated by the widespread indication of teacher burnout in the studied essays. The wisdom of an experienced teacher is reflected in the following opinion:

*If work becomes an obsession for a teacher, the danger of burnout becomes a reality and we no longer can speak about effective teaching. A good teacher knows when and how to work and rest. She knows her value and by looking after herself, she also looks after the others, both at work and in her private life (T4/33-35).*

The teachers' essays also reveal concern about authoritarianism. Although the need for understanding and good relations, and respect for mental freedom is emphasized, the problem of forcing oneself or the textbook wisdom on pupils is more dominant. A novice teacher expresses:

*If the teacher gives orders and makes decisions, the child is merely a subordinate. The teacher is the person solely responsible for the outcomes. My primary idea is to study together, help the pupils to learn, explore, experience new things, at the same time, teach as little as possible! However, this is achievable only if we are partners with pupils (T4/8-10).*

The principle of partnership is recurrently mentioned, unfortunately with regret:

*But it does not work. Maybe the reason is in historic background ("Child talks when the hen pees" and other similar proverbs),... or an authoritarian adult does not want to confess her weaknesses and mistakes (T13/ 25, 26).*

At the same time we read that the problem is not in confessing one's mistakes but in attitudes:

*What kind of a person can I mould with my example and value appraisals (T17/25).*

Unfortunately this opinion exemplifies the paradigm of a dominating teacher, where child has to take the role of a manipulated object. However, alternative ideas expressed in the following extracts are encouraging:

*Teacher is the creator of **conditions**. If the teacher creates an environment, which is developing, secure, stimulating and motivating, she/he supports the development of a pupil as a subject (T4/14). We, the adults, should learn to trust the children, support and acknowledge their choices (T17/21).*

### *Teacher's self-actualisation as a subject*

Teachers can be divided into different and even contradicting groups depending on their opinions about being a subject. Although being a subject is thought to be a natural prerequisite of teaching, it is still stated that teachers feel powerless facing many external requirements and expectations. An experienced teacher summarises:

*Being a teacher, I must show initiative in preparing and conducting lessons, however, everything I have to do is dictated by authorities. Syllabi have to be completed and standard-determining tests have to be passed. Hence, the work must be strictly regulated and routine (T5/15-16).*

The effect of authoritarianism has also been mentioned in the essays. An experienced teacher describes the situation as lacking perspective and words a striking strategy of self-realization:

*If the teacher has always obeyed the orders and never sought explanations, she becomes a commander and the pupil a subordinate, who is not allowed to think, act, nor be responsible for outcomes... To encourage students to become subjects, teachers have to be subjects themselves and **I believe encouraging students as subjects in such a school is dummy education!** (T16/ 9, 10).*

A novice teacher writes:

*I belong to the indigo generation, who does not obey for obeying, but who perceives the world differently and is able to think and act independently. I am driven by selfishness and naivety. It is easy to follow a much-used path, but more difficult and rewarding to find one's own path (T9/22, 25).*

Furthermore, teachers included the category of developmental need in their essays:

*Coping with oneself is a continuous process, which makes us act and seek feedback: how to manage with the surroundings, what I have done wrong and what can be changed (T2/5, 6).*

However, feedback is often lacking:

*I go to work but what I do there interests nobody! Everything is wonderful if children are quiet, home assignments are in e-school on time and treated topics correspond to syllabus! Numerous papers must be filled in, however, their content should also interest somebody! (T16/15-17).*

Moreover, teachers' subjective activities require collegial co-operation, which would deepen their belief in the fairness of the actions, their solidarity and sense of security. The category of co-operation is connected to school as an organisation:

*The dominant mentality at school depends on its culture; whether one can talk about problems and whether these are constructively solved. Co-operation always offers better possibilities, however good a person is at her/his job... Criticism and tolerating it, asking for and offering help is also collaboration – co-operation is extremely valuable for teachers (T19, 14, 29, 30).*

Why do teachers write about the need for collaboration and not about positive co-operative experiences? Theory stresses: "The so called "classroom strains" draw teachers' attention to daily or short-term activities, exhaust their energy resources and limit the possibilities to contemplate on their activities" (Fullan, 2006: 24). "The multi-dimensional aspect of change is not perceived. Changes in objectives, behaviour, philosophy etc are on stake" (ibid.: 7). The author's research indicates that teachers consider their work to be strenuous and understand that the habit of relying on former individualistic experiences is no longer sustainable.

To generalise, the school reality assessed by the teachers has mainly remained authoritarian, despite the endeavours of making society and education more democratic. The socio-cultural approach interprets it as an identity crisis. The necessity for a subject who thinks, makes decisions, and acts according to one's convictions is inevitable, however, in a school context it can be hard to achieve. Collegial co-operation and contemporary organisational culture are needed to achieve the necessary changes.

## Conclusion

The social background of a teacher's work has considerably changed. Teachers sense the high expectations, responsibility, and pressure on their ability to cope. However, the possibilities of successful fulfilment of their mission seem to be gradually fading, especially if the current social system and subject-object paradigm in education pre-

vails. The mere transfer of knowledge demanded by the curriculum into the learner's head, which would guarantee success in standard-determining tests and state exams, is no longer sustainable.

Teachers, who take the responsibility for the welfare of children and schools, cannot manage any more. Besides conscientiousness and dedication, burnout and alienation are described. Teacher solitude and tiredness of facing requirements that cannot be responded to in the contemporary school context are the resounding themes of the essays. However, this does not satisfy the teachers with a sense of mission – in reality, meaningful objectives and solutions are looked for.

The essays reflect a clear need for the attention of colleagues and authorities, for feedback, and acknowledgement. Teachers expect to be respected as subjects with independent thinking, decision-making, and sense of responsibility. Moreover, they expect other parties, parents and school authorities, to take responsibility for the aspects that depend on them. Teachers think that the anticipated results could be achieved through meaningful, supportive, and encouraging collaboration. Some problems highlighted by the teachers require changes of the state's educational policy, since the current reforms (curricula, organisation of state exams) have proven to be too short-term and not sustainable.

Agenda 21 stresses: "The core themes of education for sustainability include life-long learning, interdisciplinary education, partnerships, multicultural education and empowerment. Special attention should also be paid to the training of teachers, youth leaders and other educators" (*Guidelines...2005*: 15).

The teacher essays give ample food for thought concerning teacher training, where besides general subjects and didactics, more attention ought to be paid to teachers' personal coping abilities, starting from the teacher's personal educational philosophy and finishing with coping with burnout. Training school leaders, especially in the matters related to organisational behaviour, introducing and implementing successful personnel administration, is another priority.

The lack of sustainability in education is expensive. Consequently, changes in the educational sphere are inevitable. Fortunately research results indicate that despite the tiring sense of responsibility, teachers have maintained their creativity and curiosity. Pupils, teachers, as well as all of society deserve better future.

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## **PREPARING CHILDREN FOR SCHOOL: THE PERSPECTIVE OF SUSTAINABILITY**

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### **Abstract**

*This study analyses different aspects of upbringing and development concerned with preparing pre-school children for school. The focus is on justifying child development within the pre-school educational environment with elements of sustainability in order to better prepare students for school. Education in pre-school environments should be seen as a synergy of the affective and cognitive spheres of children. The authors refer primarily to the significant contribution provided in the sphere of pre-school education by different Russian psychologists and educators. The results of this study indicate that if the pre-school curriculum includes elements of sustainability, the process of preparing children for school is more effective and children may possibly be more successful at school.*

*Key words: pre-school education; readiness for school; sustainable development; educational environment.*

### **Introduction**

Sustainability is now recognized as a key factor in the development of the education system (Corcoran & Wals, 1999), and today's political and practical considerations oblige educators to consider the best way to embed it into the education and curricula at all levels of education. Education contributes to the development of a sustainable community, economy and social system. In order to support a sustainability-oriented educational environment, teachers must first be responsible for the implications of their educational practices and need to understand how these actions affect the community. Pre-school education needs to be oriented towards sustainability and stress the importance of holistic and interdisciplinary learning. Research shows how pre-school education can become more sustainable if it incorporates sustainability into the pre-school curriculum (Salite, 2002; Salite et al., 2004). The discussion offered by the authors supports their claim that reconciling sustainability and development requires a complex holistic approach that goes beyond the frames of traditional pre-school educational practices. Educators need to design programs related to sustainable development in preschool with a view towards a more holistic approach that permits sustainable educational practices to be implemented.

