Discourse and Communication for Sustainable Education

Editorial

This issue of the interdisciplinary journal "Discourse and Communication for Sustainable Education" consists of five papers. I would like to thank all the members of the Editorial board and also the language editors. My thanks are also due to the authors of the papers.

The paper by Gedžūne and her colleagues highlights how the participants of educational action research engaged in the process of generating ecological wisdom of insight for sustainability. The authors conclude that it is a wisdom that pre-service teachers need so as to be able to help their pupils become responsible members of the community of life and actors of change for a sustainable future.

The paper by Kazlauskiene and her colleagues is orientated towards generalisation of the experiences of informing society in the European Union countries in the context of sustainable development.

The paper by Cakula focuses on the new perspectives of education in connection with the change of life paradigm. The present research seeks to find out what study methods and technology support can be used for developing students' creative experience in the context of education for sustainable development.

The paper Czapla and Berlińska provides an analysis of formal educational documents in the context of the sustainable development notion. On the grounds of the sustainable development definition and in the context of UNECE Strategy of Education for Sustainable Development, the list of direct and indirect linguistic indicators was created. To count the key words, the text editor Adobe Reader 9.0 was used.

The paper by Zariņa and Belousa summarises the best practical experience in meaningful development of reading literacy. The conclusion is reached that meaningful development of reading literacy occurs in an environment specially designed by teachers with constructivism as its theoretical basis.

Astrīda Skrinda

EDUCATIONAL ACTION RESEARCH TO GENERATE ECOLOGICAL WISDOM OF INSIGHT FOR INCLUSION AND SUSTAINABILITY

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Abstract

This study relates the experience of educational action research with pre-service teachers aimed at exploring their views on ecological identity, which is considered the basis for a person's life activity, and its orientation towards inclusion in or exclusion from the global community of life. Through gradual opening of communicative space and participation in critical discourse, research participants became involved in the cycles of reflection on their experiences of interaction with the social and natural world to reveal the features of individual and collective ecological identity that they consider most characteristic for themselves and their community. The present study describes how, through exploration of ecological identity which was found to have four dimensions (cognitive, affective, axiological and conative) as well as a clearly perceived orientation towards apprehended belonging to the community of life and its support system, the participants of educational action research engaged in the process of generating ecological wisdom of insight for sustainability (person's inclusion in the living world based on inclusive interrelations with the global community of life and its support system). We argue that it is a wisdom that pre-service teachers need so as to be able to help their pupils become responsible members of the community of life and actors of change for a sustainable future.

Key words: *educational action research, pre-service teachers, ecological identity, communicative space, ecological wisdom of insight*

Introduction

Contemporary pedagogic and scientific literature highlights the need for a new, meaningful vision of education for the 21st century, which would strengthen the currently broken link between humans and other elements of our world (O'Sullivan, 1999). Civilisation is now facing the inevitable consequences of alienation from nature and disregard for the wellbeing of all life, concern for which is eclipsed by preoccupation with worshiping money.

O'Sullivan (ibid.) argues that humans need to renounce the idea of conquering the world and aim for inclusion in the community of all life on the Earth.

The tendencies towards egoism, possessiveness, ownership, superiority, or what Buber (2002) calls I/it attitude towards the world, can be attributed to the influence of the modernist paradigm. As pointed out by Salīte & Klepere (2003), I/it relationships reflect the ontological structure of fear and disrespect, they are subject/object relations in which everything is considered merely a tool for satisfaction of person's subjective needs. They are characterised by estrangement, anthropocentric and egocentric detachment and existential separation, loss of harmony in the relations with the ecosphere, and ecophobia (ibid.). The current crisis of sustainability is actually brought about by a crisis of the mind (Reason, 2007) – our way of thinking of and perceiving the world which we are part of. Transformative learning theory would call it a crisis in human frames of reference (Cranton, 2000; Mezirow, 2000; Ahteenmaki-Pelkonen, 2002). O'Sullivan (1999) points out that the modernist paradigm with its industrial lifestyle, economic globalisation and spatial and psychological alienation (exclusion) from the Earth has exhausted itself. In his opinion, we are now standing on the threshold of an evolutionary transformation. It has become clear that in order to survive and sustain the planet as a habitat for future generations, we need to change our habits of mind and ensuing life activity. We are in need of a transformation of our frames of reference (Kitchenham, 2008). As O'Sullivan (1999) puts it, life requires something more than mechanics, something more than mere commercial value expressed in terms of profit. It needs inspiration, presence, beauty, care and community. In other words, we need to learn how to live in a mutually complementary rather than destructive way, strive for deeply felt inclusion in the great community of life and its support system, in the social and natural world. We have to become aware of the co-evolutionary relationship between person and nature (Salīte, 1993), our mutual interdependence and inexhaustible need for one another. What we need are subject/subject or I/thou (Buber, 2002) relations, community with the world, a developed ecological "self" and ecological identity (Salīte & Klepere, 2003).

Moore (2005) expresses her concern for the quality of relations between the human and more-than-human world. We have failed to retain awareness of the inextricable links that bind the elements of the ecosphere of which we are part. Such lack of awareness has led us to adopting consumerist frames of reference – personal paradigms for perceiving, making sense of the world and acting within it (Mezirow, 2000). Moore (2005) believes in the potential of transformative learning to highlight the accents of sustainability in education, higher education in particular. In her opinion, transformative learning is the key to developing what she calls ecological literacy. It would permit to replace the dominant market paradigm, which envisages educating for the market, with a sustainability paradigm, which envisages awareness of the mutual interconnectedness of everything in this world and human responsibility for preserving the fragile balance of these interrelations, in line with such core values as life, justice, peace and inclusion.

In the course of history, humanity has been differently interpreted in the context of nations, ethnical groups, international organisations and even a global community; yet the present state of relationships between person and nature requires humans to become aware of themselves as species among other species (O'Sullivan, 1999). The western industrialist tradition highlights the superiority of Man by regarding the Earth as an object detached

from the human "self", which can therefore be manipulated and exploited for satisfaction of our needs (ibid.). Therefore, we now face an urgent need for a new level of relationships between person and nature. We need to achieve a transformation from subject-object relations to subject-subject relations; from what Buber (2002) calls I/it attitude to an I/thou attitude, which is grounded in dialogue, equality, respect and recognising the value and worth of the other (Buber, 2002; DeLue, 2006; Rofrano, 2007; Ashman & Lawler, 2008).

O'Sullivan (1999) speaks of the need to discover our individual 'selves' in close relationship with the 'Great Self' around us. He therefore suggests that education should address such issues as cosmology, wellbeing of humans and Earth in the community of life, because only through the outer world humans can fill their inner world and realise their humanness. A similar position is held by Brereton (2009) who draws on Dewey's pragmatist philosophy and conceives humanness as inextricably linked to experience in and of the social and natural world. In his opinion, experience is the evolutionary, existential, and phenomenological ground of humanness (ibid.). In other words, humanness is the heritage of our evolution in close bondness with nature – the community of life and its support system. Care, love and respect towards it are thus what make us what we are and should be – human and deeply humane in our attitudes towards the world; beings who need to strive for ecological identity.

Macy (1990, as cited in Ryland, 2000) underscores the need for us to extend our ecological self (the wider construct of identity and self-interest) further and further beyond the separate ego to include more and more of the phenomenal world. She believes that this way we may arrive at a deep bondness with the Earth, which becomes a source of deep wisdom and a magic synergy with nature. Such an expanded, encompassing self is considered to help us retain our fortitude in the face of the destructive influences of the world. In fact, this appeal for extension of our identity to include other forms of life and elements of the life support system is a call for seeking ecological wisdom, which lies hidden in our evolutionary experience as human species – what Dewey (1925, as cited in Brereton, 2009) calls prehuman level of experience. Our ecological wisdom which Bateson (1972, as cited in Reason, 2007) describes as wisdom, which the human species has accumulated in the course of its evolution in nature, can be accessed by reviving our evolutionary ties with nature – our true medium of origin. It is a wisdom that we need for sustainable participation in life activity and conscious and responsible citizenship in the global community of life. The following section outlines the theoretically conceptual framework of the present study. It examines the potential of action research in creating spaces for seeking ecological wisdom for inclusion and sustainability through inquiry into our frames of reference with a focus on exploring the issue of ecological identity, which is the aim of the study reported on in the present paper.

Action research as a means to create space for seeking wisdom

A recent study by Salīte, Gedžūne and Gedžūne (2009) focused on the notion of wisdom in the context of educational action research with emphasis on the topics of environmental education – person's attitude towards own and other species, inclusion in or exclusion from

the social and natural world. The authors drew on Aristotle's (1985) concept of phronesis, which has been variously interpreted as moral practical wisdom (Birmingham, 2004; Flyvbjerg, 2004; Grint, 2007), practical judgement (Smith, 1999), also wisdom of insight (Salīte, Gedžūne, & Gedžūne, 2009). To sum up, it is the ability to use experience and reflection for finding ethical solutions to the problems at hand, which would correspond to the overarching idea of doing what is 'good' and beneficial for most people concerned. Salīte, Gedžūne & Gedžūne (2009) argue that discovery of life wisdom in co-action (phronesis) is one of the opportunities offered by educational action research. Phronesis as moral practical activity which is directed towards achieving the collective virtuous good and educational action research as reflective activity for formulation and implementation of shared action goals of mutual concern are complementary in their nature (ibid.).

A similar idea is held by Flyvbjerg (2001) who considers phronesis as practical reasoning, a skilled performance or wise judgment which is gained from an insider's (participant's) perspective in specific situations, as opposed to the epistemic knowledge gained in traditional research by observation from a detached outsider's position. As Caterino (2005) puts it, phronesis implies participation in a web of mutual understanding with others and getting a sense of what is right to do through social inquiry. Grint (2007) explains that phronesis cannot be reduced to simplified rules or truths and cannot be taught in a lecture. In a similar vein, Birmingham (2004) cautions that, because phronesis is explicitly a complex personal virtue bound to the particulars of situations and embedded in a community, it resists being reduced to a concrete measure of certainty. It can only be lived and achieved through action, decision-making, risk-taking and inquiry. These considerations are characteristic of action research. Gravett (2004) points out that action research is aimed at achieving both personal and social good. Similarly, Bradbury and Reason (2003) argue that action research is focused on seeking "collective wisdom" (p. 163) through reflection about participants experiences and practices and aiming for a new and better future. Leitch and Day (2000) and Kinsler (2010) refer to Grundy's (1987, as cited in Kinsler, 2010) typology of action research that distinguishes a particular kind of action research – practical action research that seeks to improve practice through development of personal wisdom that would aid practitioners to make wise and prudent decisions and acquire a disposition towards good rather than correct action (otherwise known as phronesis). It thus follows that collective wisdom achieved through action research as a means to enhance the flourishing of individuals and the community is compatible with the essence of moral practical wisdom enclosed in phronesis.

Arguably, the most popular definition of action research is proposed by Reason and Bradbury (2001) in their "Handbook of Action Research". They define action research as a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview which they believe is emerging at this historical moment. In their opinion, action research seeks to bring together action and reflection, theory and practice in participation with others in the pursuit of practical solutions to the issues of pressing concern to people and, more generally, the flourishing of individual persons and their communities (ibid.). Such an explicitly participatory view on action research underscores the importance of respecting the research partici-

pants' standpoints and the knowledge that the participants have arrived at through reflection on their lived experiences (Brydon-Miller, Greenwood, & Maguire, 2003).

Bradbury (Bradbury Huang, 2010) distinguishes four characteristic features of action research:

- orientation to action – generating new ideas that govern action as reaction to participants' perceived needs;
- reflexivity – 'self' is recognised as the instrument of change;
- significance of research influence – meaning and importance that exceeds the immediate context and supports the flourishing of persons, communities and the broader ecology;
- evolution from partnership to participation with gradual changes in the quality of relations among the participants who become more and more involved in planning and evaluating inquiry and change.

These features permit to conclude that action research is a reaction to an issue that is personally meaningful to all its participants. In mutual partnership and cooperation, action research permits to arrive at new knowledge, or wisdom that is generated trough reflection on the participants' lived experiences (Bradbury & Reason, 2003) and encourages action for change (Price & Valli, 2005). In other words, it is a process where participants work together to create new knowledge, develop new understandings and learn from each other (Oreszczyn & Levidow, 2010), i.e. embark on the way of seeking their personally meaningful wisdom of insight.

How to achieve such cooperation, full participants' engagement and participation in action research? Several authors (Birmingham, 2004; Volk, 2009) believe that it is important to create a space or environment that permits to experience a feeling of community. Birmingham (2004) argues that creating the community in which phronesis may develop (i.e. wisdom may be generated through involvement in action research) requires providing the freedom, security, time, and space to take risks and engage in constructive critical discourse with other co-participants of the process. Volk (2009) argues that creating the environment for sharing insights gained from examination of experience helps develop a culture of collegiality, which is important for the participants' full involvement in inquiry processes of action research. Such culture of collegiality provides research participants with the much needed support from other members of the learning community. Other authors (Gravett, 2004; Ballard, 2005) also indicate that action research should provide a safe, supportive and helping environment for discovering the deeper meaning of our experiences. At the same time, this environment should be challenging (Brydon-Miller, Greenwood, & Maguire, 2003). It means that, ideally, action research environment not only nurtures and gives a sense of safety, but also encourages dialogue, listening to others and engaging in critical reflection of experience and its underlying assumptions, beliefs, values, etc. that constitute our personal frames of reference. As Reason (2007) points out, one of the features of action research is that its cycles provide space for reflection and group learning.

To achieve it, communication is essential. Participation in critical discourse about participants' experiences requires opening communicative space. It is a process by which research participants become fully involved in open interaction and discussion of their di-

verse opinions, which fosters successful generation of personally meaningful insights from inquiry into their experiences (Gayá Wicks & Reason, 2009). Cassell and Johnson (2006) point out that opening of communicative space is achieved by forging dialogical relationships among research participants and researchers in pursuit of shared interests and issues of mutual concern. Buber (2002) also stresses the importance of dialogue and considers I/thou attitude to be the grounds for dialogical relationship, developed on the basis of equality and recognition of the worth of the other. Dialogical relationships between researchers and research participants in action research thus imply a shift from the position of researcher as the omniscient expert to a community of co-researchers who feel deep respect for each other's ways of knowing (Reason, 1999, 2003, 2006; Yorks & Kasl, 2006), interpretations of experience and engagement in personally significant inquiry.

Kemmis (2001, as cited in Reason, 2006) similarly stresses that the first and most crucial step of action research is creation of communicative space in ways that enable people to reach consensus and make sure that every participant's contribution is heard and attended to, thus ensuring the legitimacy of the drawn conclusions. Reason (2006) explains that creation of communicative space in action research entails opening, developing, sustaining and encouraging new and better forms of communication and dialogue, and in some cases it can be even more important than solving immediate practical problems.

Cassell and Johnson (2006) single out a particular type of action research – deconstructive research practices with a postmodern orientation. Such action research projects are focused on opening spaces for engaging participants in sharing alternative stories and deconstructing hegemonic discourses. In other words, people generate new ways of seeing things, interpreting them on the grounds of their personal frames of reference. Such orientation of inquiry is particularly compatible with the basic principle of action research as defined by Bradbury and Reason (2003) – action research develops new ways of seeing/theorising the world.

Reason (2006) posits that action research is concerned with creating a space where people can describe their worlds as they see them. Or, as Gravett (2004) puts it, creating a space where participants, on the grounds of inquiry into their experiences, construct their own versions or interpretations of various phenomena. Thus, through creation and opening of communicative space, action research gives voice to participants, emancipates and empowers them (Kinsler, 2010). In this context, Bradbury and Reason (2003) speak of the so-called double loop learning in action research, which implies opening new spaces for dialogue and conversation. Bradbury and Reason (ibid.) also argue that such type of action research as second person inquiry or cooperative inquiry in small groups emphasises the importance of support, trust, mutual care and collaborative relationships among the participants. According to Bradbury and Reason (ibid.), if inquiry process in action research is organised in this way, groups can work towards discovering new ways of seeing the world, i.e. arrive at transformative changes in research participants' frames of reference.

The necessity for such transformation is underscored by Reason (2007) who believes that the current crisis of sustainability that we are facing is a direct result of a crisis of the mind, our way of thinking of this world and acting within it. Education is seen as the key to ensuring sustainable development of society and our planet. However, it is important to realise that education for sustainability, if implemented in an informative way, is ineffec-

tive. Several studies (Moore, 2005; Reason, 2007) confirm that overwhelming learners with facts about the impending ecological crisis leads to shock, alarm, even paralysis and results in emergence of a culture of fear. Therefore, environmental education and education for sustainable development ought to be implemented so as to encourage a change of mind – a transformation in people's frames of reference from orientation to consumerism, ownership, egocentrism and exclusion to orientation towards a holistic and ecocentric worldview, coexistence in harmony and awareness of inclusion in the community of life and its support system (Salīte, 2002; Salīte & Klepere, 2003; Iliško; 2005; Salīte, 2008). The first step to such transformation is becoming aware of the frames of reference we hold (Cranton, 2000; Mezirow, 2000).

