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Editorial

Journal of Teacher Education and Training (JTET) welcomes all the readers, authors and Editorial Board on the publication of fifth issue of JTET.

On behalf of Institute of Sustainable Education and Faculty of Education and Management of Daugavpils University, I express our gratitude to the contributors, Editorial Board, Council of Science of Daugavpils University and printing house for successful teamwork, responsiveness and generous support to the continuation of this periodical.

As usual, the publishing of JTET coincides with the 3rd annual International JTET Conference "Sustainable Development. Culture. Education", which takes place at the University of Vechta, May 22–25, 2005, Vechta, Germany. First two conferences were successfully organized by Daugavpils University in 2003 and Tallinn Pedagogical University in 2004. Many articles included in the fifth volume of JTET represent the most valuable and original contributions from the 3rd JTET Conference participants.

Editorial Board for this issue of JTET includes the representatives from 16 countries who really are of great value for JTET due to their diversity, rich experience and expertise in the field of teacher education and training. JTET also welcomes the new members of Editorial Board and hopes for fruitful cooperation in years to come.

The 5th volume of JTET contains articles reflecting the research, practical experience and theoretical propositions originated in Baltic region, UK and Australia. Since the main topic of the Conference "Sustainable Development. Culture. Education" this year is holistic education, many authors have integrated this approach in their articles dealing with a wide range of issues in teacher education and training.

This issue of JTET starts with the reflection on possibilities to build a sustainable community for teacher professional learning and pre-service teacher education in Australia. Author invites to the discussion and responses to the suggested model. In-depth qualitative research on the reflective teacher practice during the induction year continues the theme of teacher training and education from a different angle. Further, the curriculum integration as a trend of holistic education is discussed through the examples of Latvian and Lithuanian educational systems. Readers can appraise the suggested models and processes and compare them to a similar experience in their own country. Next article analyses the experiential approach to the science teaching in line with the holistic and sustainable educational aims in subject teaching. Also, foreign language teachers have to adapt to the changing world and reevaluate their aims and methods in foreign language teaching as it is described in the following article. Investigation carried out in Tallinn by the researchers from Tallinn University is related to the preschool education and transition to school and shows the need for the close relations between these two stages of education. At the end of the journal, the interesting contribution about parental involvement in the framework of holistic education is followed by theoretical essay on the development of pre-school educational environment in Latvia.

The website of Institute of Sustainable Education www.dau.lv/ise/ is still available for those who are interested in further acquaintance with *Journal of Teacher Education and Training* and would like to be informed about annual conferences "Sustainable Development. Culture. Education". The Institute of Sustainable Development invites you to follow the information about the next Conference and submit articles for this event.

Editor-in-chief: **Anita Pipere**

Teacher Professional Learning and Pre-Service Teacher Education: Building a Sustainable Community

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Abstract

Australia implements a model of 'competency-based pre-service teacher education' where the desired outcome is to maximise the transfer of teaching and learning theory into classroom practice. Theory is obtained from teacher education institutions (universities) while practice occurs in schools. Although there are exceptions, research suggests there is doubt about the ability of this 'teacher training' model to effectively facilitate transfer, yet it dominates teacher education programs. This paper describes an attempt to develop an alternative model of pre-service teacher education, which also incorporates teacher professional learning by building a sustainable community of teacher educators. The effectiveness of the model being assessed in terms of changed attitudes to teaching and learning by teachers and teacher education students and by increased school student motivation and interest in learning as well as achievement in external assessment. Preliminary findings indicate that teachers welcome professional learning opportunities and pre-service teachers are better prepared for classroom teaching.

Key words: *teacher professional learning; pre-service teacher training; community building; sustainable communities; theory and practice; models of teacher training.*

Background

At present, Australia, and much of the developed western world, follows a model of 'competency-based pre-service teacher education' (Korthagen, Kessels, Koster, Lagerwerf & Wubbels, 2001) where the desired outcome is to maximise the transfer of theory into practice (Clandinin, 1995; Wideen, Mayer-Smith & Moon, 1998; Carlson, 1999). Theory obtained from teacher education institutions (universities) is intended to provide students with a broad base of knowledge that can be translated into practice in the school. Many studies (see for example Zeichner & Tabachnick, 1981; Goodlad, 1990; Ashton, 1996; Barone, Berliner, Blanchard, Casanova & McGowan, 1996) have cast doubt on the ability of the 'teacher training' model to effectively facilitate this theory transfer. Although some programs have achieved outstanding outcomes for trainee teachers (see for example Oldfather, Bonds & Bray, 1994; Bell & Gilbert, 1996), the vast majority of

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research cited above suggests this dominant teacher education model is problematic.