This article presents some practical suggestions for initiating sustainable education in pre-school, based on the following principles, which include: 1) developing a school culture committed to the principles of sustainable development; 2) involving the whole school community including teachers, students, administrative staff, and parents; 3) promoting a shift within the broader community towards more sustainable practices and processes; 4) improving teaching practices and learner outcomes, 5) including values education, cultural and environmental change, 6) encouraging pre-schoolers to achieve social, environmental, educational and economic outcomes (Wheeler & Bijur, 2000). Pre-school curricula establish the criteria necessary to enter school. These requirements can be based exclusively on modern comprehensive pedagogy, yet still contain important elements concerned with sustainability. Today, educational practice in Latvia still largely ignores aspects related to sustainability. Fortunately, we can find a few pre-school establishments where the aspects of sustainability are integrated in the educational environment. Results of the given research indicate to the effectiveness of application of sustainability elements for preparing pre-school children for school.

### **Theoretical overview of the child's readiness for school**

Going to school for the first time represents an important change in the life and activities of a child. The transition to a new environment sometimes causes emotional discomfort because of the child's intellectual and personality development. However, professionals can distinguish many general and specific qualities needed to successfully adapt to the school environment, some of which include: 1) appropriate age-level interaction and cooperation, 2) a positive attitude to other students, 3) positive expectations from the adults, and 4) empathy towards others. In order to undertake the role of the first grader, the specific attributes include the acceptance of the new social status, the awareness of idea and criteria of volition and self-evaluation, and courage to ask questions (Божович, 1995; Гуткина, 2002).

Traditionally, the most important criteria of child's school readiness is his/her level of mental development. Vygotsky (1984a, 1984b, 1991b), however, was among the first researchers to propose that school readiness does not imply quantitative knowledge. Instead, he argued that only the adequate development of psychic functions could ensure the successful beginning of school studies.

Empirical studies (Божович, 1968, 1995; Витцлак, 1986; Гальперин, 1985; Jirasek, 2003) have shown that only healthy children with sufficient functional readiness can successfully begin school. This is usually referred to as "school maturity". Otherwise, the study load may lead to a worsening of a child's health and a decline of operational capability. Psychologists (Кравцова, 1993; Леонтьев, 1972; Лунге & Тувикиене, 1982; Мыттус, 1982; Сэрд, 1982) have designed an instrument to determine child readiness for school. Upon entering school, a child has to be sufficiently mature physically, socially, cognitively, affectively, and volitionally.

The main dimensions determining whether a child is ready for the study process are the levels of morphological, functional, and mental development (Выготский, 1966, 1983, 1991a, 1991b; Breuer & Weuffen, 1986). It is important, however, to recognize that psychological age reflects general psychic development. In other words, the early expression of certain abilities is not an indicator of school readiness.

School life involves a child opening him/herself to a different world. According to Bozhovich (1995), the major features of pre-school children are imagination, pictorial thinking, self-awareness, and pupil's inner position. These features ground the intentionality determining the self-monitoring of cognition and behaviour.

The analysis of works by Anastasi (1996), Kees (1983), and Witzlack (1986) on evaluation of child's readiness for school allows to distinguish three basic components in it, namely, 1) cognitive readiness, 2) social readiness, and 3) volitional readiness.

The major indicator of readiness to follow the school programme is not knowledge and abilities, but the level of development of the child's *cognitive sphere*.

The characteristics of perception are expressed in selectivity of perceptive activities. Preschool children have to learn the hand and eye coordination and certain rational ways of studying the external qualities of objects, which helps them to perceive and analyse different complicated objects rationally. Upon entering school, children intentionally begin paying attention (Кравцова, 1993). Children begin to recognize the different activities of attention: focused, sustained, selective, alternating, and divided attention. Unintentional attention will not become intentional without an adult intervening to help organise a child's attention by introducing new and varied kinds of activities.

Memory development is very important during the first stage of studies. In order to comprehend the curriculum successfully, the memory of older preschool children should also become intentional. This gives children an opportunity to retain, store, and reproduce study material effectively (Эльконин, 1995).

The development of thought plays a significant role in a child's learning process. Older pre-school children have to develop both imaginative and activity-based thinking. The thinking pattern of pre-school children is based on manipulations of real objects or their representations, which is why their activity-based thinking is expressed in practical activities, but their imaginative thinking develops in cognitive activities.

Vygotsky (1983) has indicated that the development of the cognitive and affective spheres is essential for preparing a pre-school child for school. Social readiness, a willingness to learn, and learning achievements significantly determine a child's school readiness.

Child's willingness to study at school is related to the formation of a new construct (Эльконин, 1981, 1995), which is defined as "pupil's inner position" (Божович, 1968, 1995). These are the aspects of a child's behaviour that manifest themselves in the process of acquiring knowledge and in developing relationships with adults.

A child's emotions also play a significant role in determining his/her positive or negative attitude towards school. As some researchers indicate (Бугрименко & Цукерман, 1987, 1994; Давыдов, 1972; Нежнова, 1988а, 1988b; Салмина, 1988), the willingness of a child to acquire a new social status – that of a pupil – has much to do with a child:

- understanding the importance of study process;
- respecting teachers and peers;
- having a positive attitude towards a book as a source of knowledge.

Social readiness towards school also includes a child's communicability and communication skills. A child has to be able to cooperate with classmates and teachers. Every child has to acquire skills to join the child's community and work together with other children, as well as be able to communicate with adults. In this case, if the adult is attentive towards the child, the child is developing skills to differentiate the appropriateness of communication in different situations.

Development of *volition* is an important aspect in children's pre-school development and is closely related to the development of their affective sphere (Божович & Славина, 1979). The development of volition is an important indicator of readiness for school studies. Older pre-school children have to acquire major components of volitional activity, which includes being able to:

- set the aims;
- make decisions;
- work out and implement a plan;
- overcome obstacles;
- evaluate the result of his/her action.

Willingness to attend school and achieve academic success depends on the degree a child has developed intentional behaviour, i.e. the child's ability to sustain self-control in his/her activities and behaviour. Children with this ability display individually and internally conditioned behaviour.

### **Pre-school education in the context of sustainability**

Latvia presently has several school entry requirements, including ABC skills, the ability to write and count, as well as other general skills. These are objective demands stated in pre-school curriculum. In Latvia, there are presently two typical approaches for meeting these demands. One can be viewed as a traditional environment where certain time is provided for the acquisition of curriculum. The schedule is divided in classes, which are similar to classes at school. The traditional approach underlines teacher directed classes where less initiative and creativity is left for the child. The activity of children is directed by a teacher and they must follow teacher instructions. Knowledge is transmitted directly to the child. In a sustainable environment, the teacher provides opportunities for inquiry where students can find their own solutions to problems. Several pre-schools in the Latgale region of Latvia already have introduced the integrated elements of sustainability to prepare children for school (Salite, 2002). This approach involves several elements involved in a child's development and upbringing: 1) social and value-oriented development, 2) cognitive development, and 3) aesthetic development.

**Social and value-oriented development** may be considered the most important to reinforce with pre-school children as this developmental aim is closely integrated with all other spheres of upbringing and development in pre-school education. For example, within the framework of sustainability, the theme "Introducing the surrounding world" (Part 1 of the theme) as an element of the developmental program has been introduced in pre-school through topics on social relationships, learning about professions, certain historical events and facts, and other phenomena of contemporary social reality. The topics of other lessons offer learning the basics of safety issues, basic knowledge about the structure and functions of human body, etc.

In the youngest and middle pre-school age groups, pre-school teachers organise specifically designed games and situations to help develop values. Story telling and role play, i.e. the modelling of social relationships, offer significant opportunities for social and value-based development. In the older and final pre-school age groups, children receive special lessons called "social development", which help them form notions about the norms and rules of behaviour, traditions, and culture of communication.

**Cognitive development** within the pre-school curriculum of upbringing and development “Introducing the surrounding world” (Part 2 of the theme) is fostered by lessons where children get to know nature’s objects and phenomena, as well as material culture. Discussions and excursions give the opportunity for the children to observe natural phenomena, plants and animals, flow of traffic, and jobs. The thematic corners are equipped with the educational games and materials. Some kindergartens have a nature corner where children can observe animal behaviour and take care of them. The teacher makes a great use of audio and visual materials including pictures, illustrations, video films, soundtracks, etc. This helps children develop the notions of colour, form, and size, as well as to understand the peculiarities of different materials – the foundation for the development of cognitive processes.

**Aesthetic development** is an essential component in pre-school education. While integrating the elements of sustainability, a major stress is on the creation of a stimulating development-oriented environment. A sustainability-oriented educational environment includes a number of basic components that are required for the aesthetic development of children. Consequently, the children are exposed to a classroom environment containing natural elements and objects (the natural landscape of the pre-school, the small pets and plants in the classroom, etc). Specific conditions for sport and recreation activities, games, and artistic activities are also promoted. The environment has to be organised in a way that a child can actively interact with it and creatively transform it.

Based on the above-mentioned theoretical views on the psychological readiness of pre-school children to begin formal studies, the aim of this study is to show that preparing children for school within the environment oriented toward sustainability is more effective than preparing children for school in traditional educational environment.