Birmingham (2004) points out that the moral complexity of teaching, especially ESD, which is extremely ethically charged, requires phronesis to achieve moral goodness, promote excellence in teaching and learning, and advance human flourishing. Kelly (2006) seconds this opinion by emphasising that sustainable future of our planet requires more wisdom (phronesis) which differs from knowledge in being ethically charged; hence, learning for sustainability should be oriented to promote a person's intellectual and spiritual development (Belousa, 2002), nurturing a sense of responsibility for the Earth and an ethical perspective that supports assuming such responsibility (Kelly, 2006). Thus, as stated above, society experiences an urgent need for transformative changes in our habits of mind or frames of reference that determine the way we perceive the world and ourselves in interaction with it (Mezirow, 2000). These changes are closely related to our identities. Pipere (2007) conceives of identity as of a manifold and dynamically changing field of personality adaptation and creation that arises from interactions with the world. In the present day, it is hardly disputable that the interaction between humans and the world can be either sustainable or unsustainable (Salīte, 2008). It can therefore be concluded that the identity emerging as a result of these interactions (self image and the idea of being in the world) can likewise be either sustainability or unsustainability oriented (Huebner, 2004, as cited in Pipere, 2007), in other words, ecological or unecological. The present study aims at discerning the features of ecological and unecological identity as perceived by pre-service teachers, emerging from their experience-based individual and dialogical reflections about what being an ecological or unecological person entails. This exploration of pre-service teacher's experience-based views on ecological and unecological identity was organised in a form of educational action research with a meta-aim of searching for ecological wisdom of insight through critical inquiry into participants' frames of reference.

Research design and methodology

The study presented in this paper is part of a broader inquiry related to the implementation of the action research based study course "Environmental Pedagogy" at Daugavpils University. It is a mandatory course taken by all first year students of the bachelor level programmes "Pre-school Teacher" and "Primary School Teacher". In the academic year 2010/2011, 39 students participated in the action-research based study course, with 31 students taking part in the research case described in this paper.

One of the first activities of the study course entailed the students' reflection on the features and manifestations of ecological identity. They were asked to look into their past experiences and think of some features that characterise them as (1) ecological persons and (2) unecological persons and our society as (1) ecological society and (2) unecological society. The research participants were thus evaluating individual and collective ecological identities. The students first reflected on this issue individually; then freely discussed their insights with their peers in pairs or small groups of three. After participation in discourse, which was characterised by sharing of perspectives through open dialogue in a climate of equality and mutual enrichment, the students individually came up with their lists of features. After a week of individual and collective non-formal out-of-class reflections, the group met for the next class, and the students were invited to return to their lists and alter them if they felt that their ideas on the issue had changed. These finalised lists were then submitted to the researchers.

These data were then examined by using the method of qualitative content analysis, following the emergent coding procedure (Stemler, 2001). Observing the suggestions proposed by Granenheim and Lundman (2004), the data were transcribed in Ms Word format, first read for general comprehension and then re-read thoroughly; core meaning units were identified and condensed into categories which, in their turn, gradually converged into emerging themes. To increase the credibility and dependability of the process, the coding was performed independently by two authors of the present paper, then compared and discussed in a team of all four authors. Minor alterations were made to the emergent framework of categories, some of the latter were converged or split. Thus, after analysing qualitatively the results of students' reflections, the researchers came up with four lists of features, respectively – individual ecological identity, individual unecological identity, collective ecological identity and collective unecological identity. Each kind of identity was described by 50 features, which were grouped into categories. The students were then engaged in the next cycle of reflection. They were asked to look through the four lists of features and mark each of them by awarding points from 1 to 4, thus expressing if, in their opinion, this feature characterises them personally to a great extent (4 points), to a considerable extent (3 points), to some extent (2 points) or hardly at all (1 point). The data drawn from this cycle of reflection were processed quantitatively and presented to research participants in a form of tables and diagrams at a later class. After the presentation, the research participants engaged in an open discourse on the findings of the previous cycles and then submitted brief descriptions of ecological person as someone having the characteristics of ecological identity. This final result of reflection was considered by the researchers and the participants to represent the emergent wisdom of insight that the research participants had arrived at through engagement in critical reflection and discourse on their experiences in an open communicative space of action research.

Arguably, the presence of the so-called 'action component' might be questioned in such a format of educational action research. This, however, might be explained by some of the contextual constraints of our study which was conducted during study course acquisition in a university setting with first year students who are now only at the earliest stage of their professional development journey and are hence only just beginning to reflect on what being a sustainability-concerned teacher entails in the present situation of impending eco-

logical and social crisis. Thus, as outlined in the theoretically conceptual framework of our study, the main focus of the present educational action research case was to open spaces for inquiry and dialogue on the deeper meanings of the research participants' lived experiences and the seeds of wisdom enclosed therein. We cherish the hope that the pre-service teachers who participated in our study will yet have the chance and, crucially, the willingness to enact the new perspectives in their pedagogical career, for instance, during their practice placement planned for the two final years of their four years long period of bachelor studies.

The above-described ongoing cycles of reflection in an atmosphere of openness, friendliness, support and mutual learning contributed to a gradual opening of communicative space and increased the students' participation in critical discourse. The research participants gradually came to perceive reflection on their experiences of interaction with the environment as a way towards revealing their ecological identities. Exploration of ecological identity was then regarded as a process of generating ecological wisdom of insight for sustainability (person's inclusion in the life world) or seeking deep wisdom for inclusive interrelations with the global community of life and its support system. The results of all research cycles are presented in the forthcoming section of the paper.

Research findings

(A) Students' views on their individual ecological identity

After analysing qualitatively the features that the research participants listed describing their individual ecological identity, the researchers came up with a list of 50 features which were grouped in 12 categories. The results of the students' repeated evaluation of these features are presented in Table 1.

Table 1. Results of students' experience-based reflections on their individual ecological identity

No.	Categories	No. of features across categories	Value	Mean value/points awarded
1	**Relationship with animals**	**3**	**351**	**117 (3.77)**
	love towards animals, not hurting them		121	
	care for (domestic) animals		121	
	helping wounded, hungry animals		109	
2	**Physical health**	**5**	**573**	**114.6 (3.7)**
	personal hygiene		123	
	care for one's health		119	
	care for one's physical appearance		115	
	avoiding polluting one's organism with bad habits (smoking, alcohol)		114	
	keeping fit (sports)		102	

Sequel to Table 1.

3	**Relationships with people**	**9**	**897**	**112.13 (3.62)**
	love and care for relatives		122	
	care for children		120	
	respect towards people		120	
	valuing friendship		118	
	helping people		111	
	openness and frankness		111	
	charity		104	
	encouraging others to live more ecologically		91	
4	**Personal spiritual development**	**3**	**335**	**111.67 (3.6)**
	love and honesty towards oneself		115	
	inner purity		111	
	care for one's intellectual, spiritual development, self-realisation (through art, music, learning)		109	
5	**Character traits**	**8**	**871**	**108.88 (3.51)**
	politeness		118	
	concern about future		116	
	responsibility		115	
	love towards all living beings		113	
	integrity, keeping one's promises		111	
	hopefulness, optimism		108	
	patience		103	
	ecological consciousness (thinking, values)		87	
6	**Cleanliness of environment as individual's responsibility**	**4**	**435**	**108.75 (3.51)**
	keeping one's living space clean and orderly		118	
	care for nature by participating in keeping it clean (campaigns for collective sprucing up the environment)		109	
	avoiding polluting the environment (e.g. by not throwing waste in inappropriate places)		109	
	avoiding burning plastic and other kinds of waste in forests		99	
7	**Relationship with plants**	**3**	**300**	**100 (3.23)**
	not destroying the plant kingdom (trees, flowers, grass)		113	
	tending flowers (home plants, gardening)		97	
	planting trees		90	
8	**Use of resources (wrapping)**	**3**	**282**	**94 (3.03)**
	repeated use of plastic bags		105	
	use of recycled paper		91	
	use of environmentally friendly package (eco-bags, cloth satchels, paper, „family pack")		86	
9	**Habits of personal life**	**3**	**268**	**89.33 (2.88)**
	spending time in nature (walk in the forest or park)		111	
	limited use of chemicals (for hygiene, domestic activities etc.)		80	

	use of natural, ecologically pure products (eco-cosmetics, clothes and furniture from natural fibres and materials)		**77**	
10	**Health related to consumption of foods**	**4**	**350**	**87.5 (2.82)**
	consumption of food grown by oneself (fruit and vegetables from one's own plot)		118	
	avoiding consumption of genetically modified foods		96	
	consumption of ecologically pure foods		95	
	vegetarianism		41	
11	**Use of resources (thrift)**	**3**	**262**	**87.33 (2.82)**
	saving energy		90	
	saving water		88	
	ecologically clean means of transportation (by bicycle, on foot)		84	
12	**Use of resources (recycling)**	**3**	**240**	**80 (2.58)**
	utilisation of electric household appliances		83	
	waste recycling		80	
	recycling paper		77	
Total mean value (points awarded)				**3.26**

As seen from Table 1, the pre-service teachers who participated in the present study relate their individual ecological identity to its manifestation in relationships with own and other species – such relationships that are characterised by love, care and helpfulness. Interestingly, the research participants consider that their ecological identity also reveals itself in the state of their physical health and personal effort contributed to sustaining it, as well as in their character traits and activities undertaken towards personal spiritual development. It thus becomes clear that the research participants' view of their ecological identity is holistic in that it takes into account person as a whole – a physical, emotional, intellectual and spiritual being. The pre-service teachers also believe that their ecological identity is manifested in the actions they take to keep the environment clean and protected from potentially harmful human influences; it is important to note that taking such actions is perceived as a person's responsibility before nature. Finally, the research participants consider that their ecological identity is revealed in their habits of personal life and considerate use of planet's resources. These two are more behaviour-related aspects of identity that pre-service teachers recognise in their experiences.

(B) Students' views on collective ecological identity of their community

After analysing qualitatively the features that the research participants listed as describing their collective ecological identity, the researchers came up with a list of 50 features which were grouped in 12 categories. The results of students' repeated evaluation of these features are presented in Table 2.

Table 2. Results of students' experience-based reflections on collective ecological identity in their community

No.	Categories	No. of features across categories	Value	Mean value/points awarded
1	**Policy and legislation**	**2**	**217**	**108.5 (3.5)**
	penalty for destruction and pollution of nature		114	
	legislation against environmental pollution and for environmental protection		103	
2	**Relationships with people**	**7**	**735**	**105 (3.39)**
	care for family members		114	
	care for children and orphans		109	
	mutual help, sympathy, charity		107	
	friendliness		106	
	cooperation, exchange of experience		105	
	helpfulness		98	
	not dividing people by race or nationality, seeking common grounds		96	
3	**Cleanliness of environment as collective responsibility**	**8**	**808**	**101 (3.26)**
	organisation of/participation in campaigns for environmental protection or collective sprucing up the environment		116	
	planting trees and forests		108	
	activities of nature protection organisations		107	
	creation of natural parks and reservations		105	
	not polluting water		104	
	disposing of waste in the prescribed places		103	
	minding the cleanliness of nature and ecological problems		94	
	decreased use of chemicals in domestic activities		71	
4	**Care about animals**	**6**	**594**	**99 (3.19)**
	love towards animals		112	
	care for domestic animals and pets		112	
	protection of endangered species		105	
	protest against abuse of animals (in science, for furs)		99	
	helping wounded, stray animals		89	
	avoiding killing animals (vegetarianism)		77	
5	**Health related to consumption of foods**	**2**	**192**	**96 (3.10)**
	consumption of foods grown with own hands		106	
	consumption of ecologically pure products		86	
6	**Education and information**	**3**	**284**	**94.67 (3.05)**

	commercials that promote ecological attitude and action		96	
	exchange of knowledge and experience on international level		95	
	ecological upbringing at school		93	
7	**Use of resources (recycling)**	**2**	**188**	**94 (3.03)**
	sorting waste		95	
	secondary use of once consumed products		93	
8	**Personal spiritual development**	**3**	**281**	**93.67 (3.02)**
	concern about future		99	
	evaluation of one's actions and behaviour		91	
	strive for spirituality and doing what is good		91	
9	**Use of resources (wrapping)**	**2**	**184**	**92 (2.97)**
	production and use of ecological wrapping		97	
	substitution of cellophane packets with environmentally friendly ones		87	
10	**Physical health**	**2**	**182**	**91 (2.94)**
	care for one's health and fitness		98	
	attempts to fight bad habits (smoking, alcohol)		84	
11	**Resources (green technologies)**	**8**	**727**	**90.88 (2.93)**
	production of ecologically pure foods by bio farming		104	
	invention and production of ecologically pure/environmentally friendly products		94	
	perfection of environmentally friendly production technologies		93	
	use of alternative sources of energy		91	
	creation of biodiesel		90	
	factories concerned for reducing environmental pollution		87	
	creation of nature friendly means of transport		86	
	ecological building, environmentally friendly houses		82	
12	**Use of resources (thrift)**	**5**	**393**	**78.6 (2.54)**
	walking on foot		86	
	using bicycles		82	
	saving electric energy and water		79	
	limited use of natural resources		75	
	reduced use of cars		71	
Total mean value (points awarded)				**3.08**

Table 2 reveals that the pre-service teachers who participated in the given study relate the collective ecological identity of their community to introducing such policy and legislation of environmental protection that enhance external motivation by making pollution of nature a penal offence. Secondly, the research participants link collective ecological identity to people's relationships with own and other species, characterised by care and helpfulness. This tendency is also present in the students' views on their individual ecological identity.

They likewise emphasise taking care of the cleanliness of environment (for instance, participation in campaigns for environmental protection) as a collective responsibility. The pre-service teachers believe that ecological identity of their community is also manifested in the state of physical health of its individuals, which can be kept satisfactory by consuming ecological foods and avoiding bad habits such as drinking, smoking and drug use. The research participants recognise the role of information and communication for spreading the message of ecology as a manifestation of ecological identity in their community. Finally, they mention such behavioural aspects of collective ecological identity as thoughtful use of natural resources, saving them from depletion, advancing green technologies and choosing alternative ways of transport.

(C) Students' views on their individual unecological identity

After analysing qualitatively the features that the research participants listed as describing their individual unecological identity, the researchers came up with a list of 50 features which were grouped in 12 categories. The results of the students' repeated evaluation of these features are presented in Table 3.

Table 3. Results of students' experience-based reflections on their individual unecological identity

No.	Categories	No. of features across categories	Value	Mean value/points awarded
1	**Health related to consumption of foods**	**2**	**174**	**87 (2.81)**
	consuming fish and meat		99	
	consuming unecological and harmful products (fast food, genetically modified food etc.)		75	
2	**Unecological goods**	**3**	**247**	**82.33 (2.66)**
	use of chemical products for washing up and housecleaning		100	
	use of cosmetics and hygiene products that harm the environment		86	
	use of harmful medicines		61	
3	**Ineffective use of resources**	**6**	**460**	**76.67 (2.47)**
	using environmentally unfriendly means of transportation (car)		92	
	using wrapping that harms the environment (plastic bottles, plastic bags etc.)		83	
	failure to save paper		79	
	buying unnecessary goods		73	
	ineffective use of natural resources		67	
	irrational use of water		66	
4	**Not getting involved in sprucing up the environment**	**1**	**75**	**75 (2.42)**

	insufficient activity in nature protection (various campaigns)		75
5	**Personal living environment**	**2**	**136**	**68 (2.19)**
	living in an unecological house (plastic windows, slate roof etc.)		91
	failing to clean up one's living space		45
6	**Relationships with self**	**7**	**461**	**65.86 (2.12)**
	infatuation with technologies (computer, internet)		82
	tendency to perceive negative information		69
	contaminating one's language		67
	dominance of material values		63
	passive lifestyle		60
	suppressing one's emotions		60
	unecological thinking and lifestyle		60
7	**Use of resources (recycling)**	**2**	**122**	**61 (1.97)**
	not sorting waste		77
	throwing away household appliances in the environment		45
8	**Relationships with animals**	**3**	**174**	**58 (1.87)**
	not taking care of stray animals (not feeding them)		61
	destroying insects		58
	not helping animals if something is wrong with them		55
9	**Relationships with people**	**10**	**554**	**55.4 (1.79)**
	dominance of technologies in relationships with people (Skype, mobile phones)		92
	failure to trust people		63
	not encouraging others to be ecological		61
	competition among people		57
	conflicts with people		57
	lack of tolerance		50
	reserve		48
	lies, deceit		47
	use of others for selfish purposes		43
	disrespect (to other's opinion and work)		36
10	**Character traits**	**7**	**362**	**51.71 (1.67)**
	laziness		70
	malevolence (inability to forgive)		59
	lack of ecological consciousness (indifference, disinterestedness)		54
	egoism		52
	envy		47
	hypocrisy		41
	irresponsibility (failing to keep one's promises)		39
11	**Destructive behaviour**	**4**	**196**	**49 (1.58)**
	burning refuse and last year's dry grass		50

	littering the environment (with papers, rubbish)	49	
	breaking trees and bushes	49	
	picking flowers, destroying endangered species of plants	48	
12	**Physical health**	**3**	**146**	**48.67 (1.57)**
	failure to lead a sportive lifestyle	67	
	failure to take care of personal hygiene	40	
	bad habits (alcohol, smoking)	39	
Total mean value (points awarded)			**2.09**

As depicted in Table 3, the pre-service teachers who participated in the given study primarily relate their individual unecological identity to the consumption of unecological products (household goods and alimentary products) which damage their physical health as well as the 'health' of the ecosystem. Curiously, the students consider that their unecological identity can be manifested in action (notably, ineffective use of resources) as well as in *in*action (failure to become involved in nature protection campaigns). They believe that their unecological identity is reflected in the living environment they create around them, as well as enclosed in their character traits and relationships with the 'self', the surrounding people and other forms of life. The unecological quality of these relationships and, consequently, of the students' individual identity, is exemplified by overreliance on technologies, dominance of material values, pollution of one's language, not taking care of others, competition, conflicts, intolerance etc. Finally, the pre-service teachers consider their unecological identity to be revealed in their destructive behaviour towards nature and its elements, as well as the state of their physical health as a consequence of leading an unecological lifestyle.