In England recent changes have meant that students spend much less time in university and more time in partner schools (Furlong, 2000; Goodlad, 1990; Korthagen et al., 2001; Sandlin, Young & Karge, 1992). One problem with this approach is that the mentor teacher becomes a 'coach' (Furlong, 2000), a model for the student to copy, and the inherent problems of the existing teaching community are perpetuated. Hargreaves & Fullan (2000) have argued that it is unrealistic to expect one teacher to be responsible for initial teacher training and have advocated that this responsibility be further devolved to an informed school community. The university then has a reduced but continued role in assuring the quality of the school based teacher education.

Professional development schools (Darling-Hammond, 1994; Ross, 1995; Bullough & Kauchak, 1997; Levine & Trachtman, 1997), collaborative partnerships between institution-based teacher educators and school-based teachers, are becoming a significant trend in teacher education in the USA (Hess Rice, 2002). In a meta-ethnography of 20 case studies of PDS schools Hess Rice (2002) found that these collaborations often suffer from problems with lack of consistent funding, unequal power sharing between institutions and inadequate clarity about organisation of the new entity. Darling-Hammond (1994) and Castle (1997) also indicate that there are problems associated with the PDS model, such as the dependence upon relationships developed between individuals, which prevent the formation of sustainable partnerships.

In The Netherlands and Canada Korthagen and Russell have implemented what they call a 'realistic' approach to teacher education in an attempt to transfer theory into practice (Korthagen & Russell, 1999; Korthagen et al., 2001). However, this approach relies on a one-year program that includes a substantial period of practical experience at the beginning of the course. A high degree of coordination needs to be maintained between what the students experience in their practice in the school and what is then taught as theory in the university. To accommodate this ongoing exchange the course outlines need to remain flexible. Such radical change is not always practicable within the confines of existing university structures (Aubusson, 2003). In addition, the model relies on the pre-service teacher learning how to master the process of reflection and take responsibility for their growth competence while developing the skills required for their everyday survival in the classroom. Therefore, it can be argued that the 'realistic' model of teacher education is not sustainable in terms of its complexity of organisation, the demands put on teacher educators and the expectations placed on student responsibility and skill development.

In the examples cited above, the models of teacher education only achieve their desired outcomes when money is 'thrown at them' beyond the usual resource level, which then effectively decreases their sustainability.

In a review of New South Wales (NSW) teacher education Ramsey (2000) found that not only did beginning teachers have the least amount of professional experience prior to employment, compared with other professions, they also had very high expectations placed on their performance

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when they entered the profession. Ramsey (2000) also said that the time allocated for workplace professional learning of NSW teachers once they entered the profession was less than that of all other professions. He suggested that teacher education courses operated on the premise that there was a relatively well-defined body of knowledge and skills that pre-service teachers needed to acquire before they started to teach and consequently there was a view that teacher education needed to make limited connections with schools prior to employment and that professional experience in schools was a brief 'trial and error' experience located externally from core course components (Ramsey, 2000). Ramsey saw this view of teacher education as problematic.

Brouwer (1989) found that teacher education students acquired a deeper understanding of learning and how to promote learning when there was a tighter coupling of theory and practice. Brouwer, like Ramsey, concluded that there should be a closer link between universities and schools in teacher education programs.

Dever, Johnson and Hobbs (2000) and Tauer (1998) showed that teacher involvement in pre-service teacher learning aided teacher professional development. This finding is consistent with a recent review of teacher education in Finland which suggested that schools will eventually be required to provide professional learning for teachers as well as pre-service teachers and that this service may be monitored in terms of how universities and schools act as partners in the delivery of a broader based educational system (Jussila & Saari, 2000).

Poom-Valickis, Saarits, Sikka, Talts and Veisson (2003), drawing on the work of Buchberger (2000), suggest that one of the main problems facing pre-service teacher education and teacher professional learning is the lack of continuity between the two. They suggest that teacher education:

- is focused on teacher education in universities rather than on continued learning throughout a professional career;
- ignores the high level of assistance required by beginning teachers to acclimatise to the school and teaching culture and develop a supportive professional base;
- is viewed as discrete entities with little connection between pre-service, in-school and professional learning experiences;
- does not effectively articulate connections with education in general, schools, staff development and school development and improvement; and
- does not effectively connect with research and development.

Bulajeva (2003) conceptualises teacher education as an open and dynamic system consisting of closely interrelated components such as: initial teacher education; induction into the profession; in-service teacher education and professional learning; self-education; school development and improvement and research. This is an ecological view of teacher education, which recognises the interconnectedness of the part to make the whole. It sees teacher education as multiple, over-layered communities, each identifiable yet connected to each other, impacting on each other with each informing the identity of the others.