## Methods of the study

The participants of the study were children from Daugavpils city kindergartens. Two different pre-schools were selected for the purpose of the research, and each group of children in these kindergartens consisted of 45 children. The upbringing and learning process of one group was organized according to a traditional educational environment without elements of sustainability, while the other group of children was embedded in an educational environment interwoven with the elements of sustainability. The elements of sustainability were introduced in this group within the timeframe of two years. During the test period, the age of children varied from 6.0 to 7.0 years. None of the children in this study had previously attended school.

The following methods were used:

1. The task “**House**” (Гуткина, 2002) requires the child to copy an example of a house. This method permits professionals to evaluate the sensory motor development of children. The development of fine motor skills and the coordination of hand movements, as well as the development of direct attentiveness were observed. Children were interested in performing the tasks; therefore, this did not cause any difficulties for them.
2. “**Yes and No**” (Гуткина, 2002), where the child was not allowed to use ‘yes’ or ‘no’ in responding to questions. According to the game rules, children needed to answer researcher questions (for example: Is it dark at night?) without using the

- words ‘yes’ or ‘no.’ The authors tested how quickly children could make decisions in a difficult situation, determine the number of words, and how well they could use synonyms. To complete this task, the children needed to exercise self-control.
3. **“Boots”** (Гуткина, 2002), where the child had to put boots on different animals according to the animal’s number of legs (for example, the goose has two legs). This task reveals the mathematical skills of children as well as their knowledge about their surroundings.
  4. **“Sequence of events”** (Блейхер & Крук, 1986), where four disordered pictures were offered to the children who then had to correctly order them. This task develops children’s logical thinking, deductive skills, and level of thought. The pictures depict actions in fairy tales, nature scenes and episodes about the lives of animals. This task helps children acquire the specifics of everyday life from the people most familiar to them.
  5. With the help of the task **“Phonetic hide-and-peek”** (Гуткина, 2002), the authors determined if children have an adequate perception of phonetics and phonematic listening skills of their native language. In this activity, children must repeat the sounds after the adult.
  6. **Structured interview** to determine the place of social and cognitive motives within the overall structure of motives (Гуткина, 2002). This activity helps discover the different motives of children: Is the primary motive of the child to play or to learn? This activity permits the child to select between two activities. The teacher offers to play with toys familiar to the child or, together with the researcher, read unknown book. If a child chooses reading the book, his/her dominating motive is learning.

These tasks allow researchers to distinguish three aspects of school readiness within the context of sustainable development: social (orientation toward the surroundings and relationships), cognitive (features of inquiry), and emotional (managing one’s emotional world).

The tasks for children were offered during a learning process in pre-school within the framework of the official pre-school curriculum. Classes were held every day within the time line of one month. Confidentiality was respected although the general results were shared with pre-school teachers without mentioning the names of children. All methods were applied in a context of play.

## Results of the research

### *The children from the environment without the elements of sustainability*

Using this method, which allowed us to determine the dominance of play or cognition motifs, we discovered that the cognitive motif was dominant among 69% of children, while the play motif was dominant in 31% of the children tested. The psychological construct of the “pupil’s inner position” was detected among 41% of future first-graders, while 59% of children did not show the “pupil’s inner position”. It is important to note that only a few children expressed an unwillingness to attend school. In general, children wished to go to school and they were primarily motivated to study. Some of the answers compiled about why children wanted to attend school were:

*I'm tired to be in kindergarten. It will be better for me at school.  
I want to attend school so that I won't be forced to sleep during the day.  
There are many children in school and I will have new friends.  
If I go to school, I will have grown up. That means that I will be allowed to  
walk on my own...*

Some of the answers show that children want to attend a school not so much to study, but to change routines of their daily lives they do not like very much. These answers point to the lack of study motivation.

When performing the task "House", 36% of children succeeded reproducing (re-drawing) the sample house without mistakes. Inability to copy the given sample points not only to a weaker study motivation, but also to a weaker hand and eye coordination and to the lack of diligence in solving such tasks.

When performing the task "Yes and No", 62% of children succeeded in completing the task, showing that these children have already become familiar with games with rules, or had learnt to play.

Results of the "Boots" activity revealed that 41% of the children successfully completed the task, 25% partly succeeded, and 34% of the children failed. These results are significant because they reveal that fewer than half of children succeeded in a task related to generalisation, although the ability to generalise is a prerequisite to begin formal studies.

When performing the task "Event sequence", 52% of children succeeded with the task. They could reconstruct the sequence of events represented by the disordered pictures correctly and create a story according to these pictures. Children who have developed the process of generalisation, perception, and speech do relatively well in this task. The difference between the number children who succeeded and failed on this task is not statistically significant.

Working on the task "Phonetic hide-and-see", 71% of children were able to find corresponding sounds in words correctly and 29% of children failed to do so. Possibly, this 29% of future first-graders may have difficulties in their studies because they were taught to read using phonetic analysis of words. It is also certain that pupils with weak phonetic audition will often commit errors when writing.

Research shows that some children from this group do not yet possess a study motivation. Although study motivation, expressed as "need for inquiry" is expressed very clearly, this is insufficient to insure successful performance in the study process; social motifs are also required.

Weak development of the generalisation process is a characteristic of this sample group's intellectual sphere. Speech in this group is also underdeveloped.

### *The children from the environment with the elements of sustainability*

Data indicates that the cognitive motif dominates among 71% of children, while the play motif is prevalent among 29% of given sample group. The "pupil's inner position" is developed among 52% of children, while 48% of children need to develop further. Some children in both groups are willing to go to school not to study, but because of the opportunity to change the order of things in their lives.

The percentage of children succeeded with the task the “House” is 56%, while 44% were unable to solve the task. Mistakes are usually caused by a careless attitude about performing these tasks or by underdeveloped sensomotoric coordination (Венгер, 1981, 1988).

The results of the method “Yes and No” show that 31% children in this group are unable to follow instructions. This percentage is quite high, especially taking into account that the task is performed in the form of an interesting game.

The results of the “Boots” method show that 63% of children in this group solved the task on generalisation well enough, 19% of children partly succeed, and 18% of children failed to do so.

Children proved to do well on the “Event sequence” task with 66% of the children in this group doing well, while 34% performed unsatisfactorily. The “Boots” and “Event sequence” tasks allowed us to judge an individual child’s development of generalisation. Similar to those in the previous group, these children did well “Phonetic hide-and-seek” method, which helps monitor the development of phonetic audition. In this case, 82% of children performed the task correctly, and 18% of children made mistakes, i.e. could not define the right sound.

Our research shows that in the group of children educated in an environment without elements of sustainability, only 6% of children were ready for the school. This percentage increased to 17% for children who received schooling with elements of sustainability.

Table 1. Effectiveness of task performance reflecting school readiness of children in a pre-school educational environment with and without the elements of sustainability

Methods	Educational environment without the elements of sustainability (%)	Educational environment with the elements of sustainability (%)
1. The dominance of inquiry motif	69	71
2. “Pupil’s inner position”	41	52
3. “House”	36	56
4. “Yes and No”	62	69
5. “Boots”	41	63
6. “Sequence of events”	52	66
7. “Phonetic hide-and-seek”	71	82
<b>Total percentage of students prepared for school</b>	<b>6</b>	<b>17</b>

The results presented in Table 1 indicate the dominance of cognitive motives and also both compared groups contain the similar numbers of children with the dominant cognitive motives. The “pupil’s inner position” is expressed stronger among children of the group with the elements of sustainability. Children from the educational environment with the elements of sustainability were better able to work with samples than children from the group without the elements of sustainability. This analysis shows that children from groups both with and without elements of sustainability successfully perform easy

work according to rules. The children from the group with elements of sustainability have a better developed generalization skill, which shows their curiosity towards the surrounding world. This analysis indicates that the level of logical thinking is higher among the children of the group with elements of sustainability. Also, phonetic audition is better developed among the children of the group with elements of sustainability. Children perceive and sense the surrounding world clearer and feel more comfortable in it.

## Discussion

Calculating the average of the different tasks shows that only 6% of children from the group who studied in the environment without elements of sustainability are completely ready for school. Evidently, 94% of children from this group have not reached this school readiness. In the other group of children who studied in the environment with elements of sustainability, 17% children appeared to be ready for school studies. Consequently, 83% of these children were not ready for formal schooling either. There were, however, significant differences between these groups with regard the performance of specific tasks.

The research data shows that “pupils’ inner position” in the group who studied in the environment with elements of sustainability is more expressed. Consequently, these children have a higher level of readiness in the affective and cognitive spheres (Вьготский, 1983), in the generalisation and logical thinking, and in speech (phonetic audition).