(D) Students' views on collective unecological identity of their community

After analysing qualitatively the features that the research participants listed as describing their collective unecological identity, the researchers came up with a list of 50 features which were grouped in 11 categories. The results of the students' repeated evaluation of these features are presented in Table 4.

Table 4. Results of students' experience-based reflections on collective unecological identity in their community

No.	Categories	No. of features across categories	Value	Mean value/points awarded
1	**Destructive behaviour (polluting the environment)**	**11**	**1104**	**100.36 (3.24)**
	use of chemicals for domestic life		110	
	pollution resulting from the use of transport		107	

	cutting down and burning forests		107	
	pollution of nature/environment		105	
	contamination of water (with chemicals)		104	
	air pollution via production		101	
	burning waste and last year's dry grass		101	
	disposing of waste in inappropriate places		98	
	depletion of the ozone layer		97	
	increasing number and scale of oil catastrophes		88	
	unecological farming		86	
2	**Health related to consumption of food**	**2**	**196**	**98 (3.16)**
	consumption of unwholesome food (fast food, sweets, food containing chemicals)		103	
	consumption of genetically modified food		93	
3	**Use of resources related to the use of technologies**	**8**	**782**	**97.75 (3.15)**
	excessive use of technologies		106	
	excessive use of non-renewable natural resources		104	
	production of products that decompose slowly/are unecological		101	
	increasing number of factories that pollute the environment		100	
	production and use of chemicals that harm the environment		98	
	insufficiently developed use of alternative sources of energy		93	
	production of genetically modified foods		93	
	new technologies are unecological		87	
4	**Personal characteristics and values**	**7**	**647**	**92.43 (2.98)**
	dominance of money and material values over the spiritual ones		98	
	thoughtlessness, failing to consider the consequences of one's actions		98	
	indifference, gloomy future prospects, lack of future plans		92	
	crisis of spirituality and virtue		92	
	egocentrism, egoism		90	
	lack of respect towards nature		89	
	hopelessness, nostalgia for the past		88	
5	**Relationships with people**	**8**	**724**	**90.5 (2.92)**
	competition and the power of money		104	
	increasing influence of computers and virtual space on humans		103	
	aggressiveness among people (e.g. wars, conflicts)		97	
	envy		89	
	mistrust		88	
	indifference towards others		86	
	disintegration of family ties		81	
	lack of friendship		76	

Sequel to Table 4.

6	**Relationships with animals**	**1**	**90**	**90 (2.9)**
	hunting and destroying endangered species		90	
7	**Physical health**	**4**	**358**	**89.5 (2.89)**
	bad habits (alcohol, smoking, drugs)		104	
	use of harmful medicines		91	
	inactive, unhealthy lifestyle		90	
	failure to take care of personal hygiene		73	
8	**Personal lifestyle and living environment**	**6**	**537**	**89.5 (2.89)**
	use of environmentally unfriendly materials in household activities		101	
	environmentally unfriendly building		91	
	overconsumption		89	
	urbanisation, increasing population of cities		87	
	no concern for saving energy		85	
	alienation from nature		84	
9	**Use of resources (recycling)**	**1**	**88**	**88 (2.84)**
	lack of involvement in recycling		88	
10	**Use of resources (wrapping)**	**1**	**82**	**82 (2.65)**
	use of environmentally unfriendly wrapping (plastic bags, etc.)		82	
11	**Not getting involved in sprucing up the environment**	**1**	**71**	**71 (2.29)**
	lack of participation in campaigns for collective sprucing up the environment		71	
Total mean value (points awarded)				**(2.9)**

Table 4 demonstrates that the pre-service teachers who participated in the given study primarily relate the collective unecological identity of their community to destructive behaviour. It is interesting to observe that the research participants considered destructive behaviour the least prominent trait of their individual unecological identity. This might signify that people are generally blind to their own faults and tend to blame others in bringing about the ecological crisis. The research participants also believe that collective unecological identity is manifested in people's consumption habits – depletion and irresponsible use of natural resources, damaging one's health with harmful foods and overuse of technologies that threatens the environment. Similarly as in the case of examining their individual unecological identity, the pre-service teachers recognise that people's character traits and the quality of relationships with others (including own and other species) is an important indicator of unecological identity. The research participants particularly underscore the dominance of money and material values in our society, which denotes a crisis in spirituality. They also notice people's thoughtlessness, indifference and irresponsibility when interacting with the natural and social world. Finally, the pre-service teachers consider that the state of people's health, their lifestyle, and especially irresponsible use of natural resources are illustrative manifestations of unecological identity in their community. Again, they believe that unecological identity in the entire community can be manifested as both misdirected activity and inactivity (passivity) the same as in the case of separate individuals.

Thus, the research data describing the research participants' individual/collective ecological/unecological identity reveal that, in the pre-service teachers' opinion, their individual identity is less unecological than that of the wider society. In line with that, the pre-service teachers' individual identity in their eyes is more ecological than that of the surrounding community.

(E) Students' final reflections on an ecological person as a bearer of ecological identity

After engaging in open discourse and critical reflection on the findings of the previous cycles, the students came up with brief descriptions of an ecological person who possesses an ecological identity. The qualitative analysis of students' reflections on this issue reveals ecological identity as characterised by the following categories, exemplified by extracts from the students' reflections:

Behavioural aspect

Ecological lifestyle as a key to retaining the health of individuals and the planet:

> *…saves natural resources, energy; lives according to the rules of ecology; has an ecological lifestyle, lives in such a way so as not to harm the environment*

Participation and involvement in nature protection activities:

> *…participates in nature protection organisations, in cleaning up the local environment, supports nature protection; actively participates in the social life of the community with own experience, thinking, feelings; participates in conservation of nature; becomes involved in regeneration of nature; attempts to make his/her surrounding environment more ecological*

Care and considerateness as the guiding motives of one's actions that help to avoid doing harm to the environment:

> *…cares for nature and the surrounding environment; cares for oneself, environment, other people, animals; cares for nature as if for oneself; cares for the future, nature, children, culture, soul; cares for own body, the 'self'*

> *…does not harm the environment or nature with one's life activity; promotes long-term existence of the planet; avoids interfering in natural processes; does not pollute the environment with waste*

Helpful activity for keeping the environment clean and free from the harmful effects of human influence:

...keeps the surrounding environment clean; tries to be useful – do something good for the environment and give one's contribution to the society

Attitudinal and emotional aspect

Sustainability-oriented attitude:

...so that environment is clean and pure for the future generations; recognizing the importance of retaining the riches of nature, passing them on to the future generations; care for the future

Optimistic outlook into the future:

...positive outlook

Inclusion aspect

Feeling of belonging and appreciation of the inextricable link among oneself and all members of the community of life and its support system:

...feels as a part of nature; is closely linked with it; related to other organisms; able to integrate in the society; connection with nature is extremely important; a person is reflection of nature and the environment, draws inspiration from it and has the responsibility to protect it

Accord and harmony as features of relationship between oneself and the world:

...harmony between reason and soul; life in harmony with oneself and others; life in accord with the laws of nature and in accord with the 'self'; good relationships with others

Axiological aspect

Spiritual values such as love, care, respect, unselfishness and honesty:

...respect towards oneself, other people and nature; unselfishness – doing not only what falls into the sphere of own interests; spiritual values; love towards nature and listening to it; honesty towards oneself

'Purity' of thoughts and actions:

...spiritual 'purity'; a 'pure' person who is concerned with hygiene, cleanliness of oneself and the environment; does not pollute one's soul and mind; internally pure personality; both internally and externally pure

Cognitive aspect

Awareness/understanding that enable the evaluation of own and others' activity

> *...thinks about environmental problems; is concerned with environmental problems; considers the environment important*

> *...is aware of the positive and negative effects of one's activity and is ready to change things; understands what the environment should be like*

> *...teaches others to see nature as part of themselves; teaches not to harm nature*

> *...evaluates each taken step; evaluates own activity*

It can thus be concluded that the research participants' view ecological identity holistically as a complex, multi-faceted phenomenon with several characteristic dimensions. An ecological person is perceived as a whole person with characteristic attitudes, values, emotions, thoughts, dispositions and ensuing actions. In fact, through several cycles of reflection, the research participants have arrived at describing an ecological frame of reference (Aalsburg Wiessner & Mezirow, 2000; Cranton, 2002) – a complex phenomenon with cognitive (related to mind), affective (related to emotions) and conative (related to action) dimensions (Mezirow, 2000). In other words, it is a complex structure of assumptions, beliefs, values and expectations which selectively determines individuals' perceptions, inquiry, feelings, dispositions and activities and helps them make meaning of their experiences (ibid.).

This final result of reflection was considered by the researchers and the participants to represent the emergent ecological wisdom of insight that the research participants had arrived at through engagement in critical reflection and discourse on their experiences in open communicative space of action research. As pointed out earlier in this study, wisdom of insight (phronesis) is a complex phenomenon, inextricably linked to the particulars of specific situations and deeply embedded in a community (Birmingham, 2004). It, therefore, cannot be reduced to specific truths, be taught or otherwise transmitted (Grint, 2007). It can only be lived through and gradually achieved through such action research embedded processes as action, choice-making, risk-taking and inquiry. We thus believe that the above-described cycles of action and reflection on the research participants' personal experiences and ecological identity have lead them on the path of slowly and tentatively discovering that their experiences are the source of personal wisdom of insight, which can be applied in their ensuing life activity and integrated in the process of creating their personal practical theories (Gravett, 2004) of environmental pedagogy, as the meta-aim of the study course envisages.

Discussion and conclusions

In this section, the findings of the present study described above will be related to the current discussions in theoretical literature pertaining to the topic under study. As pointed out

by Reason and Bradbury (2003), action researchers increase the quality (reliability and trustworthiness) of their claims which are rooted in the results of their action research by explicitly connecting their own judgements to discussions in current literature.

Goodnaugh (2010) examines teacher identity and the role of action research in transforming it. She believes that teacher identity includes teachers' beliefs, values and emotions related to various aspects of teaching and to what it means to be a teacher. The identity is perceived as incessantly changing and transforming through accumulation of new experience. In Goodnaugh's (ibid.) opinion, teacher identity includes complex interactions with personal experiential, cultural, social and environmental contexts. By extension, we can say that pre-service teachers' ecological identity includes their beliefs, values and emotions related to their experience based assumptions on what being an ecological person entails, as well as their activities or behaviour guided by these assumptions.

In the context of teachers' views on the aim of education for sustainable development, Salīte (2002) distinguishes ecocentric and anthropocentric perspectives. Anthropocentrism is defined as an exaggerated belief of human significance over the non-human world and human ability to control and direct natural processes to our personal advantage (ibid.). Ecocentrism, on the other hand, presupposes attachment, respect, responsibility, cohesion and care in relationships among all forms of life and its support system, viewing them as complementary components within the ecosphere (ibid.). We believe that these notions are applicable to the context of the present study and can be interpreted as orientations of the research participants' identities. Identity that is more ecocentric in its orientation is manifested through caring, respectful relationships with other people and the world at large, responsible action in striving to protect the environment from harmful effects of human life activity, considerate use of natural resources and general awareness of the relatedness and interdependence of all forms of life and its support system on the earth. Conversely, an identity that is more oriented towards anthropocentrism is manifested as irresponsible action, egoism, competition, disregard for the needs of others, alienation from nature, overconsumption, dominance of material values and (self-)destructive behaviour. The present study enabled the pre-service teachers to become aware of the anthropocentric/ecocentric orientations in their individual and collective identities, and this can be considered as one of the first steps in constructing their ecological wisdom and acknowledging the need to strive for inclusion as one of the basic principles of their personal practical pedagogical theories.

In the context of sustainable teacher education, Iliško and Kokina (2003) elaborate on ecofeminism, holism and postmodern spirituality which underscore person's relationship to all creation and call for the development of ecological identity through awareness of self as being deeply connected to the community of life and its support system, as an "embodied spirit that is related to self, others, and the Earth" (p. 12). Thus, ecofeminism is a perspective that emphasises inclusivity, community and spirituality and entails acknowledging diversity and valuing every voice and experience, striving for relatedness, connectedness and interdependence in the world and the classroom as a learning community (ibid.). In the present study, this perspective is discernable in the research participants' ecological identity and can become a reference point for the embodiment of ecological identity in the pre-service teachers' future pedagogical practice and practical wisdom (phronesis).

Salīte and Klepere (2003), in their research aimed at studying the possibilities of action research and transformative learning for reorientation of teacher education towards the strategy of sustainable development, actualised the notions of biotism and abiotism as multi-coloured nuances that characterise in-service teachers' frames of reference. The authors defined biotic attitude as caring interaction between life and its support system and abiotic attitude as reducing the animate to inanimate in relations between people and nature and among people themselves (ibid.). This perspective is close to ecocentric/anthropocentric orientations of teacher identity as previously studied by Salīte (2002). In the context of the present study, the biotic/abiotic nuances can be discerned in the research participants' ecological and unecological identities as care and considerateness in the former case and objectification and inconsiderate use of everyone and everything for the satisfaction of personal needs in the latter case.

The present study describes how, through the exploration of ecological identity, the participants of educational action research became involved in the process of generating ecological wisdom of insight for sustainability (person's inclusion in the life world). It was viewed as seeking deep wisdom for inclusive interrelations with the global community of life and its support system – a wisdom that pre-service teachers need so as to be able to help their pupils become responsible citizens in the community of life and actors of change for a sustainable future. Such (phronetic) wisdom is not quantifiable or expressible in specifically formulated utterances. Yet it transforms something in us; changes the way we see the world around us and make decisions about future course of our activity that are grounded in examination of past experience and oriented towards the virtuous good which would benefit not only us, but also the beings around us. We argue that the way to achieve such wisdom is by seeking it, trying to feel and experience it in the process of participation in open and reflexive dialogue about the deeper meanings of our experiences of interaction with the surrounding world, which is made up by the community of life and its support system. In this case, the focus of reflection was pre-service teacher's ecological identities. By relating the findings of the present study to Mezirow's (2000) suggested discernment of dimensions in a person's frame of reference, we propose that pre-service teachers' ecological/unecological identities (or, in other words, their ecological frames of reference) have the following dimensions – cognitive, attitudinal or emotional (affective), axiological, conative (behavioural), as well as a clearly perceived orientation towards inclusion or apprehended belonging to the community of life and its support system. In the present research, attitudinal and conative dimensions were most pronounced, with cognitive and axiological dimensions being only slightly manifested.

Further research could be undertaken to examine these proposed dimensions of ecological identity more deeply, determining their characteristics and manifestations in each type of identity. It might also be worthwhile to explore other features of ecological person in more detail, for instance, ecological consciousness or attitude towards own and other species as a grounds for seeking ecological wisdom of insight for sustainability. Finally, another implication for further study might be engaging the research participants in another cycle of action and reflection (for instance, during their pedagogical practice placement due two years from now) where they might explore their experiences of teaching for sustainability. Such a study might shed light on the question whether any differences exist between

pre-service teacher's espoused personal practical theories of teaching for inclusion and sustainability and their actual theories-in-use.

Acknowledgement

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INFORMING SOCIETY ABOUT PRE-SCHOOL EDUCATION AND EDUCATIONAL SUPPORT IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

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Abstract

Society qualitatively participates in the implementation of corresponding tasks only when it is informed. An analysis of the National Strategy for Sustainable Development of Lithuania expresses concern regarding shortage of information: information receivers are scantily informed, whilst information providers themselves are scantily informed about actual information needs. In Lithuania, informing of society is carried out in both centralised and decentralised ways, when the state makes certain commitments regarding informing of residents because this information enhances attention to educational institutions, including pre-school educational institutions (as a link of education, social support, support to the family and the child), and encourages the interest of interested groups in the quality of children's education. Seeking to ensure sustainable development, in the name of possibilities of more extensive participation of society in pre-school education management processes, freedom in decision-making, and in the name of the formation of society consisting of active and responsible citizens, it is necessary to analyse the experiences of informing the society. Therefore, the research is orientated towards generalisation of the experiences of informing the society in the European Union countries in the context of sustainable development.

Key words: sustainable development, informing society, pre-school education, educational support, social welfare

Introduction

The National Strategy for Sustainable Development (2003) states that "sustainable development is not possible without extensive participation of society not only solving concrete tasks indicated in this Strategy but also making important decisions with regard to sustainable development at various levels" (p. 42). Qualitative participation of society implementing corresponding tasks is possible only if society is informed. An analysis of the National Strategy for Sustainable Development of Lithuania indicates that there is a shortage of in-

formation: both information receivers are scantily informed and information providers know too little about actual information needs. Therefore, it is stated that "if monitoring of the situation in education is not created and if society is not informed about the actual situation of education, the gap between strategic provisions and reality may increase" (The National Strategy for Sustainable Development, 2003, p. 69). Only when informing of society is improved, participation can improve too; this, in turn, will help to form a society of active and responsible citizens, which will take active part in making decisions that are important both to municipalities and the state.

Social Cohesion Strategy (2004) focuses on social cohesion: the ability of society to ensure welfare for its all citizens, reducing differences and eliminating disunity. Therefore, informing of society becomes particularly relevant seeking lesser differences between citizens, which cause corresponding exclusion. A qualitatively informed citizen has a possibility to be a member of society enjoying full rights and actively participating in its life.

As stated in the Strategy, "the activities of the state in the area of social policy grounded on people's rights turn not into charity or care for the disadvantaged but into a means of ensuring equal rights for all" (p. 51).