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Bulajeva (2003), Poom-Valickis et al. (2003) and Buchberger (2000) are advocating that student-teacher education be repositioned as part of a system of teacher education with less identifiable borders and greater interaction at the edges. It is not being suggested that teacher education should lose its identity and become part of a blurred picture, but that it should be redefined as one part of a larger, more cohesive view of teacher education.

This paper proposes a model of teacher education that goes beyond those critiqued above. The emphasis of the model is on using community building to promote both teacher education and pre-service teacher learning within a school-university partnership. This paper also describes a research project to evaluate the implementation of this model of teacher education. The intention of the paper is to provide food for thought for the teacher education community at what is still an early stage in the evolution of this new approach to making teacher education part of a more holistic system.

The model

The purpose of the current project is to position pre-service teacher education within a continuum of teacher education, specifically with regard to enhancing teacher professional learning. It is envisaged that teachers will take greater responsibility for educating student teachers, acting as a community and in collaboration with university staff. This will facilitate the transition to teaching for pre-service teachers enrolled at university and, at the same time, promote the professional learning of teachers in schools as well as teacher educators. The model being developed will function to assist the partners (university and cooperating schools) to draw on their individual strengths to collectively build a community (functioning at a number of different levels) focused on quality education for pre-service teachers that naturally results in teacher professional learning and which is consistent with a holistic view of teacher education. It will enable pre-service teachers, teachers and academics to achieve their individual goals in a collaborative and tolerant environment, thereby achieving equitable outcomes that promote an interdependent and mutually supportive community of experiential learning. The model will also be sustainable, so that the collaboration will roll over into following years with successive groups of pre-service teachers.

Strength of the proposed model is that it uses existing university and school structures and procedures. Pre-service teachers participate while enrolled in their normal course as determined by the university. The teacher educators are those who normally take part in the teacher education process, namely university lecturers and school staff. The aim is to realize and continue to develop the expertise of existing staff. If the collaboration is to be sustainable over a number of student cohorts, the demand placed on individuals has to be consistent with their ability to sustain continued and active involvement without over-taxing their time and energy.

The outcomes to be achieved by the model are:

- professional learning for all personnel involved;

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- the completion of a set program of learning for pre-service teachers, which includes block professional experience; sometimes known as practicum or in-school experience; and
- improved school student outcomes in terms of attitudes towards study and performance in external assessment.

Achieving these outcomes will lead to the dissemination of contemporary views of teaching and learning and the promotion and development of quality teaching practices within school contexts. In turn, this will promote improved school student attitudes towards study, and engagement and performance in examinations.

The model developed will facilitate the transfer of theory into practice through experiential field-based pre-service teacher education and enable individuals to build a sustainable community of professional learning. Teacher expertise will be synergistically focused along with academic expertise to impact on pre-service teacher learning. This will enable the knowledge, understandings and experience of both teachers and academics not only facilitate pre-service teacher learning but to influence each other. The result will be continuing growth and development for all. Teachers will increase their learning and application of contemporary learning theory while academics will have the opportunity to refresh their understandings and influence the changing contextual school-based realities of classroom teaching.

Achieving a sustainable model for teacher and pre-service teacher professional learning is an ongoing and evolving process. It will necessarily take into account an interdependent and complex community or system, and respond to ecological critique and research to promote learning as constructivist, collaborative and lifelong. The process should manifest as a functioning learning ecology that grows to promote transformation of participating individuals (pre-service teachers, teachers, school students and academics) as well as the teaching community in general. It is anticipated that such a process may enhance the commitment of teachers to teaching that is more engaging of students and therefore may serve society better as a whole.

A principle, which underpins the development of the evolving model, is that of community building. Effectively, building a community is a way of networking social capital (Renshaw, 2002). The success of one member of the community is dependent on the success of other members. Promoting oneself – learning, or even promoting others – helping them to learn, becomes networked throughout the community. The result is that the community, as a whole, benefits and individuals also benefit at an enhanced rate through mutual promotion. Consequently, membership of a community provides access to a variety of social capital (Renshaw, 2002). Such capital includes knowledge, skills and 'know-how'. A purposeful dissemination and sharing of such capital can be a useful community-building tool with individuals recognising their increased capital and actively enhancing the community building process. This cycle of capital enhancement can be powerful in the social learning process, particularly when such processes are acknowledged as being complex and treated with the respect generally accorded such intricate social structures (Renshaw, 2002).