The identical level of achievement for groups with and without elements of sustainability has only been detected in solving two tasks: defining the dominance of study or play motif in the affective sphere, and “Yes and No”, which defines the ability to act according to rules. These similarities may be because cognitive motivation is dominant among seven-year-old children. Similar results in “Yes and No” activity may be explained by the fact that by the age of seven, a child with a relevantly developed cognitive need is able to play with rules. The development of a child is smoother if educators create a proper environment for developing child’s biological potential. This problem has been widely studied and is known in pedagogical practice, the evidence of which is the process of preparation for school.

Why did we decide to offer a solution of this issue from the perspective of sustainability? The process of preparation has a lasting effect on the life of a child. Successful pre-school preparation can positively influence how a child perceives him/herself, the environment, and events. If school preparation takes place in the context of sustainability, then it may provide a context where a child may have greater success and achievement motivation. To achieve something for a child means to achieve a goal and to overcome difficulties.

The results of this study indicate that if the pre-school curriculum includes elements of sustainability, the process of preparing children for school is more effective and children may possibly be more successful at school.

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## **SOCIAL ASPECTS OF EDUCATION FOR SUSTAINABLE DEVELOPMENT IN PRIMARY SCHOOL IN ESTONIA**

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### **Abstract**

*The purpose of the article is to analyse the circumstances of applying of Education for Sustainable Development (ESD) in Estonian educational actuality. Empirical part of the study comprehends a comparative content analysis of UNECE strategy of ESD and the chapters of the text of the Estonian National Curriculum valid from 2002. The discussion concentrates on the social aspects of ESD because their significance was pointed out by the experts of ESD. The topic of the article is confined to the issues concerning the primary education, i.e. the grades from 1st to 3rd. Conclusions are made about the opportunities to apply ESD more effectively than at present. Statements of experts on textbooks and curriculum have been taken into account as additional sources besides the documentary analysis.*

**Key words:** ESD; primary school; social competences; curriculum; integration; participation.

### **Idea of Education for Sustainable Development in educational reality of Estonia**

There is a longer historical tradition of the subject providing *the knowledge of the native country* and it needs to be mentioned here. The concept of *the knowledge of the native country* integrated the teaching of natural sciences, culture and history of the homeplace on the level accessible for the primary school pupils. There have been three periods, 1920-1930, then beginning from 1957 to the end of 1960 and again in 1990's, when the study of the homeplace environment and culture as a whole was formulated as a special subject at primary school level. The activities included in the subject integrated knowledge about nature processes and human life. The ecological approach has been a central idea here. As a rule, the active methods of teaching, group work, small research projects, outdoor courses have had an important place in the organising of this study course. In 1920-30 Johannes Käis was the founder and leader of the movement. In the 1950's this person was officially condemned by Soviet regime because of his influence in bourgeois Estonia, but his colleagues used his ideas and materials without his name creating the new wave of the textbooks for the study of homeplace as a subject in curriculum (Eisen, 1985).

In the beginning of 1990s the work of Johannes Käis was openly followed by curriculum developers and by the activity of the society of Johannes Käis. Of course, there are a great number of authors, writing about the study of the native country in addition to Käis: Jüri Parijõgi, Valter Horm, Teet Lunts, Jaan Eilart, Heinrich Veroman, Alma Toom, Orest Niinemäe, Osvald Nilson, Aleks Vallner, Inge Riisalo, Kaja Saar, Aino Valgmaa, Mikk Sarv, Imbi Henno, Inge Timoshtshuk, and others.

Thus, when the idea of ESD reached Estonian educational consciousness, it was ready for the principles of ESD. In 1996, the first National Curriculum for the independent Estonian school included four integrating themes in addition to traditional subjects, and one of them was called “Environment”. During the next years, in 1997-1998 Estonian presenters were engaged in the international round tables and other meetings developing the idea of ESD and composing the documents like Baltic 21, Haga Declaration, etc. (Henno, 2004). The renewed curriculum (2002) reflected the significance of the ESD discussion renaming the integrating theme as “Environment and Sustainable Development”. In 2003, the expert on ESD in Estonian Ministry of Education Imbi Henno wrote her MA thesis about the conditions of ESD in Estonian schools. She pointed out, studying the teachers’ views on the ESD, that the environmental problems are seen primarily as a knowledge problem (Henno, 2004: 36). Teachers do not value sufficiently cultural and social aspects (including ethics) in the ESD. According to Henno, “The majority of Estonian teachers belong to the group that represents the tradition of “normative environmental education”. They are engaged in fact based and theoretical teaching and mostly direct their attention to affecting students’ consumptions habits. Only 30% of teachers saw their professional role in developing the social skills of a responsible citizen” (Henno, 2005: 20). In 2005, the Estonian State Strategy of Sustainable Development was composed by experts of different fields and was a cooperative effort. There are the guidelines for many institutions, including the education system, for development to the year 2030.

The Ministry of Education tried to reform the Curriculum to the 2007, but the plan was not realised. The new versions of curriculum were strongly criticized, by among others environmental activists, because of the diminishing of the role of the school subject Natural Sciences. At the end of 2006, the presenters of environmental organisations balloted the persons for the titles “The Friend of the Environment” and “The Enemy of the Environment”, and the Minister of Education and Science was named by the last, negative title. The decision was explained by a concrete reproach noting that the State Strategy of ESD was not taken into account as a source for the curriculum (Mailis, 2007). The situation concerning the ESD seems to be uncertain. There are long traditions of environmental studies in the school from one side, and the confusion with the curriculum and problems with the teachers’ attitude from another side. Hence, two messages from educational reality bring about the study introduced here:

- the social aspect of ESD does not receive enough attention from teachers;
- curriculum development is not influenced by the strategy of ESD, formulated as a state document.

The questions for the analysis are:

- How does the National Curriculum reflect the ideas of ESD, concerning the social aspect?
- Which statements would be of most value to include in the new version of curriculum?

The analysis will be limited by the first school stage (grades 1st to 3rd).

## Initial documents about the social components of ESD

The experts in ESD have noted the significance of the social skills and ethics, the ESD materials will be treated here as the aspect of the social competencies, concerned about in primary education. What is the concept of ESD offered at the primary level of education? The central task of primary education should be supporting the development of pupils' self-concept and learning skills. Social aspects of ESD like the ideas about communication, working together, and meta-cognition of learning activities are related to this general aim (Belousa, 2002; Henno, 2004; Salite, 2002).

The concept of ESD reflects a general way of thinking, engaging the education for all age groups and learning as life long process, joining the traditional and scientific knowledge and the flow of actual information about changing nature and society. Clarification of the social aspects of ESD departs from the definitions of sustainable development (SD) and of the education for SD. The interpretation of ESD depends on the wideness of concept of SD. The aims of the SD are not fixed, rather there is a process of changes with interaction of processes in the nature and society (Belousa, 2002).

One of the most commonly cited definitions of SD comes from the report *Our Common Future* (Brundtland, 1987), defining SD as the development that "...meets the needs of the present without compromising the ability of future generations to meet their own needs". A social idea is the heart of the definition: the central point of the understanding of the development is thinking about the past and the future, about one's generation as a joining chain between the different generations, about the task of the member of the society to find her/his place in the flow of time.

Although the historical roots of ESD lie in environmental education, the topic of ESD is much wider today (Henno, 2004). While many authors point out that the prime understanding of SD concerns the notion of environment (Shallcross, 2003; Salite, 2002; Salite & Pipere, 2006; and others), the definition of *Our Common Future* guides the thoughts to the concept of ESD as the concept of education of historical development of humankind.

## Empirical study: comparative analysis of the UNECE Strategy of ESD (2004) and the Estonian National Curriculum (2002)

The analysis aimed to emphasise the items in the text of the UNECE Strategy of ESD (2004) belonging to the category of social aspects. The paragraphs meeting the strategy in the general part and subject chapters of the National Curriculum were searched to answer the following questions:

- 1) Do the ideas expressed in the strategy of ESD presented in the National Curriculum concern the level of primary education?
- 2) What kind of social aspects of ESD are accentuated by different subject chapters in the National Curriculum?

As a general description the vision of the strategy was compared with the general competences expected to be acquired during the primary stage. The vision of the strategy confirms that education has

- to strengthen the ability of individuals and groups to make decisions,
- to support the revelation of critical thinking and consciousness,
- to evoke the forming of new ideas and conceptions and new teaching methods and means (UNECE, 2004).

General competences for primary level of school include:

- the understanding, that the people are different, that the differences have to be accepted;
- the desire to learn, the joy to know more and to be able to do more;
- to solve the conflicts peacefully;
- to be able to learn both individually and in the group, to accept the companion;
- to dispose oneself to succeeding with school duties, to interpret one's activities realizing learning tasks (Põhikooli, 2002).