The Council of Europe always seeks to implement social rights on the basis of these principles:

- to ensure equal rights for all without any discrimination (equal rights to quality information, considering social polarisation of the society, family diversity that is becoming more distinct (working, non-working, full, single-parent, mixed with regard to language, etc.) and different educational needs of families);
- to provide quality services available to all (knowledge of society about pre-school education and educational support as a quality service);
- to pay particular attention to the needs of vulnerable members of society (families whose children do not attend pre-school educational institutions, etc.);
- to avoid prejudices towards special needs persons (the character of information has to be focused on special needs persons as well);
- to ensure users' participation (users' participation will be ensured only when they are qualitatively informed).

Informed society both ensures social cohesion and contributes to economic growth. "Sustainable development of economy depends on sustainable social development and sustainability of conditions" (Social Cohesion Strategy, 2004, p. 16).

Society is sustainable when its members feel responsibility for one another, and this presupposes formation of the ethics of a new social responsibility. Information has to be distributed in such a way that it is available in terms of content, form and ways to all social groups.

When Lithuania became a member of the European Union, there aroused a necessity to take over the experience of other countries (the old EU countries) and the world. Although it is different from Lithuanian experience, it has many similarities in the countries with the culture of democracy and market economy (what Lithuania became today). Therefore, improving the system of informing society in Lithuania, it is relevant to analyse and use the experience of other countries.

Informing of society is carried out both in a decentralised and centralised way, when the state makes certain commitments regarding informing of residents because information enhances the focus on educational institutions, including pre-school educational institutions (as a link of education, social support, support to the family and the child), and encourages the interest of interested groups in the quality of children's education. At the same time, information containing suitable content provides society (parents and other groups) not only with more extensive participation possibilities in pre-school educational management processes but also with the freedom of decision-making.

Quality informing system is acknowledged as an important constituent of the family support system, which helps to raise healthy and educated children and ensures development of education, increasing availability, continuity and social fairness (The Provisions of the National Education Strategy 2003–2012). This, in turn, has a crucial significance for the development and prosperity of society. Evaluating the benefit of information spread at the national level, it can be stated that available and clear informing system also gives a "surplus value": provides more opportunities for parents, foster parents to work and to earn, which means to improve the economic (taxes are paid, there are less families subsidised by the state), political and social situation of the country (a strong, socially stable family is the foundation of a powerful state). All of it is very significant for the change in teacher training when changes take place not only in teachers' roles but also in the roles of educational institutions. Based on that, the influence of the educational organisation on social and cultural changes of society increases, and education as a phenomenon becomes public, significant both to the very society and social groups that participate in educational processes.

Concretizing the functional purpose of information spread in the pre-school education context, it can be stated that information functions as one of the main means enabling active participation of parents and other groups of society in children's education and care processes.

Information exchange encourages parents' and teachers' partnership relations seeking the common aim: a better quality childhood. Carried out researches (Epstein, 1994; Rutherford & Billig, 1995; Faires, Nichols, & Rickelman, 2002; Jordan, Snow, & Porche, 2002; Marlatt, 2005) demonstrate that, when parents, teachers and other groups of society act jointly, children's rights are more respected. Moreover, the level of children's care and educatedness improves. It is also important to note that children's more successful educatedness is more to be related not to the economic situation of the family but to parents' participation in the children's education process (Riley, Robinson, & Conaty, 1993).

In order to ensure sustainable development, it is necessary to analyse the experiences of informing society both in Lithuania and other countries and use them to open up new opportunities for changes in teacher training in Lithuania. This research attempts to respond to the questions, which in the context of sustainable development, highlight the purpose and functions of informing society about pre-school education and educational support, roles of information providers and receivers, forms, ways, content of informing and peculiarities of differentiating information.

The aim of this research is to generalise and highlight the experiences of informing society about pre-school education and educational support in the countries of the European Union in the context of sustainable development.

Research methodology

The research is based on the conception of education as a social, communicative service that encompasses the diversity of social groups, the systems of their greatest needs. The conception of the educational service encompasses orientation to both the person, his/her individual needs and the general quality features of the service.

The service of education is perceived as exceptional, directed not towards material but ideal product of culture, the creation of which is a long-term process and requires efforts both from the provider of educational services and the user because the user is not just a passive successor of these services.

Pre-school education is understood as the subsystems of the local system of education, which, on the one hand, are characterised by the same characteristics and features as other links of the education system but, on the other hand, are conditionally autonomous, determining the quality of functioning of these subsystems, which conditionally depends on their own organisational structure. Therefore, the very processes of informing residents, which are formed in the organisations of pre-school education subsystems, are like communication tools that disclose the significance of the functioning of these organisations both in the general education system and the society.

Methods

Content analysis, which enabled to compare international documents and researches on the analysed topic, and meta-analysis, which enabled to generalise documents and researches of separate countries on informing society about pre-school education and educational support and to formulate generalising conclusions, were carried out. Applying these methods, an analysis of documents, regulating activities of pre-school education sector of the European Union countries and of sustainable development strategies and concepts was performed. Meta-analysis of the carried out researches enabled to highlight some experiences of informing society about pre-school education and educational support in the European Union countries in the context of sustainable development.

The purposefulness of using the content analysis method was determined by the pursuit to decode certain meanings in the texts of documents and present their interpretations, answering the raised problematic questions. This method enabled to obtain sufficient information about the solution of the raised problem and a deeper analysis of the problem.

Ensuring the representativeness of the carried out qualitative research and actualising the analysed problem, the research results were linked by employing the meta-analysis method. Thus, their joint significance exceeded their separate import.

General features of informing society about pre-school education and educational support in foreign countries

Pre-school education is described as an initial link of the institutionalised system of education, the quality of which is particularly important for further children's teaching and learning at school or in life. The researches of scientists from foreign countries demonstrate that the quality of teaching and learning of children of any age is concurrent with the quality of partnership of interested persons (Bryant, Peisner-Feinberg, & Miller-Johnson, 2000; Fan & Chen, 2001; Henderson & Mapp, 2002). Although parents' participation in the child's education processes is an integral part of their children's further success both helping their children to learn at home and otherwise participating in children's (self-)education processes, parents directly and indirectly also receive a lot of useful information about various child education or care phenomena. This becomes a precondition for the very parents' (self-education and development. The parents who are involved in children's learning learn more about aims, methods of curricula and other teaching and learning procedures followed by their children, understand the importance of children's educatedness better and help their children to understand it (Jacob & Cheadle, 2009), help children to (self-)develop the competencies that are important for them and control the desired result (Grolnick & Slowiaczek, 1994), etc.

Therefore, recently many countries have started to pay increasing attention to the enhancement of interaction relations between the family and the educational institution. Ways of involving parents and society into the processes of formation and implementation of the educational policy are being sought; various researches in this area to increase informing of society in the context of sustainable development are being carried out.

An analysis of the experience of foreign countries highlighted that the informing of society is perceived not only as an integral part of the cooperation system and culture of the educational institution, but also as a part of the national policy of education. Therefore, quite often, both at the national and institutional levels, much attention is paid to information spread to create favourable communicative space and ensure its functioning.

The policy of education in many countries of the European Union highlights an orientation towards the enhancement of relations between the family and the institution. In the free market conditions, information plays a particular role: it creates conditions and possibilities for parents to choose the pre-school educational institution, participate in its activities and management and, for the institution, to compete. In order to be competitive in the free market conditions, there arises a need to differentiate information for different strata layers of parents and society so that it is available and easily understood.

The type and forms of informing society most often depend on the model of parents' participation in children's education system. Beresford and Coft (1993) distinguish two models of parental participation: consumerist and democratic. Main features of the consumerist model are availability, information, choice, compensation (Miller, Harrel, & Morgan, 1998). These two different types of parental participation accentuate different types of information.

Consumerist type user finds it important to get information about provided pre-school education services, their prices, state support, etc. Besides, information is aimed at parents'

successful participation in the labour market and, this way, at making them feel socially stable and protected.

Democratic user of services is more orientated towards direct participation in children's education processes by way of making influence on and controlling them. Therefore, such a user needs information that can help to improve the quality of pre-school education and care services. In the first case, information serves parents; in the second case, it is more directed towards ensuring children's welfare. Users of both participation types are met in foreign countries; therefore, informing encompasses both these trends.

Specific features can be attributed to parents according to their activeness. Parents' participation in the child's education process can be expressed differently.

- Parents are active; they look for information about various phenomena related to their children. Such parents are often members of parents' councils, they take a leading role, are proactive in raising problems and solving various issues.
- Parents are looking for information only when certain problems occur in order to solve them. When such parents achieve the desired result, quite often their activeness reduces, or they withdraw to the role of a passive observer.
- Parents are passive; information is only accepted but no further steps are made. Most often, such parents feel helpless with regard to teachers; they are passive listeners.
- Concrete type of participation influences the activeness of information search and the purposefulness of using the obtained information as well as the intensiveness of solving the child's education or care problems.

Another feature that is common to all countries is the specificity of parents as receivers of information, which depends on the educatedness of family members, and their social and financial status (Petrie & Holloway, 2006). Besides, the very parents' approach towards the importance of cooperation with the children's educational institution is important as well as the level of perceiving this importance, their as educators' self-reliance, etc. Due to lack of confidence, such parents restrict their participation in children's education processes and avoid equal partnership with the educational institution. Teachers most often treat this as parents' unwillingness to take interest in the child's education and care and think that parents delegate all education and care related functions to teachers as something that is taken for granted (Eccles & Harold, 1996).

The standpoint followed by the very teachers and representatives of the administration of the educational institution, the strategy that teachers choose for promoting parents' participation (Addi-Raccah & Ainhoren, 2009), teachers' ability to treat parents as equal partners, seeking the quality of children' education and care, also turn into an important factor.

Having discussed certain general features of parent informing abroad, it is important to analyse them in more detail in the context of the concrete country because a peculiar culture, economic and political situation of the country has a significant influence on information spread and communication culture. Therefore, it is topical to discuss the experience of countries differing in their cultural structure and economic situation with regard to informing interested groups of society about pre-school education and educational support.

Purpose and functions of informing

It can be stated that the informing of society about education of pre-school age children and educational support does not take place in a vacuum space. It is an integral part of the system of education and social welfare of society in a concrete state with all influencing social, political and economic contexts. Therefore, the analysis of diverse experience of the EU countries (of informing society about pre-school education and educational support) is carried out in various contexts that influence the functioning of the system of education of a concrete country.

The purpose of cooperation between educational institutions, society, etc. is to improve children's social, emotional and intellectual education. Therefore, seeking the set aim unanimously, it is very important to find the most suitable ways of understanding each other.

The presented comparative analysis of the early age children's education and care system in the EU (2009, p. 140) states that partnership between parents and educational institutions most often manifests itself through communication with the family when corresponding type of information and concrete advice is provided to it. It can be stated that informing and giving concrete advice for parents in the EU countries is the basis of cooperation between parents and teachers and the most important form of its manifestation. It can be assumed that, in many EU countries, provision of information is the main way of cooperation between parents and teachers. During the last decade, this has become a tendency in the EU countries. For instance, Austria, France, the United Kingdom, Finland and other EU countries seek laws that regulate (or such type documents are being prepared) parental participation, encompassing planning of participation, observation, support, etc. It is assumed that the informing of parents is not an end in itself (informing for the purpose of informing), but helps to solve child education and care related problems.

How is the provided information about pre-school education and educational support differentiated?

When providing information, individual parents' needs are increasingly more considered. For instance, in Finland, Estonia and other EU countries, seeking higher efficiency of provided information, teachers' duties include organisation of educational work with parents, considering specific problems of a concrete child. Therefore, it is important to identify these problems jointly and find the best ways of their solution. Since this requires not only teachers', but also parents' corresponding knowledge and abilities, resources of institutions and organisations providing various educational and social support services are massed in order to meet parents' concrete needs for education and educational support.

Differentiation of information spread considering cultural, social and economic differences of the family becomes more distinct. In Finland and Great Britain, specialists' cooperation with parents, considering the specificity of the family, is regulated by national laws. Besides, these laws enable early identification of every child's specific problems and provision of support in any place of residence.

Varying parents and other family members' approach towards participation in the child's education and care processes and taking responsibility have direct influence on information spread.

Seeking to encourage parental participation in educational institutions, it is important that parents feel welcome and important. Therefore, the content and type of provided information also depends on different attitudes of teachers towards parental participation. Many EU countries have to solve problems of destroying certain stereotypes. Due to certain reasons, programmes of parental involvement into the activities of the educational institution are formal. The following could be mentioned: one part of teachers is convinced that only they and the administration of the educational institution know best what small children need (this knowledge comes from their special education); it is feared that if parents are active, they will criticise their competencies, highlight their weaknesses, and this will weaken their professional status; it is assumed that parents are incompetent to participate in making decisions regarding children's care and education.

Thus, in order to enhance partnership relations, many EU countries apply complex measures and implement various projects that focus on the improvement of information spread and communication possibilities. For instance, in Poland, projects of Citizens' Association for Education are implemented; in Portugal, the project "Reading on the Move" (2008) is implemented; in Estonia, services of various centres are cooperated; in Ireland Childcare Committees function actively, etc.

Due to the economic family situation, children often fall under the so-called risk groups because poverty has a direct influence on children' teaching and learning attainments. Such at-risk families exist in every country, and the number of such families particularly increased recently due to economic crisis. In many EU countries, problems related to information provision for risk groups are actively solved: in Great Britain, Scandinavian countries, Germany, France and many other EU countries at-risk families are supported, applying integrated measures at the national level by providing complex material, financial and social support. In addition to general information, it is very important that such families receive information about where and what social and financial support they can get, who can provide it, what system of preferences can be used with regard to children's care and education. This and other similar types of information are also relevant for families raising disabled children. Their need for information expands due to the child's disability related problems, which can be easier solved with the help of specialists' counselling.

It is important to note that difficult financial situation in the family is often accompanied by psychological problems of people who maintain the family, which are related to the perception of one's role and the possibilities of its implementation. Therefore, due to its publicity, provided information often does not reach such families because it is blocked by the parents. For this reason, it is important that teachers evaluate family situation and choose a suitable strategy for information provision.

The type of support provided by the state determines the need for corresponding information. In different EU countries, early age children's education and care services in the institutionalised environment are started to be provided at varying children's ages. This determines different problems encountered by parents, educational institutions, and the latter, in turn, determines the ways, forms and content of information provision and reception.

In the EU countries, the system of children's social care provides families with social and financial support (covers maternity or parental leave, pays maternity grants, social insurance benefits, maintains a workplace for a corresponding time period, etc). Different countries provide different kinds of support for different time periods, but, in spite of the differences in many EU countries, these activities encourage parents to take care of and educate the child at home at least during the first year of life. Support for parents in the initial child care period is not limited to cash grants and maintaining the workplace. Ministries of Education and Science of many EU countries demonstrate their attention to parents regarding early education and care, which most often manifests itself as informing and counselling services on relevant issues. Usually, these services are provided by primary care medical staff, social workers, teachers of the nearest educational institution, etc. It is provided in various forms and most often visiting the family at home and individually communicating with family members.

What are the roles of information providers and receivers?

In many EU countries, parents have possibilities to choose the type of service provided by pre-school education (full day or half-day, kindergarten or child care centre, state or private type, etc.). When the private early age children's education and care services sector consolidated, in many countries inter-institutional competition enhanced, which inevitably influenced the quality of provided information. Provision of information to society about pre-school age children's education and care services is the responsibility of both the staff of the municipality and other state services and administration, and the teachers of the very institutions. Besides, competitive conditions create preconditions for changes in the quality of informing and choosing more accessible forms and ways as well as for the expediency, purposefulness and comprehensiveness of its content, etc.

Information is provided in a more centralised way in such countries where admission to children's education and care institutions is ensured by the state and coordinated, choosing between state and private institutions, for instance, Denmark, Belgium, Norway, Great Britain (except Northern Ireland), etc.

The main shortcoming of providing information in such a centralised way is availability of information to residents of rural areas or destitute residents who have no possibilities to use Internet services or cannot buy computers, or come to the centres where they could find access to the offered information. Many EU countries look for ways how to solve this problem, for instance, Belgium, Poland, Hungary, Portugal, Germany, Romania and Great Britain. An alternative can be provision of comprehensive information in booklets. Comprehensiveness manifests itself differently in different countries.

The majority of the EU countries pay particular attention to ensuring small children's health and safety both in the family and at the educational institution. This attention is regulated by certain acts, laws and standards at national and institutional levels and helps to evaluate educational institutions in the aspect of children's physical, aesthetic and psychological environment (Denmark, Bulgaria, Check Republic, Spain, Iceland, etc). New requirements that come into force are most often introduced to residents in a centralised way

according to the following sequence: institution that issues laws, municipalities (or other territorial units), administration of children's educational and care institution, teachers, parents. Residents can also get familiarised with information directly on the webpage of a ministry or a concrete institution, with the help of various media, etc. However, when information is received directly, parents often encounter the problem of metalanguage: parents can misunderstand information due to complicated language, possibilities of interpreting legal acts, etc. Therefore, quite often information provided this way reaches a very limited number of users.

Because most often main providers of information for parents are teachers who work with their children, the solution of the problem of "understanding one another" could be facilitated by the teacher's empowerment to carry out the additional consultant's role. Moreover, this need is also enhanced by another feature that is characteristic to all countries: the specificity of parents who receive information. Teachers have to be able to identify reasons for problems and choose strategies suitable for communication with such parents, which would encourage them, develop their self-reliance, trust in teachers and their children's educational institution.