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As the model is implemented communities will be established at a number of different levels. A community of learners will be established at the school department or faculty level. This will typically involve the school department staff (but perhaps not all), the pre-service student and university staff. The next level or layer of community will be across a few schools where there will be interchange of ideas to varying extents. The next level of community may be all the schools implementing the model within the same district, or within the same educational system. The next level or layer of community may be one, which includes professional organisations. As time passes people will move in and out of communities at different levels as needs determine. Each individual in the system will access and interact with a community or communities as their needs and the needs of communities change.

The model being developed for this part of teacher education is different from those critiqued in the introduction. Table 1 shows the features of the model that are different to those outlined above and the reasons for the differences. However, it needs to be emphasised that the model proposed is a starting point and that an aspect of this process and the purpose of the research is to actively evolve and refine the model as it is implemented. As an aspect of the model is refined, the model as a whole may be changed. This may result in associated changes that may impact on other aspects of the model. In this way the model will continuously evolve.

Table 1. Features of the proposed model of teacher education

Model feature	Model rationale
1	2
Teacher education is nested in a holistic model of teacher professional learning.	Teacher education should not occur in isolation from the teaching community if 'good practice' is to be carried forward and sustained when pre-service teachers become teachers.
The resources that support the model are derived from within existing systems and structures.	The model has to be sustainable and continue to exist and evolve in its own right over a period of time. It must be responsive to changes in policy procedures and competing needs of partners. The community cannot be continually searching for outside funding.
Theory and practice are learnt in synergy, minimising the emphasis of one over the other in different contexts.	The transfer of theory into 'good practice' is maximised and sustained when the contexts of the major learning environments are part of a common system.
The passing on of 'good' teaching practice is not solely the province of universities or teachers, but is shared between partners with different experience and expertise.	The inherent problems of the existing practices in the teaching community are perpetuated if knowledge is simply passed from one generation of teachers to the next in an apprentice model. When different expertise is introduced, as part of the system, this undesirable outcome is minimised.

Sequel to Table 1 see on p. 9.

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Sequel to Table 1.

1	2
Dependency upon personal relationships is reduced.	Although the development of relationships between individuals is essential for any collaborative human endeavour, success should not be dependent on personal relationships but be a function of an integrated and self-supporting system.
The model is not overly dependent on individuals mastering difficult processes like critical self-reflection and taking responsibility for growth competence while developing the skills required for everyday survival in the classroom.	Although the processes of critical self-reflection and taking responsibility for ones own learning are important, they put great demands on teacher educators and pre-service teachers, especially when they must be acquired in addition to learning the pedagogical content required for survival in the classroom. A model of teacher education should not be dependent on pre-service teachers mastering skills that experienced teachers find difficult to implement.
The model promotes participating faculty, teacher and academic professional learning.	Teachers and teacher educators refine their views of 'good practice' while assisting pre-service teachers to build their knowledge as part of the community.

The partnership

The central principles of sustainability and enabling communities, as outlined earlier, will guide the partnership between the university and schools as the model evolves and is refined within existing university and school systems, structures and frameworks. This increases the chance of forming an entity that is responsive to the needs and resources of all involved. The equity partnership will be overseen by a committee composed of a:

- school principal nominee;
- Department of Education nominee;
- university nominee;
- pre-service teacher nominee; and
- school teacher nominees.

It is the responsibility of the committee to guide the development of the partnership, resolve problems and actively source resources, within existing structures and systems, to implement the model. The committee is reconstituted at the beginning of each school year and reports at the end of each school year (Note: The precise functions of the committee are negotiated each year).

Model implementation

The majority of pre-service teacher learning associated with the model will take place in schools. Pre-service teachers will undertake compulsory block professional experience in schools. While undertaking professional experience, the emphasis for pre-service teachers will be classroom teaching as is the usual practice during field-based professional experience.

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Pre-service student teachers

Students will participate in a variety of activities when in schools. Some of these will include:

- teaching classes or parts of classes;
- finding out alternative ways to teach specific concepts;
- participating in team teaching (a number of teachers taking turns to deliver specified components of learning experiences);
- helping with administrative tasks (field trips, organising experiments or classroom activities);
- observing lessons;
- formally seeking advice about teaching and classroom lessons; and
- completing set tasks.

These activities should be seen in the context of providing pre-service teachers with contemporary 'good practice', as suggested by relevant literature, in classroom teaching and have learning as a priority.