The connection between the vision of the strategy and curriculum competences might be accepted as indirect, because the goals of the education mentioned in the vision are related to the initial skills and features of young pupil mentioned in curriculum. Obviously the understanding of differences and the ability to work in the group helps to form a readiness to take part in different working groups; obviously thinking about people's differences and reflecting of one's activities helps to form the presumptions for critical thinking; obviously the joy of learning and disposition to learning success helps growth into a sustainable learner.

Principles appointed in the UNECE Strategy of ESD in part III allow more detailed comparison with textual units of curriculum. The principles of ESD which can be interpreted as the social characteristic are given in following:

17. The principle of valuing the traditional knowledge;
18. The principle to stimulate the systematic, critical and creative thinking and reflection;
23. The principle of ESD to be oriented to ethic, including problems of solidarity and relationship between generations;
24. The principle of the connection of the study in classroom with social and work experience outside of classroom;
25. The principle of ESD to include the improvement of communication culture respecting of each other and methods supporting the participation in initiatives;
26. The principle of the realisation of the learning process by the active methods like projects, research, outdoor activities because the ESD presumes cooperation and partnership of different groups of interests.

Additionally to the principles listed here paragraph 29 was picked up from the chapter IV (Influences to the education): *The principle of the educational institutions to follow the ideas SD as whole; the learning environment has to be formed by the demands of sustainability.*

The principles mentioned here, were juxtaposed with the chapters of the National Curriculum treatment of the subjects in primary grades.

General competences, which have to be acquired during the first stage, mostly appear as social competences. The specifications are (the numbers cited from the text of curriculum):

- 3) ... pupil relates carefully to the implements created by peoples' work;
- 4) ... protects the nature;
- 6) ... understands the meaning of the ownership (my-ours-others);
- 7) ... apprehends that the wishes and opportunities of people are different; recognises the right to be different;
- 8) ... knows that nobody should be derided or badgered;

- 9) ... values the family and school collective;
- 10) ... knows and honours the home and country, state and state symbols;
- 11) and 18) ... likes to study, is able to study both independently and in the group; is able to listen to a school mate and to accept his/her opinion;
- 13) ... values creativity;
- 14) ... tends to solve conflicts peacefully;
- 16) ... is able to avoid dangerous situations, knows how to call help;
- 20) ... is able to dispose her/himself to cope with the task.

The chapters of subjects reflect the social aspects of the ESD in several motifs (see Table 1).

Table 1. The social aspects of the ESD in the chapters of the Estonian National Curriculum

I. Language teaching	<ol style="list-style-type: none"> <li>1) communication skills;</li> <li>2) expressing of personal opinion;</li> <li>3) comprehension and interpretation of the text in the relation author-text-reader/listener;</li> <li>4) creative expression;</li> <li>5) composing of applied text (letter, message, instruction);</li> <li>6) elements of the media text;</li> <li>7) folklore.</li> </ol>
II. Natural science	<ol style="list-style-type: none"> <li>1) knowing home surroundings;</li> <li>2) practical activities in the nature;</li> <li>3) solving problems;</li> <li>4) interest in regional studies;</li> <li>5) experience of the beauty of nature;</li> <li>6) health care;</li> <li>7) description of the phenomena of the nature.</li> </ol>
III. Social science	<ol style="list-style-type: none"> <li>1) Myself; my rights and duties;</li> <li>2) My body; healthy life style;</li> <li>3) Me and We, my and our needs, caring for each other;</li> <li>4) good and bad behaviour, etiquette;</li> <li>5) team work: attention, consideration each other, sharing of functions and responsibility; refusal to take part in harmful activity;</li> <li>6) myself and my family and relatives; works and traditions at home;</li> <li>7) sources of information, advertisement; planning of time; ownership – my, ours, others; money: earning and use;</li> <li>8) safety: behaviour in dangerous situations (fire, harmful substances, natural catastrophes);</li> <li>9) our country, state; national richness: nature, people, culture, education.</li> </ol>
IV. Music	<ol style="list-style-type: none"> <li>1) national traditions;</li> <li>2) music as means to cognize the world and to express oneself;</li> <li>3) music and the body: breathing, bearing;</li> <li>4) common song repertory.</li> </ol>

*Sequel to Table 1 see on p. 64.*

*Sequel to Table 1.*

V. Art studies	1) acquaintance with the implements and materials; 2) childlike art happenings – syncretistic approach to art study; 3) ethnographic and applied art; 4) knowledge of the architecture and art of the home place; 5) depicting of live and inanimate nature; 6) safe use of materials, aesthetic approach to the surroundings.
VI. Physical education	1) activity in the nature, environmental awareness; 2) team work; accepting each other; 3) hygiene, safety; 4) improvisation, folklore dance, games.
VII. Manual training	1) sustainable use of materials and implements; 2) reading of instructions, planning one's work; 3) critical attitude towards work result; 4) working individually and in the group; 5) valuing of the narrative traditions.

The subject of mathematics was not included in the list here, because the chapter on maths in curriculum 2002 does not include motifs, which could be interpreted in relation to the social skills.

There is the opportunity to find the corresponding units of the text in the National Curriculum for each of principles mentioned in the document of UNECE. For example principle 17 – valuing the traditional knowledge could be interpreted as equivalent to general competences 3 (relates carefully to the things created by people's work), 9 (values the family), 10 (knows and honours the home traditions). Also the same motifs would be found in chapters related to different subjects like language teaching (7, knowing of folklore); nature science (4, interest to regional studies); social science (6, works and traditions at home; 8, knowledge about safety; 9, national richness); music (1, national traditions; 4, common songs repertory); art studies (3, ethnographic art; 4, knowledge of architecture and art of the homeplace); physical education (4, folklore dances and games); manual training (5, valuing of national traditions).

As a result of the comparison we can draw the conclusion that all principles treating the social aspects of teaching mentioned in the document of UNECE might be connected with the corresponding parts of curriculum which more or less directly or indirectly express the same ideas. The connections between the principles of the Strategy and the parts of the curriculum are expressed in the Table 2.

Consequently, the principles treated as significant of social aspects in ESD are presented to show how they match the National Curriculum for primary level general competences and the subjects identified by chapters.

The main conclusion from the analysis comparing the demands of the initial sources of ESD and current curriculum is, that the social aspects of ESD are pointed up in the curriculum both in the chapter on general competences and in the chapters of the different subjects of primary school stage. Thus, there is no reason to accuse anybody of ignoring the guidelines of ESD at the level of the curriculum.

Table 2. Social aspects in the principles of ESD (UNECE, 2004) and corresponding motifs in the National Curriculum (2002)

Principles of ESD	General competences	Language teaching	Natural science	Social science	Music	Art	Physical education	Manual training
17	3, 9, 10	7	4	6, 8, 9	1, 4	3, 4	4	5
18	7, 11	2, 4, 6	3	1, 4, 5, 7, 8	2	2, 6	2	2
23	8, 9, 10, 11	1, 7	3	1, 2, 3, 4, 6, 7, 9	1, 4	3, 4	1	1, 4, 5
24	4, 16	1, 6	1, 2, 4	4, 5, 6, 7, 8, 9	1	3, 4, 5	2	4
25	7, 8, 14, 18	1, 5	2, 4	1, 3, 4, 5, 6, 8	2	1	1, 4	1
26	16, 18	6, 7	4, 6	4, 6, 7, 8	1, 4	2, 4	2	5
29	–	–	5	2, 3, 7	–	7	2	2

## The conclusion and questions

As the study of the curriculum text clarifies, the social aspects of ESD are presented in curriculum. Obviously there is the necessity to analyse the materials of all other school stages in details, to find the opportunities to apply the principles of ESD.

If the National Curriculum reflects the ideas of ESD as demonstrated above, how these ideas are developed in curricula adapted by different schools to their local conditions and educational traditions? What kind of material is guiding the teachers' everyday practice in realising the principles of ESD? Which support might be expected from the National Curriculum? There is the question of curricular and teachers' authority in the practical organisation of the ESD (Campbell, 2006).

Many projects and movements in Estonian education work offer very good examples of the realisation of ESD: The Golden Shoe, Project of Healthy Food, Blue Flag Movement, Eco-Schools and Eco-Kindergartens, "Newspaper in the Lesson of Environment", "Children and Birds", contest of small projects of environmental education, etc. The fact that many primary school pupils and even kindergarten children take part in different practical projects demonstrates that the children really can be active agents. As mentioned by educational philosophers and theorists of ESD, applying a constructivist approach and the discourse of learning society and working in projects in co-operation with NGO and other institutions influences the general interpretation of the concept of childhood (Shallcross, 2003; Masschelein, 2001; Brady, 2007). Children have to be interpreted as citizens and not as the immature persons, waiting in the vestibule of the real life. Mostly projects are introduced and realized via Internet (Liivas, 2005; Toots, 2004). There are a lot of opportunities in computer based education to develop pupils' communication and participation skills, creativity, independency, responsibility, meta-cognition and critical thinking (Brady, 2007).