In different EU countries the informing of society about pre-school education and educational support is implemented in different ways. However, it is equally important to all countries that institutions on different levels distribute their roles and responsibilities so that the provided information is not repeated and that institutions do not duplicate their activities.

Forms, ways and content of informing

Partnership between parents and the educational institution as a systemic part of pre-school age children's educational and care functions successfully in a comparatively small number of EU countries (Austria, the Netherlands). This allows presuming that informing is not treated as a systemic unit of children's education and care in the early age as well, and that its manifestation is more autonomous and episodic.

However, in the recent period significant changes are taking place. In early age, children's education and care programmes separate components of parental partnership are started to be perceived as an integral part of the programme. Informing as the main form of cooperation is improving via the increase of diversity of forms and ways, better availability and comprehensibility for various user groups, etc. Based on researches, complexes of special measures are being initiated, etc.

The simplest and the most popular form of informing society in the EU countries is meetings and individual meetings. In Austria, in addition to standard ways of information spread, information evenings for parents are popular, whilst in the Netherlands, the Czech Republic, Portugal and other countries the informing of parents is encouraged by the very parents' participation in group activities and working together with a child at home. Parents and teachers exchange accumulated information in diaries and notebooks, and, this way, supplement one another. Parents and teachers' meetings start functioning as a way of exchanging information, not only of communicating it one-way.

In some countries, efforts are made to ensure that information also reaches such parents whose children are raised at home. For instance, in the Check Republic, Ireland, Belgium and other EU countries these functions are attributed to paediatric nurses that take care of children. They inform parents about children's healthy nutrition and safety, and familiarise parents with the most important features of the child's physical and emotional development. Information for parents is provided more in the form of advice.

Another form of informing parents, which increasingly gains in popularity, is their involvement into the activities of various public movements, forums and organisations that are concerned about small children's matters as well as into councils of educational institutions. For instance, state and private kindergartens of Norway, Denmark, France, Bulgaria, Italy, Portugal and other countries have committees, successfully coordinating the activities of institutions, which are composed not only of owners and teachers but parents as well. Parents' participation is often regulated by state documents. When parents choose teachers and manage expenditures for children's education and care, they become responsible for representing children's interests. This way parents are offered possibilities to participate in making important decisions, which they forward to other parents. In some countries, for instance, in Bulgaria, Italy, Portugal, France and Spain, parental participation opportunities are expanded to participation in decision-making regarding the choice of curricula, to discussions about children's attainment standards, etc.

In some countries, parents' participation is regulated at the national level by foreseeing concrete forms of such cooperation. For instance, in Spain information exchange about the child's activities, attainments, his/her condition at the educational institution and at home is highlighted, parents' meetings with teachers and specialists that are important for them, parents informing and counselling on issues related to child support at home are accentuated. In Belgium, the specialists who visit families raising small children have to record parents' positive sightings and complaints about their activities and generalise them. In Hungary, applying the interview method, teachers have to collect information related to the child they are responsible for, generalise it and provide parents with recommendations.

It is noticed that, in certain countries, the parents are the source of information and counselling. Personal experience and opinion of every one of them can be useful to other parents; therefore, special parental networks are being created for exchanging existing experiences, providing information and advising on participation in decision-making regarding the issues that are important for children. Such networks help to solve problems of activating a broader circle of parents because often only those parents who belong to self-management councils of the institution are active.

In some countries, the formation of networks for cooperation between different institutions in charge of children's education and care and separate specialists is becoming distinct. This way, the involvement of other social groups into the partnership system emerges. In Estonia, cooperation networks between institutions, organisations and separate specialists providing services of health, education and children's rights are being enhanced. Their function is to help parents to solve children's education and care related problems via a complex provision of information and counselling services.

Conclusions

Informed society both ensures social cohesion and contributes to economy growth. "Sustainable development of economy depends on sustainable social development and sustainability of conditions" (Social Cohesion Strategy, 2004). Society is sustainable when its members feel responsibility for one another, and this presupposes creation of the ethics of a new social responsibility. Information has to be distributed in such a way that it is available to all social groups (with regard to content, form and ways).

Informing of society is carried out both in a decentralised and centralised way, when the state makes certain commitments regarding the informing of residents because information enhances the focus on educational institutions, including pre-school educational institutions (as a link of education, social support, support to the family and the child), and encourages the interest of interested groups in the quality of children's education. At the same time, information containing suitable content provides society (parents and other groups) not only with more extensive participation possibilities in pre-school educational management processes but also with the freedom of decision-making.

When analysing the experience of foreign countries, it was found that informing of society is perceived not only as an integral part of cooperation system and of the culture of the educational institution but also as a part of national policy of education. Therefore, quite often, both at the national and institutional level much attention is paid to information spread in order to create favourable communication space and ensure its functioning.

When providing information, increasing attention is being paid to parents' individual needs. Differentiation of information spread considering cultural, social, economical differences of families is emerging.

In different EU countries, informing of society about pre-school education and educational support is differently implemented. However, it is important to all countries that institutions of different levels divide up their roles and responsibilities, so that the provided information does not repeat and institutions do not duplicate their activities. Another feature that is characteristic to all countries is the specificity of information receivers – parents. Teachers have to be able to identify the reasons of problems and choose suitable strategies of communication with such parents, which would encourage them, develop their self-reliance and trust in teachers and children's educational institution.

An analysis of the experience of informing about pre-school education and educational support enables us to state that new opportunities for changes in teacher training open up. Teachers are given new roles, which enable them to work with both small children and adults. When providing information, educational organisations turn into institutions that form and maintain the culture of knowledge in the society. This way the very educational organisation turns into a social structure that supports the processes of changes because it gets involved into the formation of processes of knowledge and knowing and turns into a factor influencing their quality.

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TECHNOLOGICAL SUPPORT AND PROBLEM-BASED LEARNING AS A MEANS OF FORMATION OF STUDENT'S CREATIVE EXPERIENCE

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Abstract

Problem-based learning and technology support for students in higher education investigates the new perspectives of education in connection with the change of life paradigm. The present research seeks to find out what study methods and technology support can be used for developing students' creative experience in the context of education for sustainable development. The research provides an analysis of the main concepts revealing the essence of the study process. The opportunities of using information technology in the study process to meet the needs of students' research activities in the form of cooperative learning are described. The research is based on Dewey and Brunner's theory as a basis of the educational process in the modern world of technologies. Developing creative experiences is a basic concept for sustainable development of education in today's information society.

Key words: creative experience, problem-based learning, information technology, collaboration, sustainable development of education

Introduction

Independent learning and teaching of students and teachers nowadays forces researches to be without boundaries, unaffected by rules of institutions and political influence and oriented towards harmonious personal development. Also, the educational system should change its focus from trying to create ready-made specialists to possibly training specialists for changing life situations and supporting flexible lifelong learning.

By doing this, it is possible to enhance education for sustainable development. Training of highly qualified specialists is only possible in a teaching and education process that increases potential skills, talents, intellectual development and expands students' cognitive outlook while directing them towards lifelong learning:

- to prepare the student to successfully and quickly acquire new information;
- to form skills of orientation in different information structures;
- to develop habits of rational use of available information;

- to develop skills to evaluate and select information from various sources.

Study process of modern sustainable development education includes the use of information technologies (IT), although the possibilities offered by the use of computers in forming interactive links in project work with an anticipated study process result model has not been thoroughly researched.

This research work sets forth the problem: insufficient development of students' creative experience in the study process. The present research dwells upon the formation of the students' creative experience in the process of research activities in high school education using IT and problem-based learning. The present research seeks to work out, give a theoretical justification and evaluate the students' creative experience using problem-based learning, IT and collaboration in study research activities.

A research question is: *What study methods and technology support can be used for developing student's creative experience in the context of education for sustainable development?*

Theoretical background

It is essential in the modern study process to observe the principles of constructivity, interactivity, externalisation and instrumentation, according to Brunner's theory (Dewey, 1994; Bruner, 1996). The perspectives of education are hardly imaginable within the borders of a single organisation or an individual country and determine a necessity for a wider exchange of information, which can be technically provided by IT, provided it serves the needs of society (CEC, 2007). In the study process, it is important to develop basic academic skills and highly organised thinking and problem-solving skills. Learning should no longer be concentrated on individual work (Crook, 1994). Constructivist theory defines learning as an active process in which a student constructs new ideas and conclusions based on previously acquired or actual knowledge.

With the change of the lifestyle paradigm in the process of education and teaching, the student develops a skill to gather information in a negative way. A study process where the main role of the teacher is to present complete knowledge while the students' task is to perceive, understand, remember and reproduce knowledge to facilitate the formation of reproductive cognition, is not effectively enough in facilitating the development of creative thinking. It is a pedagogical problem to optimise the proportion in the cognition process between the ready-made knowledge and knowledge achieved by the student him/herself.

It is important in the study process to develop basic academic skills, highly organised thinking and problem-solving skills. Problem-solving is an important part of the student's work since it is a real test of knowledge and application of principles in new situations.

The creative experience of studying includes the knowledge, skills and attitudes gained and assessed by a student in the process of theoretical and practical cognition, which have become personally important and can be applied in various life situations (Cakula, 2003). Development of creative experiences in the study process is one of the main goals of modern education.

Creative experiences can be developed in two main ways: in real life situations and in virtual life situations. E-learning focuses on virtual life situations. It means three different directions: learning games, learning by analysis of different situations and research work. Structural information technology theory and constructive processes can be simulated with the use of computer (process which coordinates schema). The constructive approach includes programming instructions and managing programmes, for example, hypertext environments and modelling environments.

Problem-based learning, where the student learns while looking for a solution of a problem, has to be singled out when talking about a problem-based study process. He/she is responsible for what he/she is going to learn as well as for an active research activity. Only an action aimed at realizing a goal serves development. In addition to this, a process of socialisation takes place. It is necessary for a student to cooperate in the process of studying in order to form a deeper understanding of the theme and sources. It is important for the student to join the course content in analysis of theoretical sources, form a personal ideological meaning for cooperation with others as positively as possible and increase self-respect concerning the academic practices during joint work in this process. It is important to diminish isolation of a single student and develop a successful cooperation as well as bring down isolation of individual higher schools of education, which is done in the form of different exchange seminars, projects and through IT (Cakula, 2001a). Hence it is important for students to provide a possibility to become aware of and make use of IT, one of the main information collection and data processing means, nowadays, ensuring exchange of information on a much larger scale.

The development of students' personality in the study process is being assessed both from the point of view of the student's psychological as well as his/her social development. Theoretical research and analysis of pedagogical and psychological literature have highlighted important characteristics of student development. It is the formation and development of the creative activity which can be viewed as an end product of a successful study process.

Individual experience in the study process is being formed as an initial meeting of the senses with reality, where individual information processing and understanding takes place, which later develops into a conception of the content of the notion. As a result, individual assessment is being formed and experience gained (Hergenhahn, 1976). The experience analysed in the study is the one formed in professional research activities, which can be acquired at college. A creative life position is formed on the basis of values orientation, the capacity of mental resources, external stimuli and attitudes. In creative work, on the basis of creative skills, creative experience is being formed. Apart from purposeful learning, creative experience comprises assessment of knowledge and skills, and an ability to use them in new situations. Creative experience reveals itself as a new quality of experience.

 The creative experience of studies involves the knowledge, skills and attitudes gained and assessed by a student in the process of theoretical and practical cognition, which have become personally important and can be applied in various life situations (Cakula, 2001b).

Being part of the information age, among other things, also means using IT devices such as PCs (personal computers) for a large number of tasks, mobile phones for quick communications or GPS (global position system) navigation to find the best route for deliv-

ering goods to a customer. As a law of thumb, many students deploy one or another type of technological device in their daily work activities which makes them much more productive. Modern advanced technologies enable and support the processing of large amounts of information within a reasonable time. Many different mobile devices such as personal digital assistants, regular mobile phones, camera phones, personal media players or gaming consoles are being widely used. All of them can process some type of data, media or information. Many individuals, starting from children to grandmothers, use mobile phones to stay in touch with their loved ones. Advanced technologies such as communication enablers (chat rooms, electronic message boards, e-mail, voice and video communications, and the new phenomena – twitter), smart boards, different simulation technologies, thus, have an influential role in education as well. Students' training can be supported by a number of different technologies. The quality of a training course can be enhanced with the support of technological solutions. Also, different information sources can be used to help find solutions (Cakula & Plesavnieks, 2008).

The productivity of process of studying depends on the student's approach to studying and his/her awareness of the study aim. The argument of MacCallum and his colleagues is to model or design technologies which make explicit use of pedagogical models (Cakula, 2003; MacCallum & Kinshuk, 2008). It is possible to involve students in the learning process more productively by using collaboration, new IT and problem-solving.

Research methodology

The base of the research is the study group of 400 social sciences students consisting of day department students of Vidzeme University College Communication and Public Relations, Business Administration department, Politics 1st and 2nd year students, Tourism Organisation and Management department 1st and 3rd year students, Vidzeme University College and Växjö University (Sweden) distance education programme teacher-students. Vidzeme University College is a regional professional college teaching students in four study programmes. The total number of respondents was 400 students and 10 faculty members. Observations and discussions were carried out in 20 student groups before the experiment and within the framework of the experiment. Interviews were organised for 50 students and 10 faculty members during the period of the experiment. A survey was carried out three times. Exchange of electronic messages between the students and faculty was counted and analysed throughout the period of the pedagogical experiment. An additional study was carried out within the framework of a Vidzeme Univeristy College and Växjö University (Sweden) joint in-service teacher-training project where 32 teachers from Latvia and 25 teachers from Sweden took part as students. 50 graduates of Valmiera gymnasia also took part in the pilot study.

The study applies a variety of qualitative and quantitative research methods, corresponding to the subject of the research at various research stages. An analysis of scientific literature in philosophy, education and psychology was performed. The data following collection methods were employed: observations, discussions, interviews, administrative document study, discussions and consultations in one's workplace. An analysis and re-

search of pedagogical situations without the direct participation of the author, including questionnaires and the analysis of electronic reports, was carried out. Empirical data analysis methods have been used – statistical methods of data processing on the level of descriptive statistics and inferential statistics: primary mathematically-statistical data processing methods (results of the research are seen), such as descriptive statistics (tables, charts, etc.) and analysis of the central tendency indicators, and secondary mathematically-statistical data processing methods (hidden correlations are seen) such as hypothesis tests – t-test for two independent means, the chi-square tests for mutual independence of the variables and divisions, tables of summary, factor analysis and correlation.

Research findings

A necessary precondition for successful pedagogical research is that it follows a definite research plan according to its phases. An important part of the course is constituted by the research project based on real-life problems and mutual cooperation using modern technologies, which facilitates a deeper understanding and an ability to combine knowledge, consolidate skills and develop purposeful and persistent work for students as well as to create a positive attitude towards the study process. Experience in working with students demonstrated their inability to use computer programmes and Internet resources in a creative way (Chee & Werner, 2005). Students were good at writing documents following an example, could solve typical tasks, but had problems using these skills to improve other course objectives and solving real-life problems. Difficulties in working out yearly projects were manifested. Problem-solving requires the use of knowledge and principles in a new situation, thus keeping control over and facilitating the real perception of problems by students. IT concentrate on the problem-solving mechanism.

Several research methods were used to distinguish the indexes. Throughout the course, the author of this study observed the students during their class periods and consultation time with an aim to determine the level of content coverage and the ways it influences the formation of the creative experience, and to observe how the level of content coverage was influenced by the use of multiple methods and the shift of the teachers' position. During the observation of students' activities, their cooperation with other students and the teacher was being evaluated. At the end of the course, and repeatedly over a six month period, discussions with students were organised to discover their opinions, thoughts, and ideas. Opinion of individual students offers additional opportunities to evaluate their feelings and emotional attitudes, which is very important in pedagogical research. Consequently, several focused interviews were organised.

During the course, the students completed an independent research project, which offered a solution of a definite problem. This is a very important part of the course that characterises students' creative activity. Therefore an analysis of the approach towards problem solution and the corresponding results is provided.

After completing the computer course where the students could use research work, IT and cooperation, approximately 60% of the students assessed their own results as being on a creative level. Cooperative skills using the computer and programmes were evaluated on

the creative level for 63% of the students. Approximately 73% of the students reached a creative level of problem-solving, adding to the teachers' evaluation results. This describes a situation where the majority of the students have learned during the course to independently find ways to solve, the problem. 70% of the interviewed students can independently find and determine the theme. When applying the knowledge in other courses, the evaluation differs in that the number of students evaluating their knowledge to be at the lowest level increases. Although there are very few of them, the number of students evaluating their knowledge to be at the highest level also increases. The self-evaluation shows a tendency for an increasing number of students using their computer skills in a creative way. Knowledge as a variable in the value scale of students gains more and more significance.