Researchers Salite and Pipere have mentioned, that the ideas of sustainability are not accepted or understood enough, so that many educational legislative documents do not mention SD, and even in the National Development Plan (of Latvia) this concept is presented mostly as a catch phrase (Salite & Pipere, 2006). As one of the authors of Estonian Strategy for Sustainable Development Ivar Puura confirms, to create the mo-

tivation, learning what to do must be coupled with understanding in rational and emotional level, and why it is done (Puura, 2005). A relevant basis for communicating environmental values is building up close emotional and cognitive links with natural objects and landscapes, especially in the younger age. The analysis here presents some ideas about applying of ideas of sustainability on the primary school level. Surely the promoters of ESD have to point out the very concrete cases of the ESD on the grass root level in everyday school practice, which would stimulate the progress also on the level of educational state documents.

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## THE AGENTIVE ROLE OF CHILDREN'S VIEWS IN SUSTAINABLE EDUCATION

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### Abstract

*The environment and peoples' ideas of the environment are intertwined in the Education for Sustainable Development (ESD). The environment has an effect on the educational content and people have an effect on the environment. Thus, sustainable education includes producing culture by children and with children. Sustainable learning should include finding ways to consider the effects of actions. The theoretic framework presented in the article was operationalized and studied in four Finnish kindergartens. The results bring children forward as producers of educational content. Children's views have an effect on the educational setting. In agentive learning children learn things that they themselves have been taking part creating. In discussion, the emerging roles of a teacher for ESD are considered. To be balanced, ESD may not only consider the equilibrium between accommodation and assimilation, but also the equilibrium between adaptation and agency.*

**Key words:** *education for sustainable development; adaptation; accommodation; assimilation; agency.*

When development meets the needs of the present without compromising the ability of future generations to meet their own needs (see Morris, 2004; Brundtland Commission, 1987), it calls for people to seize the opportunity for needed change. The re-orientation should not be done separately (see United Nations' Commission on Sustainable Development, 1996) but must be embedded in the whole educational process.

As McCormick and his colleagues put it, Education for Sustainable Development (ESD) is more than education *about* sustainable development. It is increasingly recognized that rather than focusing on the transfer of knowledge, education *for* sustainable development needs to enhance the capacity of individuals and organizations in dealing with change. Learning about how to influence systems and participate in decisions are, moreover, the underlying goals of ESD (see McCormick, Mühlhäuser, Nordén, Hansson, Fong, Arnfalk, Karlsson & Pigretti, 2005). The more accustomed the children are to participating in the processes of their surroundings, the more prepared they will be for participating also as adults (see Reunamo, 2004).

The agentive role of children's views has become a central issue for ESD. Santone (2003) states, that to bring about a secure future, students need to be fully engaged in

creating a better world. Sustainability education should equip students to become informed, caring, and effective citizens. Children confront questions that are important to Sustainable Development (SD): How can we improve our community? How do personal choices affect others? Sustainability education envisions citizens not only as voting and obeying the law, but also as actively contributing to bringing about a sustainable world (cf. Santone, 2003). To ensure a prosperous and peaceful world for future generations it is not enough that children know how to change the world. Their knowledge and visions have an agitive nature in themselves. The purpose of the article is to connect the philosophical roots of the very idea of development to the concrete consequences of these views for educational practice. The purpose of the article is to give glimpses about the connections between our views and the way the environment takes shape. The environmental change in this study concerns mainly the socially constructed environment. Children's ideas and orientation change our culture. Our ways of seeing education have an effect on the educational settings and on children too. To clarify the relationship between ideas and environmental change, the model of agency of perception has been introduced (see Reunamo, in press). This theoretical orientation is outlined in Figure 1.

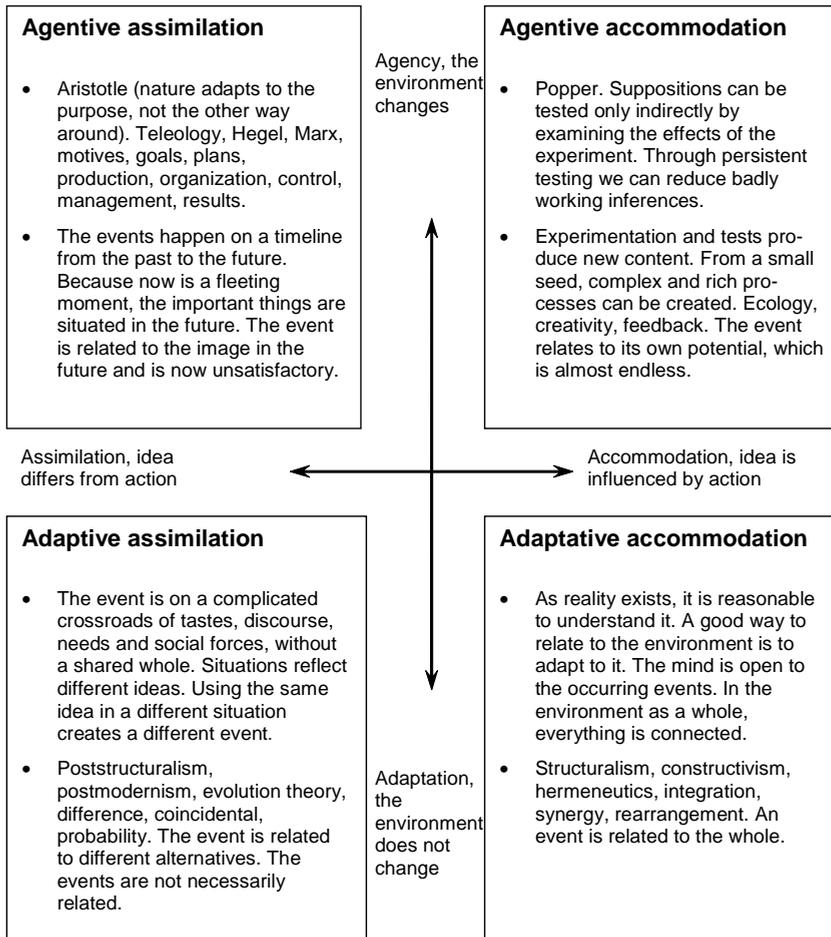


Figure 1. Different views of the relationships between perception and environmental change

The first, horizontal continuum concerns the formation of ideas. Do the experiences require changes in the structure of the mental outlook (accommodation, openness) or are they processed as fitting in with the existing mental structure (assimilation, closed views)? The second, vertical continuum is characterized as that of adaptation-agency. On this continuum, change is central. Nevertheless, is the change caused by action seen as happening through internalization, where the environmental change is not considered? Further, is perception accompanied by the seeds for environmental change?

According to Piaget, *accommodation* is compensation for discrepancy between the mental image and the object (cf. Gruber & Vonèche, 1995: 216). The environment puts pressure on ideas. However, we can also consider people's views as changing the structures of the environment, which means that both people's views and the environment change at the same time. Piaget is not interested in this productive nature of thought. We can consider accommodation also from the environment's point of view: The ecosystem on the large scale, for example, must adapt to the pressures for change caused by the existence of civilization.

*Assimilation* is the integration of external objects into parts of oneself (Gruber & Vonèche, 1995: 216). We try to fit the environment into our own mental outlook. However, assimilation is not just about incorporating environmental elements and interaction into our existing mental structures, because assimilation also means that we use the environment in ways that our outlooks suggest.

According to Kitchener (1986: 54-61), *adaptation* serves as the equilibrium (balance) between assimilation and accommodation. Adaptation is here conceived as the dialogue between internal outlooks and our perceptions. We find an internal dissonance or an external deficiency, which requires either our internal change or an environmental change.

*Agency* refers to action that has an effect on something. In a broad sense, agency involves the real world consequences of actions in the environment. According to Piaget (1978: 159), there are two kinds of evolution, an organizing evolution and a modifying evolution. For our purposes, it is enough to say that agency induces change through actions. As Cooney and Selman (1980) point out, children's constructions have a connection to children's social acting. The agentive nature of children's actions and views has been discussed at length (see Reunamo, 1988; James & Prout, 1997: 4-5; Solberg, 1997: 126-127; Corsaro, 1997). Bodrova and Leong (2006) point out that to develop self-regulation children need to engage in regulating others too.

*Adaptive accommodation* is a central point of reference in current theoretical and practical discussion about childhood and the development of children's thinking. The Piagetian idea of evolution originates in his study from the development of species. Piaget sees us as self-regulating systems, which use mental images as the tools in adaptation. When we concentrate our attention on the child's ideas changing, the environment looks stable. The theory of child development has examples of the consequences of this type of concentration. Because the environment exists, the task is to become acquainted with it and to cope with it better. In genetic epistemology, the question is: How do the representations of environmental operations become internalized? We need to understand the static environment. We look at the environment through the images matched by the meanings produced during the course of our lives. When we study ideas, meaning or perception, different interpretations usually refer to different modes of understanding, not to a different reality produced by that understanding.