One third of the students use IT to help form their creative abilities in lectures, practical work and in the library. They have improved their knowledge by using modern technologies and problem-solving. Figure 1 shows the results of students' learning while using problem-solving.
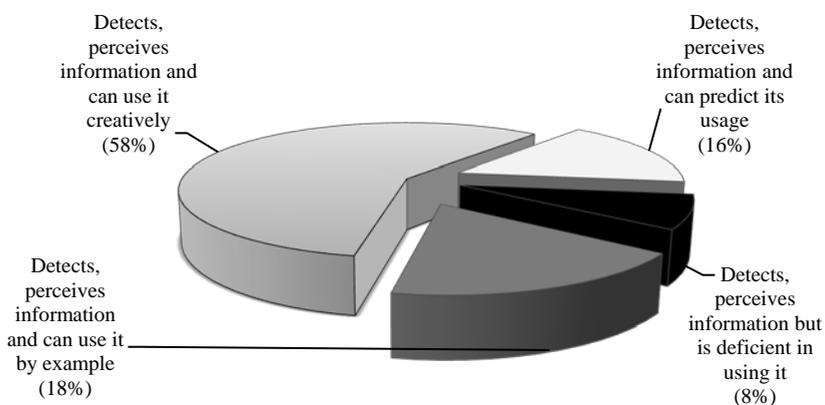

Figure 1. Results of learning while using problem-solving, cooperation and IT

Hence the level of knowledge and skills, explicitness of goals and persistence are determined by problem-solving, cooperation and IT. The correlation of learning by problem-solving, cooperation, IT and the formation of the creative experience is 0.67. It follows from here that the formation of creative experience takes place in the process of correlation.

Students' experience in the study process is being formed and becomes a creative experience in the process of correlation between a definite task of the aim of the cognition, responsibility and persistence in achieving the goal, new knowledge and skills being recognised as values.

The theoretical and operational analysis provides proof to the fact that, while using the problem-solving method, IT and cooperation at all levels of the study process, creative experience is being formed and developed efficiently.

 The best methods for learning the course content mentioned by the students are the following:

- working together with a computer;

- research work based on IT and cooperation;
- lectures with elements of presentation where the material is delivered in a very concentrated way.

Students underline the importance of problem-solving and research work; it helps them develop understanding and create an interconnection between knowledge and skills. All this is very important for future studies.

Satisfaction with the course content and methods, when IT is applied, facilitate the formation and development of creative experience. The hypothesis has been proved that students develop creative experience when engaged in problem-solving. Thus, research work and IT study methods become personally important.

Teachers consider the development of creative activity to be the main study task and understand the necessity of providing students with a basis for self-development. This includes, first of all, independent learning and evaluating this knowledge. It is also important to ensure coordination of courses and the realisation of united ideas in the whole study programme. Being of the same opinion concerning the aims of the programme facilitates the formation of creative experiences and corresponding values.

A significant drawback of modern college courses is their isolation from other courses. This results in either the overlapping the course content or the inability of a course to provide additional knowledge and skills. A computer course has been developed in cooperation with demands of other teachers so that the students could acquire basic skills in finding and using information necessary for other courses independently. Since research projects have been introduced as a part of the computer course, students' skills in writing research projects and the use of a data basis available on the Internet have improved. Students show more initiative in the choice of the theme and approach. The high assessment of the course content and methods is defined by the use of IT when both the computer and the internet are used as means for writing the projects and processing the data, and also as a source of information and a means of communication. Electronically submitted works not only show the end product but also characterise the means of achieving the result, which is an important index characterizing the students' approach and the level of their knowledge and skills related to the reasonable and systematic use of the computer. A cycle of students' experience development is being formed where, on the basis of the initial experience, the course contents and methods are being worked out. Special attention is paid to the research work, the use of IT and cooperation. Students' approach to studies influences their creative experience level. This experience can influence the further development of the student's values system or simply represent a new experience.

Students' cooperation is essentially influenced by their self-evaluations as well by the correlation of the self-evaluation and external assessment. This correlation is characterised by self-feeling. Most of the students give themselves a lower evaluation than their peers do, but the course content and the research project can influence a more objective evaluation. Cooperation and usage of IT facilitates self-evaluation and external assessment, which, in its turn, helps the development of self-control. Systematic self-control increases a purposeful development of a personality towards the formation of a harmonious personality. The study process becomes educational. The use of IT in cooperation has two principal forms:

joint work with one computer and exchange of information via e-mail. Cooperation is in general estimated very highly, although there is a tendency towards higher evaluation of cooperation between the student and the teacher in the IT environment. During the experimental research, the students sent 1 500 electronic messages where each message received the teacher's answer. An analysis of student-teacher messages shows that the biggest group of messages are the ones where students sent in their practical tasks, tests and examinations. This corresponds to the data analysis where students offer the results of the analysis and conclusions (70%). Each such report is followed by the teacher's electronic evaluation which contains assessment, analysis of mistakes and suggestions. In 7% of the instances, such a message is followed by a student's e-mail where the student assesses his/her activity, strong and weak points.

Elaborating reports on a problem, setting the goal and hypothesis of the research in which students describe their personal experience in a definite situation, trying to formulate the problem, the aim and hypothesis comprise 23 % of the messages. 11% are offers to provide solutions referring to the course content, cooperation or information searches with an aim to better understand or test the research hypothesis. In reaction to these reports, feedback is provided; the teacher posits questions or gives comments from her own experience, or models a specific problem. The teacher always gives an answer or reacts to the messages with an aim of helping.

Information technologies provide a more convenient way to collect data and process the needs of research projects. Scientific databases and electronic encyclopaedias are of special importance. It is possible to draw a conclusion that students develop their creative activity if they systematically appreciate and make use of the advantages of IT in their research activities.

Conclusions

The creative experience of a student is the knowledge, skills and attitudes acquired in the learning process as a result of the theoretical and practical process of the study of cognition, assessed and having become values of personal importance, which can be used in different life situations and characterise a student's personality in a new quality.

A student's experience in the study process is being formed and develops into a creative experience in the correlation between a definite goal of cognition, responsibility and persistence in reaching the goal, the acknowledgement of new knowledge and skills as a value from one side and the approach to studies from the other. According to students' self-evaluations, the creative activity positively influences the formation and development of such values as a positive relationship with people, experience and wisdom, an interesting job and career possibilities, responsibility, persistence, knowledge, respect towards people, reasonably spent time, a good rest.

Improvement of creative activity based on IT content and methods ensures the development of a student's attitudes, learning skills, and intellectual, emotional and voluntary balance.

The realisation of the developed study course improves students' individual IT skills, starting with writing a paper and computer presentation followed by the implementation of research methods that facilitates the integration of study contents.   Knowledge and skills alone do not ensure suitability of the student for professional activity. The development of the student's personality during the study process can be characterised by his/her level of creative experience. The research reveals the essence of the creative experience, its characteristic criteria, including the level of knowledge and skills, awareness of the goals, persistence in achieving them and responsibility.

The teacher, with the help of the content of a course and instruction, can create preconditions for developing creative experience. Problem-solving proves that the formation and development of the creative experience is facilitated by research activities, mutual cooperation and the use of information technologies in the study process.

Formation of creative experience influences the development of students' values as well as a shift in the significance of values.

The use of IT increases students' activity, intensifies students' involvement in the study process and ensures active cooperation. Hence, enrichment of study content and methods takes place according to the demands of modern professional needs.

Development of students' creative experience in relation to the modern information society determines their possibilities in the labour market and education for sustainable development.

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PERSPECTIVES OF EDUCATION FOR SUSTAINABLE DEVELOPMENT – UNDERSTANDING AND INTRODUCING THE NOTION IN POLISH EDUCATIONAL DOCUMENTS

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Abstract

The aim of this article is to present an analysis of formal educational documents in the context of the sustainable development notion. This goal was realised by an analysis of the National Curriculum Framework documents from 2002 in comparison with the newest document from 2008. In addition, seven teaching programmes were analysed. On the grounds of the sustainable development definition and in the context of UNECE Strategy of Education for Sustainable Development, a list of direct and indirect linguistic indicators was created. To count the key words, the text editor Adobe Reader 9.0 was used. In the oldest version of the National Curriculum Framework, the key words defining sustainable development or their components occurred 119 times, in the newest – 165 times. The new version covers the scope of sustainable development in a wider range.

Key words: education, sustainable development, teaching programmes, direct and indirect linguistic indicators

Introduction

The concept of sustainable development (SD) occurred in the world as the response to the enormous and very harmful effects of the change in the civilisation direction. Contemporary times force us to face many difficult questions about how we should live not only to assure the quality of life, but also to ensure the world's existence for the next decades.

The idea of SD is currently a quite popular notion which is reveals in many documents on international and national level. But SD is significantly more than only obeying the rules of law. It is about changing the consumer, social, cultural and ecological awareness of every human being. Not only is it the family who influences this awareness but also place of work, media and school society (Batorczak, 2008). Unfortunately, many analyses and observations point out that the notion of SD in the Polish reality, including education, is not well-known (Cichy, 2005; Kuzior, 2005; Batorczak, 2008). It is often identified with topics connected with the environmental protection, ecology or environmental education. Accord-

ing to the report from 2008 (Bołtromiuk & Burger, 2008) about ecological awareness of Poles, only 36% of the respondents pointed the proper definition of SD. A question arises: *Is it caused due to a large degree of effects of the quality and content of school education and the absence of the notion in Polish programmes and textbooks?*

Borys (2006, 2009) shows that educational frameworks do not take into consideration the idea of SD at all, or at a really high level of generality they introduce "any" principle of SD. Perhaps, this is one of the important causes of low awareness level among Polish teachers, pupils and citizens under the scope of SD. On the one hand, thus, the idea of SD itself is not sufficiently presented in educational documents; it is a prerequisite that will let SD issues occur at lessons and school activities. On the other hand, according to Mendel, Dymnicka, Rozmarynowska, Sagan, Zielka and Puchowska (2008), while the Regulation of Education from 1991 refers to the significance of popularizing the rules of SD among children and teenagers at school, these aims are impossible to achieve without all education forms and life school being penetrated by SD idea. Only in terms of treating education as a system we can achieve the goals. In the present article, we tackle how far the contents of formal educational documents undertake the SD issues.

Sustainable development – understanding and defining the notion on the international level

The notion of SD is not always clear. According to Landorf, Doscher and Rocco (2008), over 300 definitions of the concept have been found by Dobson. It can be understood in various meanings and is defined in many contexts. These are the following: as a technical term used in forestry; as an ecological term; finally, as a new definition established by the United Nations – it refers to the development of humanity and of human societies (Di Giulio, 2006).

Sustainable development and its reflection in Polish actuality

In Poland, the idea of SD is widely presented in many documents, acts of law and strategies. It is also introduced in the Constitution of the Republic of Poland: "The Republic of Poland guards independence and inviolability of its territory, ensures freedoms, human and citizen rights and the safety of citizens, guards the national heritage and ensures the environmental protection driven by the sustainable development principle" (The Constitution of the Republic of Poland, chapter I, article 5, p. 2). According to Sommer (2005), there is no direct definition of SD involved in Polish Constitution, but it is strongly in connection with the socio-economic development which has anthropocentric characteristics. The idea of SD is also incorporated in the ordinary legislation acts as in the Act of Law of Environmental Protection. It provides the definition of SD – it "is such socio-economic development in which political, economic and social actions are integrated with preserving the natural balance and stability of basic natural processes in order to guarantee possibilities to meet the

basic needs of particular societies or citizens for both the present and future generations"
(Act of Law of Environmental Protection, article 3, point 50, p. 9).

Education in favour of sustainable development in Poland

Formal as well as informal education plays a significant role in promoting the idea of SD as
a change of socio-economic development. At present, in Poland the school duty refers to
every citizen at the age of 6–18. Since people's awareness, hierarchy of values and philoso-
phy of life are shaped during this period of time, the school institution and contents realised
there with the outcomes of National Curriculum Framework, and teaching programmes are
very important factors which influence the direction of change in future times.

There are only some preliminary analyses concerning ESD in Poland so far. They
show that the notion is rather unknown to teachers. This situation seems to be the same
through the recent years. Not only opinion surveys conducted by the authors among well-
experienced teachers/teaching advisers, but also questionnaires highlighting teachers' inter-
ests of educational offer of SD showed both lack of curiosity about it and very traditional
or colloquial associations with the concept of SD (treating it as synonymic with ecology or
environmental protection). Rather a similar level of awareness and knowledge of SD is dis-
played by pupils. According to Kuzior (2005), they do not have any knowledge of SD.

In the context of the above-mentioned study, it is compelling if this situation is a result
of the lack of this issue in the educational documents or if there are any other causes. In
Poland teachers activities at school are pinpointed by: National Curriculum Framework
(NCF), teaching programmes and textbooks. The most fundamental document is the Na-
tional Curriculum Framework, which is the Regulation of the Minister of National Educa-
tion and constitutes the obligatory law that has to be obeyed by teachers at school. It con-
sists of the educational objectives, school tasks, teaching contents, expected pupils'
achievements and some methodical hints. Teaching programmes, on the other hand, formu-
late what is in NCF in detail. According to the new alterations of the Polish Educational
Act, teaching programmes can be written by the teachers' and may be introduced into prac-
tice relying on the school principal's approval (Polish Educational Act, art. 22a).

The change as a whole is an effect of the complex reform of education, which was
started in 1999. At that time, the NCF as a governmental document was introduced to
which any number of programmes and textbooks might be written. It was under teacher's
decision which of the textbooks accessible on the market he/she would accept to adjust the
teaching content to pupils' needs. As an essential part of the reform, external exams took
place, which tested the level of realisation of educational standards predetermined for the
entire country.

After 10 years of first NCF functioning in 2008, the government introduced a signifi-
cant modernisation of this document making it more detailed. If, during this time, there
would be observed a meaningful change in thinking about education for sustainable devel-
opment (ESD), it should be noticed in the contents of these two documents as well.

Research methodology

The research is based on a quantitative analysis of a number of important educational documents such as National Curriculum Frameworks and teaching programmes. The aim of this work was to find out if the curriculum documents which pinpoint the aims, methods and contents of teachers work at school cover the notion of SD. The present study also seeks to determine how often the notion of SD occurs and on which educational levels, and to which subjects it refers. The researchers were aiming at comparing the newly launched NCF (2008) with the document introduced in 1999, when the educational reform started in Poland.

The most fundamental documents were taken into consideration. There were National Curriculum Frameworks: the Regulation from 2002 and the Regulation from 2008 – the currently valid one. Seven teaching programmes were also analysed. Particularly, subjects such as primary science, biology and geography were taken into consideration. Teaching programmes of the above-mentioned subjects were analysed: one programme of primary science (primary school), one programme of biology (middle school), one programme of geography (middle school), one basic programme of biology (secondary school), one expanded programme of biology (secondary school), one basic programme of geography (secondary school), one expanded programme of geography (secondary school). The most popular educational publishing in Poland (WSiP) was taken. To find out the presence of SD in the above-mentioned documents, the authors constructed a list of direct and indirect linguistic indicators (key words and phrases) on the basis of literature, UNECE strategy and personal knowledge.

The list of linguistic indicators of SD is presented in Table 1 (Appendix). To count the indicators, the text editor Adobe Reader 9.0 was used.

Results

In the National Curriculum Framework (NCF) from 2002, key words defining sustainable development (SD) or their components occurred 119 times. The most frequent were: identity, tradition, critical thinking (Appendix, Table 2 and Figure 1). The rarest among the below-mentioned are the following words: eco-development, local problem and global problem. We obtained no results for: cooperation, participation, poverty and consumption.

In the newest document (NCF from 2008), the key words defining SD or its components occurred 165 times. The most frequent indicators were: identity, tradition, cooperation and social activity (Appendix, Table 4 and Figure 2). The rarest indicator was the word "participation". No results were found for the word "eco-development". In both documents, the indicators "social justice" and "fair trade" present no results.

Direct indicators (sustainable development and eco-development) are found only in the annulled document (for the latter only one result), the number of the former is similar in both documents.

Particular attention was devoted to teaching primary science, biology and geography. It occurred that, in the annulled NCF, the results of indicators were only obtained in middle

school and secondary school, and only in geography (Appendix, Table 3). The analysis also indicates that, in the new document, key words occur more frequently and in a wider number range of teaching subjects (Appendix, Table 5). It is also proved that no result is found for biology in secondary school.

Comparing the number of results of indicators in the annulled NCF with the number of results in the analysed teaching programmes (appropriate for this document), it was observed that, similarly, (in the NCF – 2002 and in the teaching programmes) there is no result for primary science (in a primary school), but, interestingly, it is mentioned in biology in middle school and in geography in secondary school (Table 6 and Table 3).

Taking into consideration the number of indicators and the number of results, a higher number of results was observed for secondary schools in both the annulled and the new National Curriculum Framework. It was also observed that the new version of NCF covers the scope of SD in a wider range.

In the annulled NCF (2002), the indicators were observed in a frame of the following subjects and educational paths:

1. for primary schools: history and society, the Polish language, education of fine arts, a language of the national minority or ethnic group; educational paths: education for living in society, ecological education, reading and media education;

2. for middle schools: geography, knowledge about society, a language of the national minority or the ethnic group, the Polish language, history; educational paths: regional education and cultural heritage in a region, ecological education, reading and media education;

3. for secondary schools: geography, ethics, a language of the national minorities or ethnic groups, knowledge about society, history, the Polish language, a foreign language, the Greek language and antique culture, knowledge about culture; educational paths: ecological education, the European education, reading and media education, regional education and cultural heritage in a region, philosophical education.

In the new NCF (2008), the linguistic indicators were observed in a frame of the following subjects:

1. for primary school: a foreign modern language, history and society, a regional language (Kashubian), a language of national minorities or ethnic groups, fine arts, primary science;

2. for middle school: knowledge about society, biology, a foreign modern language, ethics, a regional language (Kashubian), the Polish language, a language of national or ethnic minorities, fine arts, geography;

3. for secondary school: knowledge about society, geography, primary science (as a supplementary subject), ethics, biology, history, a regional language (Kashubian), the Polish language, a language of national or ethnic minorities, culture, physical education, history and society (as a supplementary subject), basics of entrepreneurship.

Discussion and conclusions

If, in such crucial documents (NCF, teaching programmes), core words related to sustainable development occur quite rarely or do not occur at all, it could mean that the idea of sustainable development is still weakly rooted in the Polish educational system. The only found work on SD related to the Polish national curriculum is written by Kuzior (2005) who showed children's awareness of SD idea regarding the National Curriculum Framework from 2002. The received data have not strongly changed through the years from 1999–2009. Salite and Pipere (2006) who describe Latvian reality of legislation documents taking into consideration the presence of sustainability matters conclude that it is mostly a catchphrase rather than an essential concept leading to a meaningful and responsible human development and sustainable education.

We can presume that a very poor knowledge of SD concept among teachers and pupils in Poland may be the most meaningful consequence of National Curriculum content. From our research a conclusion has been drawn that, despite the fact that the notion of sustainable development occurs in both curriculum documents (NCF from 2002 & NCF from 2008) either directly or indirectly, the results are still scarce. There are such indicators as identity (cultural, international, regional, etc.) and traditions which emerge in many results in both documents, but a wider range of indicator variety was observed in the newest curricular document from 2008.

Two major findings with further recommendations emerged during this research. Firstly, we can observe in a new version of the National Curriculum a small step towards changes. There is no doubt that education has a strong potential in changing the direction of the worlds' development. If we want to think about treating education as a tool for implementing a new idea, we must start from the change of educational documents. Secondly, National Curriculum Framework points out the aims, content, actions of teachers and pupils at school. Even if there are many topics of sustainable development mentioned in education for sustainable development (ESD) and being a part of the formal education, these topics are seen in a way which does not contribute to a wider concept of SD. ESD should include not only knowledge about environment, economy and society, but also issues that threaten the balance in our planet, practical skills which will help people to deal with problems of non-sustainable world in future after learners leave school and inter- and intra-national perspectives such as the ability of looking on issues from different points of view to create a better mood of cooperation (UNESCO, 2005).

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Appendix

Table 1. The list of linguistic indicators of SD and their contexts

Type of indicator	Name of indicator	Context which let to classify the key word as the exact indicator
DIRECT	Sustainable development	It is such a socio-economic development in the world that, according to the "Our common future" report, "meets the needs of the present without compromising the ability of future generations to meet their own needs"; economic, ecological, social and cultural development, ensuring the quality of life of people from the globe, the economic growth cannot exist as the effect of maximizing the exploitation of natural resources
	Eco-development	Understood synonymously with the idea of SD or as a model of a socio-economic development in the world, emphasizing its ecological dimension
INDIRECT	Local problem	Local problems, problems of the nearest surroundings, problems of the school society, problems of the place of living, regional problems, national problems, problems of the country, finding the location and solution for local problems
	Global problem	Global problems of the contemporary world, global phenomena or phenomena existing in a global perspective, which have an influence on peoples' life in the world
	Social activity (social activity, citizenship activity, human activity, citizens' action, citizen-like attitude, citizens' participation)	Human activity in favour of society (local, school, national, European, etc.), citizens' activity and actions in favour of the country, citizens attitude, citizens participation, human activities and its ethic aspects

Cooperation	Cooperation during the lesson, in a group, in favour of local society, the Polish society, to deal with public affairs, cooperation between pupils at school to achieve the aim
Participation	Taking part in a local social life, school life, the nearest surroundings, collaboration with institutions, organisations and pupils to realise the social, cultural, ecological aims; taking part in a public and social life, in events of local environment, important for a school, a region or the country
Social justice/justice between generations /justice between inner generations	Just distribution of goods, just access to the environmental resources, to education, health services, right to a dignified existence for people all over the world, the right of future generations to resources, goods
Resources/renewable resources, non-renewable resources, natural resources, environmental resources, resources of environment	Resources protection, rational management of resources, usage, exploitation of resources
Equation of chances/social inequalities/inequalities of life chances	Equating the educational chances, life chances
Cultural identity/national/ regional/national heritage/cultural/ cultural attachment	Identity with the place of birth, place of living, patriotic feelings, national heritage, cultural heritage, identifying with the culture, tradition, history of the city and country
Fair trade	Products of fair trade, obeying the human rights in the world, people's and children's exploitation, slave labour, just distribution of profits from products exported to richer countries, dignified work conditions of workers in farms
Poverty, hunger	Poverty in the world, unjust good distribution, developmental countries, rich North and poor South
Tradition, local, regional, national, cultural; cultural output	Customs and traditions in connection with the place (region, country), which are the pride of the citizens of society or cultivated through the years by generations
Critical thinking, analysis, critical estimation, opinion towards something	Critical attitude towards information, estimating the results of research, experiments, tasks, different sources of information
Consumption, consumerism, models of consumption	Consuming goods, products, models of purchasing goods, products

Table 2. Results for key words of SD in the annulled NCF (2002) on three levels of education

Name of indicator	Number of results	Primary school	Middle school	Secondary school
Sustainable development	7	0	0	7
Ecodevelopment	1	0	0	1
Global problem	1	0	0	1
Local problem	2	2	0	0
Social activity	9	2	0	7
Resources	8	2	1	5
Equation of chances	4	1	1	2
Identity	62	14	12	36
Tradition	15	6	6	3
Critical thinking	10	2	2	6
Total	119	29	22	68

Table 3. Number of results of key words in the annulled NCF (2002)

Teaching subject	Indicator and its frequency of occurrences
Primary science (primary school)	0
Biology (middle school)	0
Geography (middle school)	2 (resources, identity)
Biology (basic – secondary school)	0
Biology (expanded – secondary school)	0
Geography (basic – secondary school)	1 (sustainable development)
Geography (expanded – secondary school)	4 (sustainable development=1, eco-development=1, global problems =1, re-sources=1)

Table 4. Number of results for key words in the new NCF (2008) on the three levels of education

Name of indicator	Number of results	Primary school	Middle school	Secondary school
Sustainable development	8	0	0	8
Global problem	4	0	1	3
Local problem	4	0	2	2
Social activity	16	2	5	9
Cooperation	21	3	7	11
Participation	2	0	0	2
Resources	10	0	2	8
Equation of chances	8	3	1	4
Identity	44	7	17	20
Poverty	7	1	0	6
Tradition	25	8	5	12
Critical thinking	12	0	4	8
Consumption	4	0	0	4
Total:	165	24	44	97

Table 5. Number of results for key words of SD in the new version of NCF (2008)

Teaching subject	Number of results
Primary science (primary school)	1 (tradition)
Biology (middle school)	2 (global, local problem)
Geography (middle school)	2 (resources)
Biology (basic – secondary school)	0
Biology (expanded – secondary school)	2 (sustainable development, resources)
Geography (basic – secondary school	8 (sustainable development =1; resources = 1; poverty = 4; tradition = 1; consumption =1)
Geography (expanded – secondary school)	8 (sustainable development = 3; global problem = 1; local problem = 1; resources = 2; identity = 1)

Table 6. Number of results for direct linguistic indicators (key words) of sustainable development in teaching programmes for chosen teaching subjects on the three levels of education

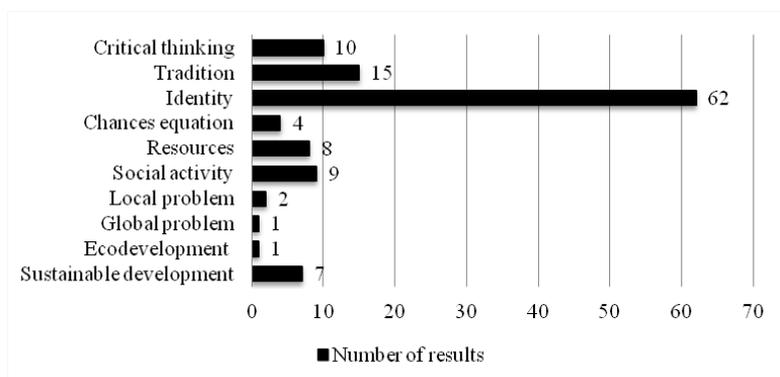| Level of education	Teaching subjects	Indicators	
		sustainable development	eco-development
Primary school	Primary science	0	0
Middle school	Biology	4	0
	Geography	0	0
Secondary school	Biology (basic level)	0	0
	Biology (expanded level)	0	0
	Geography (basic level)	10	0
	Geography (expanded level)	7 a phrase "sustainable growth" occurs twice	4

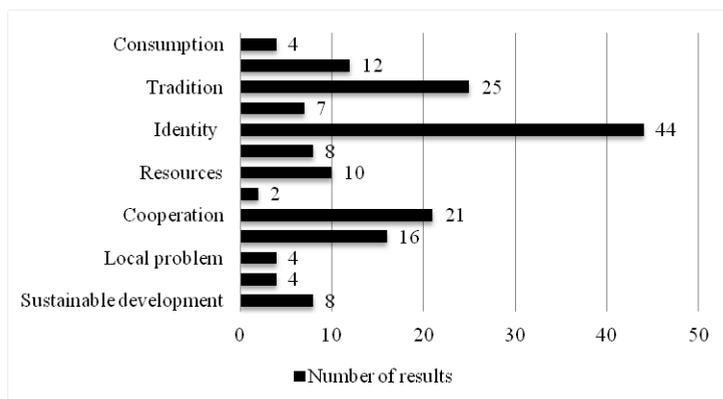Figure 1. Number of results in the annulled NCF (2002) for key words

Figure 2. Number of results from the new version of NCF (2008)

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ENVIRONMENT FOR MEANINGFUL DEVELOPMENT OF READING LITERACY IN PRE-SCHOOL

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Abstract

At a time when the scope and influence of information technologies are rapidly increasing, the development of reading literacy becomes a challenge for teachers. Pre-school teachers have a special role in the development of reading literacy, because children display interest in the written text and the information it holds already in pre-school. It is thus important that the child's first encounter with text be pleasant and exciting, personally significant and applicable for reaching one's goals and satisfying one's needs in everyday life. Hence, the development of reading literacy in pre-school ought to be meaningful, which cannot be ensured in a traditional, teacher-focused learning environment. That is why the paper summarises the best practical experience in a meaningful development of reading literacy. The conclusion is reached that a meaningful development of reading literacy occurs in an environment specially designed by teachers with constructivism as its theoretical basis.

Key words: meaningful development of reading literacy in pre-school, environment for meaningful development of reading literacy in pre-school, expert interviews, constructive learning environment

Introduction

Reading literacy has been posited in Europe as one of the basic competences of the twenty-first century European lifelong learning, the development whereof starts in pre-school and is further improved throughout the process of lifelong learning (Council and Commission joint progress report of 2010 on the implementation of the work program: Education and Training 2010, 2010). Basic competences in the European system of basic competences are defined as knowledge, skills and attitudes (Improving Competences for the 21st century. Programme in European cooperation in school, 2008) expressing a demand to pay more attention, along with knowledge acquisition, in the process of learning to competence de-velopment and a positive attitude as well as to focus on 'real life' solutions. Hence, as re-gards the development of reading literacy, along with the knowledge on how to connect sounds in a word, it is necessary to emphasise the skill of understanding what one reads as

well as enhancing a skilled and interested reader's position. This means that reading literacy is to be characterised as knowledge, competences and attitudes, and its development must be related to children's everyday life and the surrounding environment. Hence the process of reading literacy development ought to be regarded as a meaningful one.

Meaningful development of reading literacy in pre-school can only occur in a holistic, flexible, knowledge, competence and attitude based learning environment (Improving Competences for the 21st century. Programme in European cooperation in school, 2008), the task whereof is not just to teach the techniques of reading but to raise the motivation to read for all children. However, insufficient attention is attributed to the discussions on the theoretical basis of this kind of environment; there is a lack of studies on how to create the learning environment in pre-school for a meaningful development of reading literacy. Accordingly, the aim of the present article is to examine the examples of the best experiences of teachers in Latvia in creating the environment for a meaningful development of reading literacy and set the theoretical basis of this kind of environment.

Meaningful development of reading literacy

Attitudes and meaning in the 21st century education are recognised as particularly significant; for instance, Salīte, Pipere and Grišāne (1998), as well as Belousa (2010; Belousa & Stakle, 2010) regard attitudes and meaning as metacontent, emphasising that it is a content component in sustainable education and thus also a component of sustainable reading literacy development in pre-school.

The necessity for a meaningful development of reading literacy in pre-school became especially urgent in the late 1990s conditioned by three reasons. (1) The extension of the understanding of text (Alexander & Fox, 2004) that was facilitated by the growth of the alternative text forms in the contemporary society – apart from the traditional book and periodical text, pre-schoolers more and more often encounter internet resources, advertisement texts, posters, labels, instructions for using different appliances, rules of table games and other texts accessible in their everyday life environment (Alexander & Jetton, 2003). These alternative, everyday life related text forms become a significant material for the development of reading literacy, which is just as valuable as books and periodicals. (2) A meaningful development of reading literacy gains significance as modern society has extended its understanding of the factors affecting this process. The view that the development of reading literacy is determined by children's knowledge, abilities, socio-cultural context as well as learning environment is supplemented by an opinion that it is also affected by the child's personal motivation, interest and a positive attitude towards reading (Guthrie & Wigfield, 2000). Therefore, in the development of reading literacy, the formation of the child's position as a personally interested reader becomes important. (3) The need for a meaningful development of reading literacy in pre-school is determined by the extension of the understanding of the process of reading – in the 21st century reading literacy development is regarded not just as psychological and physiological processes but also as a process related to social, economic, political and culture aspects as well as attitudes and values (Kerka, 2003; Helminga, 2006; Ntiri, 2009). It means that reading literacy has be-

come an instrument by means of which a child may cognise the external world and oneself, deal with significant issues, communicate with others and enjoy oneself (Kerka, 2003); it has turned into an opportunity to understand and apply those forms of written language that are offered by the respective community and/or which are significant for the child (Johansone, 2003). Hence, the process of reading literacy development is growing into a competence to be developed as a lifelong process (Alexander & Fox, 2004).

The notion of a meaningful reading literacy is used by, for instance, Vale (1995), Gutknecht (1991), Goodman (1996), etc. They consider the development of reading literacy to be meaningful if it is determined by the child's interests or a personally felt need. In such cases, the initiative for reading literacy acquisition proceeds from the child as he/she learns to read meaningfully, i.e. being aware of the importance of reading in his/her everyday life, using it to achieve his/her goals, world cognition, cooperation, enjoyment, new emotional experiences, etc. A meaningful reading literacy entails the development of the child's attitude towards reading as an exciting and personally useful activity instead of just learning letters, combining sounds in syllables, words and sentences and understanding them. In the 20th century, reading literacy was measured by the correctness of reading, speed, understanding and expressivity (Ptičkina, 1999) whereas, in the 21st century, it is possible to talk about a new perspective on the development of reading literacy marked by the focus on the formation of the child's attitude towards reading apart from reading technique and understanding of text. Hence, at the time when, on the one hand, reading has become a significant life competence in a knowledge based society, on the other – books are seriously challenged by information technologies, one's attitude towards reading is acknowledged as an important component of reading literacy as it greatly affects sustainable reading literacy development, i.e. development towards personal and community future.

Hence, the traditional view that what matters in the development of reading literacy is knowledge and competences determined by external standards and provided by the teacher according to his/her own opinions and programme demands but are not related to real life and child's prior experience has been replaced by the view that reading literacy acquisition ought to be initiated by the child and reading literacy must be applicable in real action and be personally significant (Belousa, 2010; Zariņa, 2010). This means that, for a meaningful development of reading literacy in pre-school, a special learning environment must be formed on the basis of the paradigm of learning (Barr & Tagg, 1995), the child's development oriented or humane paradigm (Амонашвили, 1995; Alijevs, 2005), the 'new environment' paradigm (Sterling, 1996), the paradigm of meaningful development (Ясвин, 2001).

What concerns the theoretical basis of the learning environment designed for a meaningful development of reading literacy, it is essential to study the existing experience of pre-school teachers in the formation of this learning environment because, despite the lack of a theoretical basis of the learning environment designed for a meaningful development of reading literacy in Latvia, there are teachers who, proceeding from their teaching experience and personal initiative, are working on the formation of this kind of environment in their groups.

Data collection

Qualitative research methodology was selected in the present article for studying the best experience examples in the formation of the learning environment for a meaningful development of reading literacy because it is inductive, helps understand and account for the learning environment designed for meaningful development of reading literacy and discern teachers' subjective experience (Gelo, Braakmann, & Benetka, 2008).

The present research is focused on the following question: *What features are characteristic of the learning environment created by teachers-experts for a meaningful development of reading literacy?*

To gain the information concerning the set question, a semi-structured expert interview has been selected as the data collection method in the present research, i.e. the questions prepared for the interview were relocated or adjusted in line with the experts' answers (Bogner & Menz, 2005; Meuser & Nagel 2005; Geske & Grīnfelds, 2006; Scheibelhofer, 2007; Litting, 2008). Studying and summarizing the practical experience constructed in the professional action of experts provided an opportunity to make out the features of the learning environment created by the experts for a meaningful development of reading literacy.

Participants

According to Litting (2008), the status of an expert in each particular case is defined by the researcher in accordance with the question set for the research. In this case, the status of an expert was determined by the following criteria: (1) at least five years of teaching experience in pre-school; (2) teaching course and/or classes, and/or seminars for pre-school teachers concerning the issues of reading literacy development; (3) references from children's parents and/or colleagues and/or administration confirming teacher's experience in a meaningful development of reading literacy; (4) mentorship of practical teaching placement for students and reflection of the teacher's experience of teaching reading literacy in students' practical placement materials; (5) research on issues related to reading literacy in pre-school in bachelor, master, doctoral theses and/or research publications; (6) participation in projects related to the development of reading literacy in pre-school.