When discussing assimilation as the act of confirming of environmental experiences with personal mental structures, and adaptation as the interchange of personal and environmental meanings, *adaptive assimilation* refers to the application of one's own images in the given environment. Adaptive assimilation does not consider the environmental change. The schemas are closed; they do not change during interaction. Thus, as the environment does not seem to change, our use of two mental images means that we act in two different ways. It is possible to assimilate new knowledge into the existing knowledge structures without changing the existing structures. Thus, we can have information that is not related in any way and we can acquire new information without changes during the process. As the relations of this knowledge remain unclear, the knowledge is often restricted for use within the specific situation or the specific context within which it was acquired. As the old knowledge remains in force, new revolutionary views do not result in change but in chaos. In assimilative adaptation, the human view of reality starts to resemble that of poststructuralism (cf. Peters, 2001), where the event is on a complicated crossroads of preferences, discourse, needs, and social forces. Therefore, evolution does not look like development but appears as a fragmentation of choices and possibilities.

The term 'agentive' indicates the human impact on something, while assimilation is the application of ideas without adjusting or modifying them. Thus *agentive assimilation* here indicates an environmental change according to a certain view. According to Aristotle, nature adapts to the intention, not on the contrary. Teleological (Aristotelian) examination and anticipation of the future is important (see Bulajeva, Duoblienė, & Targamadžė, 2004: 24). As Breuer (1985: 71) puts it, intentionality is a concept, that not only has an effect on development, but also has a genetic nature of its own. In this way, human intentional action can be examined more broadly. As Galperin observes (cf. Arievidtch & Haenen, 2005), the ability of looking ahead (orientation) is a precondition to and even a prime aspect of learning. When teleological thinking is interpreted in such a way that the ideas' real value or nature is situated in the future, things happening right now seem to be inadequately developed. Important things are not located here and now, but exist in the forthcoming future. This emphasizes the importance of human intentions and motives.

*Agentive accommodation* refers to the change of both the environment and the mental representations of it. Accommodation refers to the relatedness of action and the image of that action. The image is not just applied here, but it is open for environmental feedback, that is, it is open to change. In accommodation, there is a mutual contact between people and the environment. Agentive accommodation is a process, which also results in perceptible changes caused by symbolic representations. Planning humans can use tools invented by other planners. When we test our ideas, it causes an environmental change, which can to some extent be anticipated, but as the environment changes, it must be monitored constantly in order to keep up with the changes. Here, we are approaching the ecological way of seeing nature, wherein it is the change in the relations among all participants which is important. Not only species change, but their relationships with others change (cf. Costall, 1986: 11). The tighter the integration between ideas and actions, the more conscious the change is.

According to Popper (cf. Popper & Eccles, 1984), by testing our hypotheses and evaluating the effects of this testing we can arrive at an increasingly valid picture of reality and eliminate wrong ideas as we test them. According to Popper, the perception

of our continuous test results is not a mere copy of the environment, but an outcome of a creative interaction. In Popper's view, theory is always situation-specific and it is related to the historical and cultural process. When we test the properties of new things, our conception has an effect on the tests we carry out. Popper defines cultural evolution as a possible result of the emergence of mind through natural selection (Popper & Eccles, 1984).

Long ago, Fröbel tightly interwove the aspects of perception and process. Both Fröbel's and Piaget's thinking were influenced by the concept of evolving nature. When Piaget looked at the development of knowledge processes in the environment, Fröbel saw the knowledge processes changing the environmental development process itself. According to Fröbel, life is an evolutionary process, and education enriches this evolution. Human beings can thus discover a more profound idea of their own evolution and, in such a manner, the idea can become an evolutionary property in itself (cf. Curtis & Boulton, 1958: 374-375). Thus Fröbel can be seen as an early advocate of agentive accommodation.

We need to redefine sustainable education and sustainable learning. Sustainable education should include the production of culture together with children. Sustainable learning should thus include finding ways to consider the effects of actions. But how do we study the agentive nature of children's views?

## Methods

Often the issues in educational or psychological research concern children's development or learning. The change in children is studied. To study the effects of children's ideas and orientation on the environment we need to turn the traditional research model upside down. Here we study children's views and then we study how these views are reflected in children's actions and the environment.

Altogether 73 children from four randomly selected kindergartens took part in the research. The children were 3-7 years old and lived in the Helsinki region. In the interview, the children encountered fifteen different kindergarten situations (cf. Reunamo, 2007). They were asked what they would do in that situation. Altogether there were 1005 answers. Some of the questions are presented in Figure 2.

In the observation, systematic sampling was used. The children were observed in their normal kindergarten setting between 8.00 and 12.00 hours. Altogether there were 1679 observations. In each observation there were several things to observe (cf. Reunamo, 2007). The third part of the research data consisted of teachers' and parents' evaluation of the children (cf. Reunamo, 2007).

All three parts of the research were done independently. The children were the same in all three parts of research. Teachers and parents evaluated children separately and did not know of each other's evaluations. The observation and interviews were done by the author of this article who did not know about the teachers' and parents' evaluations.

All 1005 answers were classified in one of the four categories:

1. Adaptively accommodative answers;
2. Adaptively assimilative answers;
3. Agentively assimilative answers;
4. Agentively accommodative answers.

Examples of children's answers in different categories can be seen in Figure 2 in the results section. Classification of the answers was not always easy and 114 answers had to be left without any classification at all. To ensure independence between observation and interviews, the classification was done question by question and the classifier did not know which child had answered which question. The reliability of the research is questionable because it can not be compared with other classifiers' evaluations.

Children's answers in each category were counted. The distribution of answers in different categories describes the child's typical way of seeing kindergarten situations. In addition, children's actions during observation were added up. The distribution of children's different actions in different kindergarten situations describes the children's typical way of acting in the kindergarten setting and the environmental change that takes place.

While observing, children's closest child contact was written down. At the time of data input the average of all closest child contacts' variables was added. This way a profile of a typical child contact was provided.

The data gives opportunity to study the children's way of acting in the kindergarten and the environmental change produced. Thus, it is possible to study the correlations between children's views and environmental change. The correlations used in the results section are partial correlations, in which the effects of children's age and gender are controlled. This means that children's development over the years do not interfere with the connections. We have turned the almost self-evident study of children's development or learning upside down. Now we can examine the connection between children's views and the action in an educational setting. In this way, we are now able to study children's views and the content these views produce.

## Results

First, in Figure 2 the children's way of viewing the kindergarten settings is reflected.

The categories are tied to the theoretic model (cf. Figure 1). The purpose of the categorization has been to operationalize the model. The underlying concepts of the basic four generalizations presented in Figure 1 can be seen in Figure 2 as examples of specific real life situations perceived by children. In answers that were classified as *adaptive and accommodative*, children were considering the given situation openly but did not try to change it. In the answers that were classified as *adaptive and assimilative*, the children did not consider the situation openly. Instead they saw themselves as doing something else or withdrawing from the situation. In answers that were classified as *agentive and assimilative*, the children did not open up to consider the situation. Instead they saw themselves as doing something that changed the conditions of the situation. In answers that were classified as *agentive and accommodative*, children considered the situation openly but added a new element to the conditions of the situation.

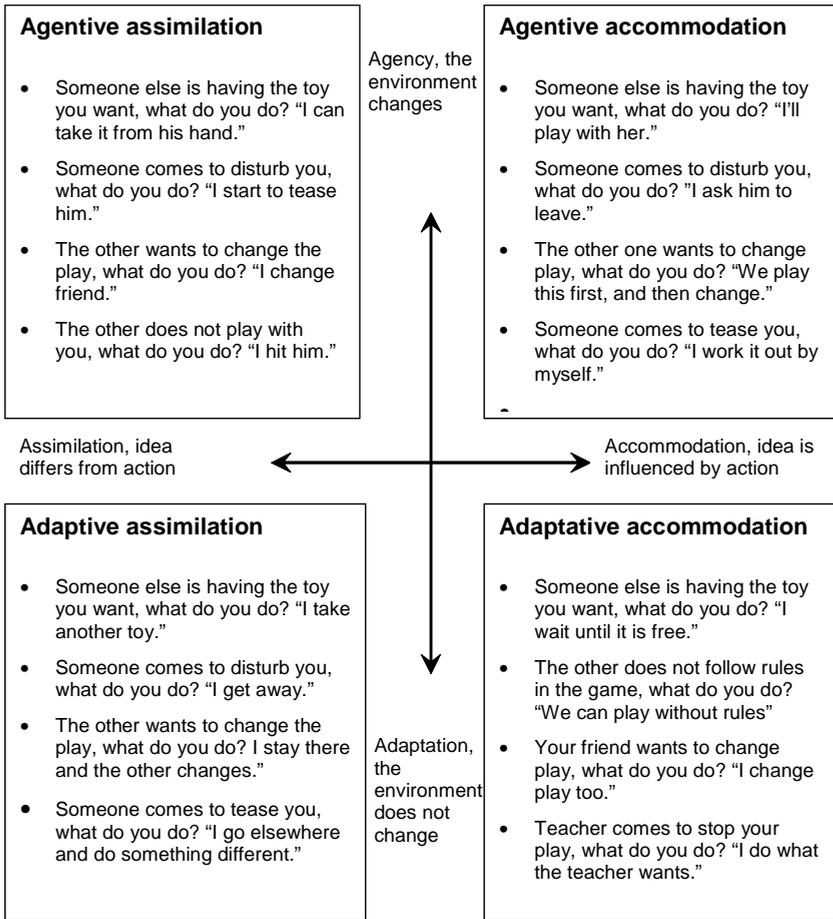


Figure 2. Children’s differing views about educational settings

Now as we are familiar with the children’s views, it is possible to view the partial correlations of children’s views and environmental change (for the original partial correlations of children’s views and changes in the situations cf. Reunamo, 2007). All three parts of research results were correlated with each other. The conclusions of the correlations are condensed in Figure 3.