Expert interview sampling was made by using the non-probable snowball method, i.e. the interviewed experts suggest experts for further interviews (Kroplijs & Raščevska, 2004; Geske & Grīnfelds, 2006; Kristapsone, 2008). This method was selected because it enhances an opportunity to find among pre-school teachers those who in their groups create learning environment suitable for a meaningful development of reading literacy.

In the course of the research nine experts were selected and nine interviews were produced. Detailed characteristics of the interviewed experts are given in Table 1. As the table makes obvious, apart from the work experience, the status of each expert in the formation of learning environment for a meaningful development of reading literacy in pre-school is confirmed by at least three of the above mentioned criteria.

Table 1. Characteristics of the interviewees

	Age	Represented region	Experience of work (years)	Teaching courses/classes/seminars	Parents/colleagues/administration references	Mentoring practical placement of students	Authorship of research and methodical materials	Project participant
Zane	53	Latgale	30	X	X		X	
Ilga	28	Latgale	8	X	X	X		
Galina	52	Latgale	23		X	X		X
Liene	45	Latgale	16		X	X		X
Sanita	56	Zemgale	26	X		X	X	X
Elga	59	Zemgale	27	X	X	X	X	X
Natalja	57	Zemgale	32	X	X	X	X	X
Guna	38	Kurzeme	14	X	X	X		
Daina	61	Rīga	36	X	X	X		X

Agreement upon the most convenient time and place of an interview with the experts was reached by the phone. All the interviews were organised in an informal environment unrelated to the experts' place of work. The shortest interview ran for 44 minutes, the longest – 76 minutes. The experts were asked 15 basic questions concerning their personal experience in designing the learning environment for a meaningful development of reading literacy. The questions were asked about the creation of the learning environment and what in this environment invites the children to get engaged in reading literacy development as well as about the role of the teacher in the creation of the learning environment for a meaningful development of reading literacy. All the interview texts were audio taped, transcribed and analysed with qualitative analysis methods, i.e. they were coded and themes were set according to the codes (DiCicco-Bloom & Crabtree, 2006).

Results

The results are presented by highlighting three major themes: (1) reading material in an environment created for a meaningful development of reading literacy; (2) motivating children in the learning environment created for a meaningful development of reading literacy; (3) teacher's professional competence in the learning environment created for a meaningful development of reading literacy. These themes are further described in detail.

Reading material in an environment created for a meaningful development of reading literacy

Reading material is an important component of the learning environment created for a meaningful development of reading literacy – the various letters, words, sentences and texts created in the group and available to the children. Reading material is aimed at the formation of the child's understanding of reading as a personally interesting, useful and exciting

action and is based on (1) children's interests, (2) children's needs and is (3) personally significant for them.

Children's interest based reading material

The reading material used in the experts' groups is determined by the children's interests instead of external standards or the one that *"the teacher finds it easy to draw, stick and make" (Liene)*. New ideas for compiling the reading material are gained by the experts from the children as they are the ones who are best aware of their interests. For instance, Guna tells that she makes the reading material proceeding from the observation of the children's actions. As the children's interests are diverse and changing, and they are interested in everything that is new, Daina prepares different reading materials for each group of children. Besides, it is important for this material not to be static but to change depending on the everyday life situation and the children's interests revealed in these situations.

Children's needs based reading material

According to Sanita, "*What suits Jānis does not suit Pēteris*". Therefore the reading material must be diverse, so that the children may put it to active use; it must be related to their everyday life, for instance, letters that may be used as dolls – taken to sleep, fed, buried in the sand. The reading material must be such that the children may gain from it the information they need, e.g. menus, posters, billboards, ads, etc. Gaļina tells that the books given to the group "*must be attractive, with interesting illustrations, with little text below making it possible to guess what it is about*". This kind of a book may be read by the children who do not possess reading literacy yet, as they may look at the pictures and tell about them. These are books that make all children feel successful readers. The reading materials ought to be placed within an easy reach for children – where they most often play or pass by. Nataļja tells about this by using a metaphor of strawberries: "*If strawberries are in the fridge, we do not fancy them as much as if they deliciously smell in a bowl on the table. Then it is impossible to pass by without trying them*". Yet Sanita thinks that there should be no exaggeration. If on "*each table it says 'a table', on each chair it says 'a chair', on each switch – 'a switch' and so on, that is too much. Everything is so mixed that the children get wary of the excess of information*". Especially, the excess of information may overwhelm younger children and children from ethnic minority families. Hence, the major aim in the experts' groups is the reading material related to the particular needs of children instead of a diversity of the material conditioned by external standards or correspondence with the demands set for the visual decoration of the group interior.

Personally significant reading material

The experts in their groups involve the children and their parents in creating the reading material, for instance, the children "*circle and colour the letters of Mum and Dad, draw*

faces, arms and legs on them and attach them around the room" (Liene), they make book-lets with recipes of food cooked at home. Parents make books about the child's name, write messages and sentiments. Gaļina says that *"these are the books children love most, they even take them to bed to read before falling asleep"*. This kind of reading material is con-nected with the children's experience; therefore, they remember the text, read or recite it by heart to each other, to the teacher and parents. Instead of focusing on mistakes when read-ing this material, its content is more emphasised, because the child should realise that it is interesting to read. A personally interested attitude towards reading, in turn, will make the child wish to learn to do it correctly.

Motivating children in the learning environment created for a meaningful development of reading literacy

It is important in the learning environment created for a meaningful development of reading literacy to motivate the children to develop reading literacy. The experts do that by (1) as-suming the position of an equal partner of cooperation with children, (2) enhancing the children's interest in the written text, (3) acknowledging the children's achievement and proceeding from it, emphasising the process of reading literacy development, (4) proceed-ing from the social, culture and language experiences of the children's families.

Teacher as an equal partner of cooperation

In the interviewed experts' groups, the children are motivated to learn reading by cooperat-ing with the teacher as an equal partner in the activities based on the children's interests and needs. For instance, when Guna sees that boys start playing with toy cars that have letters stuck to them, she comes up and gets involved in the game. "*We are driving on the table, taking one letter to another and let's see what we've got"*. Thus, the experts, instead of choosing for cooperation the situations according to their own views, observe the children and start cooperation when they show an interest in the reading material.

Enhancing interest in the text

To motivate the children to learn to read, the experts use table games, motion games with the written text displayed in the room, create situations during game classes in which the children develop a wish and a need to read and invite the children to read the calendar to check who has a name-day today, etc. According to the experts, it is important to arouse the children's interest in a book. Their experience shows that it is determined by the content of the book that suits the children and that they find personally significant, with the language matching their prior experience and a suitable time for reading. For instance, Elga considers that the time is unsuitable for reading *"when the child is hungry or tired, or has an exciting game in front"*, while Liene tells that with small children she reads and plays out short texts

with one plot line, but, to the children from ethnic minority families, she explains the most complex words before reading.

Acknowledging the children's achievement and proceeding from their achievement, emphasising the process of reading literacy development

Nataļja points out that acknowledging achievement and proceeding from it is especially important with those children who find it difficult to read. She acknowledges that she *"would not say that the child does not read but support and positively evaluate those actions that he/she does which would lead to reading"*. It is obvious here that the experts relate acknowledgment of the children's achievement to the process of reading literacy development. Ilga thinks that the children are motivated to learn to read not by setting a concrete outcome with a common deadline for all but by an opportunity to learn in game activities and situations related to everyday life. *"Learning to read does not happen like it does at school – on Tuesdays we have maths, on Wednesdays – drawing, on Thursdays – language. Working one day a week is something but much more productive is working for the whole day in an informal environment. The child does not even realise that he/she is actually learning to read"*. Yet emphasising the process in the learning environment created by the experts for a meaningful development of reading literacy does not mean that no demands are set for reading literacy development – in this environment the teacher must assume responsibility both for the children learning to read at their own individual pace and for the formation of a personally interested attitude towards reading.

Using family experience

The experts use the social, cultural and language experience of the children's families, yet they admit that teachers find this experience inconvenient because it differs so much. To respect the family experience, the teachers must change their own views and get adapted also when parents have very specific preferences for the books they want their children to read. Sanita is sure that the teacher is not allowed to say: *"This is wrong, your Mum or your Dad were wrong"*. Family experience is personally significant for children because it is their own prior experience; therefore it seems right for them. Using this experience and proceeding from it, the children are motivated to learn to read recognising the personal meaning of reading.

Teacher's professional competence in the learning environment created for a meaningful development of reading literacy

For the formation of the learning environment for a meaningful development of reading literacy, the teacher's professional competence is of a great importance; it entails knowl-

edge and skills of creating this kind of learning environment as well as the teacher's personal attitude.

Attitude of personal involvement

Apart from the professional knowledge, the teacher's personally interested attitude is very significant for a meaningful development of reading literacy since teachers are not controlled in their everyday work and the pre-school programme of learning is flexible and suggests a free choice of work forms, methods and materials that seem more useful. According to Liene, *"you may do whatever you choose. For instance, you may just give children something to colour and sit around, everything happens according to the programme – you have given them worksheets and pencils"*. Hence, if a teacher fulfils programme requirements, he/she can help a child to master the reading technique but reading literacy development, in this case, has little to do with meaning and the formation of the child's interested personal attitude towards reading. When telling about what helps them develop reading literacy of children, the experts mention *"love towards children and a wish to give them something"*, *"a personal interest in this process"*, *"the human factor"* and *"the wisdom of the heart"*. It follows from the above stated that a teacher is able to help children become aware of the meaning of reading and form their attitude towards the reading material only if he/she comes forth with his/her own attitude and is aware of the sense of his/her work.

Professional skills

The teacher's ability to observe, reflect, evaluate, improvise and react flexibly is important for the formation of the learning environment for a meaningful development of reading literacy. What concerns observation, reflection and evaluation, the experts admit that, in the process of a meaningful development of reading literacy, it is important for the teacher *"to feel, see and understand"*. Elga, for instance, tells that she even makes video records of situations that arise in the process of reading literacy development in order *"to catch what the children find to be the easiest way. Because I realise that all children can be taught to read but you may teach in a difficult or in an easy way"*. Hence, by evaluating, reflecting on and contemplating the observed situations, the experts are looking for ways to teach each child to read in an easy way. As to the ability to improvise and react flexibly, Ilga tells that, for her, it is important *"to keep our eyes and ears open, see what is happening around us and suggest various activities in real everyday life situations, because learning to read is all around us"*. A teacher's skill to improvise and react flexibly determines a meaningful development of reading literacy, that is, the extent to which this occurs naturally, by using the information that exists in the surrounding environment and revealing to the child the significance of this information in his/her life. Though the experts agree that higher education is a compulsory requirement for pre-school teachers, they consider attitude important

in their work as well. According to Zane, *"it is not the paper that counts but what the teacher is like inside"*.

The features of the learning environment designed for a meaningful development of reading literacy are summarised in Table 1.

Table 2. Best practice examples for a meaningful development of reading literacy

Reading material in the learning environment created for a meaningful development of reading literacy	
Matching children's interests	• related to children's games and other everyday life activities • different in each group • changed and supplemented according to everyday life situations and children's actions
Matching children's needs	• matching diverse children's actions • related to everyday life • containing information that children find attractive and useful • with big, bright illustrations and small text amount • placed where children can easily notice and reach it • matching children's age group and language development level
Personally significant	• created by children • created by parents • matching children's prior (social, cultural) experience • content oriented
Motivating in the learning environment created for a meaningful development of reading literacy	
Teacher as an equal cooperation partner	• observing children acting and adjusting the activities chosen by children for reading literacy development • teacher's involvement in activities initiated by children for reading literacy development
Arousing interest in the text suggested for reading	• reading literacy development in game activities • reading the information that children find useful and meaningful • reading books that match children's age group, language development level and are personally significant for them • choosing the right time for reading
Evaluating children's achievement and proceeding from achievement	• recognising and acknowledging each child's achievement in reading literacy development • achievement based evaluation of reading literacy development
Emphasising the process of reading literacy development	• opportunity for everybody to learn at one's own pace • opportunity to get involved in reading literacy development activities throughout all day • using activities based on children's interest and a notion of reading as an exciting and useful activity
Using family experience	• using the language experience gained in the family in the activities selected for reading literacy development • using the social experience gained in the family in the activities selected for reading literacy development • using the culture experience gained in the family in the activities selected for reading literacy development

Teacher's professional competence in the learning environment designed for a meaningful development of reading literacy	
Attitude of personal involvement	• personal involvement and responsibility for the child to develop an interest in reading as well as a wish and a need to read
Professional skills	• skill of observing children's action, interests and needs to notice when and how children are ready for reading literacy development
	• skill of reflecting on the process of reading literacy development, evaluating its personal significance for children and suitability to their needs and interests
	• skill of evaluating the process of reading literacy development in order to orient it towards children's achievement
	• skill of improvising when using everyday life situations for reading literacy development
	• skill of reacting flexibly when using children's initiative for reading literacy development

Discussion

Best practice examples suggest that the environment created for a meaningful development of reading literacy is personally significant for the child and uses a varied reading material which is topical for the children and related to their everyday life. In such an environment, the children are motivated to develop their reading literacy by accepting and supporting their initiative, grounding the development of reading literacy in the children's past experiences and organising it through active involvement in a natural environment and natural situations which are related to the real life. Thus, it becomes possible to conclude that the learning environment created for a meaningful development of reading literacy corresponds to the theoretical basis of constructivism and can therefore be regarded as a constructive learning environment (Brooks & Brooks, 1993; Driscoll, 1994; Murphy, 1997).

Best practice examples observed in preschool groups for a meaningful development of reading literacy align with the idea that in a constructive learning environment (1) the child uses the acquired knowledge and skills for reaching personally meaningful aims (Wilson & Cole, 1991; Murphy, 1997), (2) valuing every child's initiative and personal activity is of crucial importance (Wilson & Cole, 1991; Honebein, 1996; Murphy, 1997), (3) the child's family experience and cultural context are built upon (Cummins, 1986; Tracey & Young, 2007), (4) situations related to the children's real life and authentic reading materials are used (Jonassen, 1999b; Koohang, 2009), (5) cooperation is promoted (Jonassen, 1999b; Koohang, 2009), (6) the children are supported and the necessary help is provided (Jonassen, 1999b; Koohang, 2009), (7) the children's achievements are appreciated and feedback is ensured (Jonassen,1999b; Koohang, 2009), (8) a reading material which corresponds to the children's abilities, interests and needs is created (Jonassen, 1999b; Koohang, 2009).

When creating a constructive learning environment, the teachers should not only know how to teach reading and be able to teach reading; they also need a competence which includes a combination of dynamic features, skills and attitudes (Kennedy, Hyland, & Ryan, 2009). It means that, with regard to the environment for a meaningful development of reading literacy, the perspective on the teacher's professional competence is related not only to

knowledge and understanding about the process of the development of reading literacy but also to the teacher's values, experience of creating mutual relationships and personal attitude, which determine the willingness to do one's duty with quality (Jarvis, 1985).

Along with the conclusions drawn about a constructive learning environment, the best practice examples described in the study also suggest several significant features of a constructive learning environment created for a meaningful development of reading literacy in pre-school. (1) In the constructive learning environment, the teacher's ideas for creating a new reading material are basically gained from observing the children's everyday life actions. This material, thus, in the group is supplemented according to the children's interests revealed in particular situations, (2) the reading material matches the children's language development level and is placed within an easy reach nearby the zone of games; (3) both the children and their parents are involved in creating the reading material; (4) the teacher adapts to the development of reading literacy those activities and games that are initiated by the children in everyday situations; (5) the time for reading is specially selected and for ethnic minority and younger children the books for reading are chosen according to their language aptitude; (6) the teacher is personally interested in the children being involved in the process of reading literacy development willingly; (7) the teacher observes and proceeding from observation, flexibly reacts and improvises, creating diverse situations for reading literacy development in everyday life situations, reflects and evaluates his/her own and children's action and attitude.

The best practice examples used in the study reveal that a meaningful reading literacy should be developed in a constructive learning environment and that the teachers who are working in pre-school groups in Latvia have accumulated experiences of creating such an environment.

Conclusions

A meaningful development of reading literacy entails the technique of reading, understanding of the text and the development of the child's interest towards reading. At the time of a rapid development of information technologies that offer children varied entertainment and opportunities of leisure, a meaningful development of reading literacy in pre-school is especially important to form the notion of reading as an exciting activity and arouse a desire and a need to use reading for reaching personally significant aims as well as develop the position of interested readers. Despite the fact that the theoretical basis of the learning environment created for a meaningful development of reading literacy is only under discussion at present, the pre-school teachers who search for opportunities of arousing the children's positive attitude towards reading are forming this kind of environment intuitively.

The major precondition that helps teachers–experts design the learning environment suitable for a meaningful development of reading literacy in pre-school is their personal willingness to make it possible for the child to learn to read with ease and enthusiasm. Experts' personal attitude also helps develop the reading material that matches the children's interests and motivates the children to learn to read in a meaningful way.

An assessment of the learning environment designed for a meaningful development of reading literacy in the context of constructivism and a constructive learning environment indicates that the learning environment intuitively created by the experts complies with the features of a constructive learning environment and reveals a number of practical aspects of the formation of this kind of environment. Hence, the present paper proves that the theoretical framework of the learning environment designed for a meaningful development of reading literacy is related to constructivism.

The present research may be used as the basis of further research on the degree of compliance of the learning environment designed for the development of reading literacy in pre-school to the experts' experience in the creation of a constructive learning environment for a meaningful development of reading literacy.

Acknowledgement

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