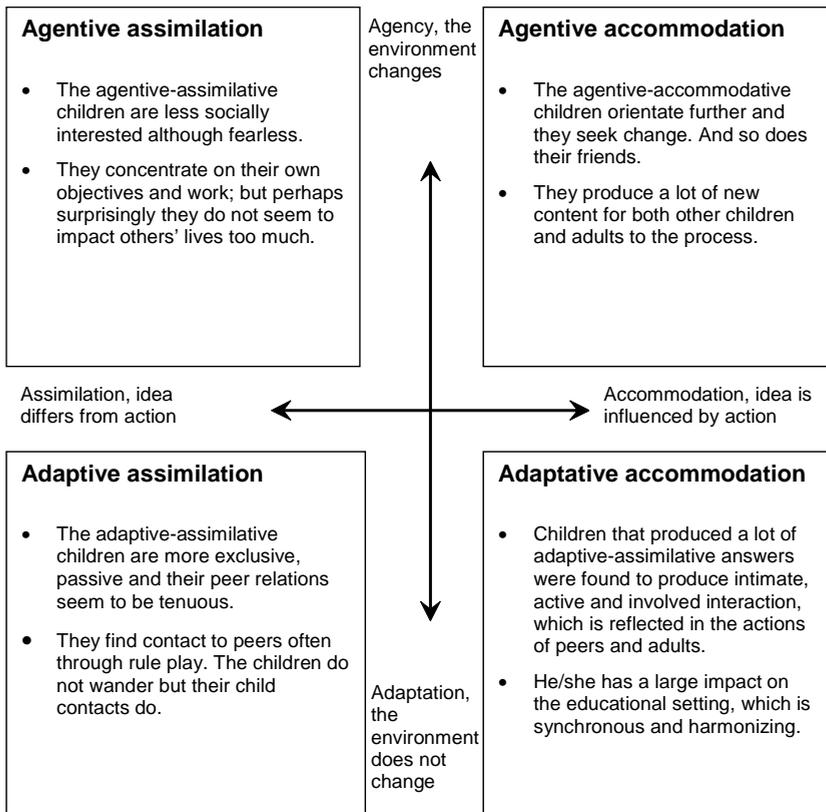


Figure 3. The agency of children's views in the educational setting

## Discussion

The research design needs some consideration. In different research methodology different epistemological assumptions about the nature of scientific knowledge and how to acquire it are made. In sustainable education the agency of children's perception mixes up the boundaries between quantitative and qualitative research. In this research children seem to have many of the features assumed in qualitative research (cf. Gall, Gall & Borg, 2007: 32). Here the social reality is constructed by the participants in it and it is continuously constructed in local situations. Human intentions play a major role in explaining causal relationships among social phenomena. In the same time such research carries many features of quantitative research (cf. Gall, Gall & Borg, 2007: 32). The research design tries to take an objective, detached stance toward research participants and their setting. The representative samples are studied. Behavior and other observable phenomena are studied in a natural setting, the theory is operationalized, variables are discerned, and preconceived concepts and theories to determine the selective collection of data were used. Even statistical inference procedures to generalize findings from a sample to a defined population have been used. The study described here suggests reconsideration of the research methodology: qualitative ESD research has to take seriously the different influences of different interpretations while in quan-

titative ESD research children's interpretations need to be considered also as independent variables.

The agentive role of children's views has some consequences on ESD. The child not only perceives how to change the environment, the perception has an element of change in itself. The different ways children look at environmental change have different consequences. The educator of SD can no more think of children's answers as simply being right or wrong, because children's views embed changes in the reality questioned. When children are perceived as producers of educational content (cf. Reunamo & Nurmilaakso, 2006), there is nothing to be learned before something has been produced. Children perceiving environmental change differently live differently and they produce different environmental change. The hermeneutic (cf. Castle, 2006) manner of interpretation has to be revised to include the interpretation's impact. Also adapting and accommodative ways of looking at environmental change have an influence on the educational setting, maybe even more so. The research results reported here are all correlations, which means that the studied phenomena affect each other. Because the other correlative variables are always children's views, none of the correlations would exist without children's views. We have to conclude that the phenomena studied here can only be perceived in relation to children's views. Furthermore, only things that engage in mutual exchange can be perceived; the existing elements leave no trace. In ESD we have to evaluate the production and refinement of the tools for development. Children learn things they themselves have been developing. The learning is effective when children see that their ideas have something to do with real change. As children's ideas reveal their real power in educational content production, we as educators have to act on it. The educator does not need to get in touch with children's ideas only to understand, but to stay in touch with the educational content. ESD means that the mind emerges as part of reality. Humanity, culture, and civilization can be seen as ways to regard change.

The evolving view of learning and education also has consequences on ESD. The agentive nature of children's perception puts ESD and educators in a new role. Education not only exhibits a balance between accommodation and assimilation but also exhibits a balance between adaptation and agency. Figure 4 condenses the essence of the different roles of the ESD teacher. The teacher needs to act within the range of all four dimensions in order to embed all aspects of teaching.

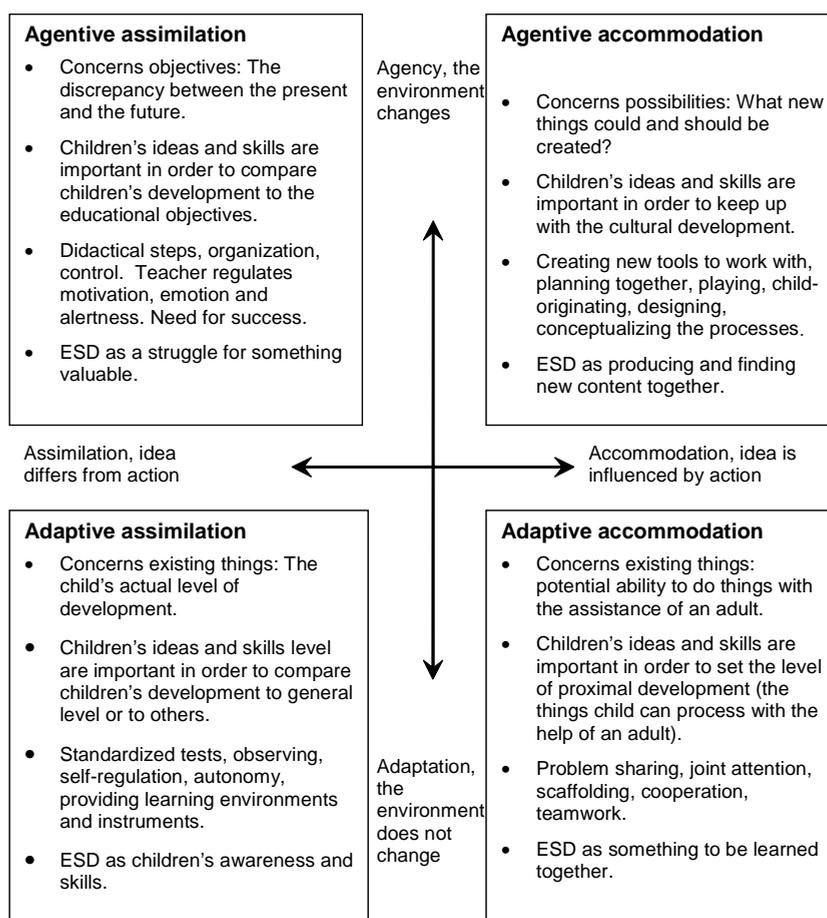


Figure 4. The different roles of the ESD teacher

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