Pre-service teachers are not necessarily allocated to one teacher. Rather, they should be a resource for the whole faculty and be viewed as a collegial, shared responsibility and so contribute to an environment of community building. At times a number of pre-service teachers from across participating schools could be present at one school for a specific purpose and then move to their 'home' school. In this way pre-service teachers are encouraged to see themselves not only as part of a single department but as part of a broader collegiate. Each department, particularly the Head Teacher, may need support in establishing this collegial team. The reference group will take a leadership role to facilitate this process. This will provide Head Teachers with a sense of ownership and control as well as some support when unexpected and different situations arise. This should build multiple professional connections, increase professional interactions and improve the quality of learning experiences for everyone including school students.

University staff

When pre-service teachers are in schools, university personnel will participate in activities undertaken by the pre-service teachers. However, their role is more mobile, moving from school to school but establishing themselves as more than just transient visitors. They are responsible for coordinating student time and participation, rather than passing this additional responsibility on to Head Teachers. University staff will actively contribute to a collegiate teaching and learning culture during their visits to schools. More effective involvement in the classroom can only be achieved if activity is related to an interdependent research project.

School staff

School staff is active contributor to the overall process. Some of their tasks will be to:

- facilitate pre-service teachers in teaching classes or parts of classes;
- provide research tasks for pre-service teachers (finding out alternative ways to teach specific concepts they could use in their classes);

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- provide opportunities for team teaching;
- allocate administrative tasks (field trips, organising experiments or classroom activities);
- provide opportunities for pre-service teachers to observe lessons;
- provide advice about teaching and classroom lessons; and
- set specific tasks.

Research findings indicate that the teacher is the most important factor in student learning, and so this project will place its primary emphasis on pedagogy. The driving force behind this project is people – not a single person but a collegiate of people interacting in a professional learning environment to help each other improve practice and achieve desired outcomes for students and build a community of learners. Teachers, as experienced practitioners, will act as 'mentors' assisting pre-service teachers with their pedagogy. It is anticipated that the mentoring process will be organic and arise from normal teacher/pre-service teacher discourse so that it does not take up additional time. The partners, namely the university staff, student teachers and other teachers in the collaborative community, will support teachers in their mentoring role. In the early stages of the model implementation it is recognised that pedagogy transfer may not always be consistent with what teacher educators might define as 'good practice'. However, the basis of the model is that as community interactions increase and professional learning evolves, the use and transfer of 'good practice' pedagogy will also increase.

Teachers

Teachers will not be 'absent from class' when implementing this model. The teacher is part of a team of professionals actively engaging in learning and providing a learning environment for others. For much of the time this is an informal process, and the pre-service teacher is included in the classroom routine. However, at times the process may be more formal. For example, a teacher may wish to prepare and take a seminar or act as a mentor to a larger group of students. The teacher is paid for this and pre-service teachers from all participating schools may attend. In this way the teacher will not only contribute to their professional learning, but also overtly provide a learning experience for others. Other teachers could also actively participate in this learning (mentoring) environment. This type of teacher learning and experience could contribute to postgraduate qualifications as part of a MEd or even a research qualification.

The research

The implementation of this model is the subject of ongoing research to evaluate the efficiency and effectiveness of the project in achieving its outcomes and to provide feedback for the ongoing development and refinement of the professional learning process. The main focus of the research will be the assessment of the model's sustainability and the degree to which it enables individuals to access and operate within a community or communities and realise their professional learning needs. Thus the questions to be addressed include:

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- To what extent does the model contribute to teacher professional learning?
- How successful is the model in providing sustainable and effective education of student teachers?
- Does the implementation of the model result in improved outcomes for school students? and
- How effective is the model in promoting community building?

A qualitative approach will be used to obtain a deep insight into these questions. As suggested by Denzin and Lincoln (1998), qualitative research involves a variety of data gathering methods so that a tapestry of evidence is pieced together to form a "bricolage". The research on the implementation of the model will combine data from interviews, observation, collection of documents and questionnaires. The data will be coded for common themes (Erickson, 1986) and the validity of the assertions derived from these themes will be assessed by systematic reference to the original material.

The sample for this study comprises one cohort of eight student teachers, the staff and students of the eight partner schools where teaching experience is to be conducted and the teacher educators involved in implementing the model. Teachers, pre-service teachers and university staff will be interviewed at the beginning and end of the academic year. The interviews will focus on establishing views of teaching and learning, and determine if they change over time. Interviews will attempt to establish reasons for views and changes in views if they occur. Some teacher and pre-service teacher lessons will be observed by university staff and/or teachers involved in evaluating the model. Lesson plans and student teacher assessments will be collected where relevant. Field notes will be kept at all community events related to the teacher education program.

The teacher education program at the university incorporates a parallel group who are undertaking the same course but are not involved in the project described here. Four of these students will be selected at random and asked to participate in the research so that comparisons can be made between their classroom teaching and those of the pre-service students in the project. Both interview data and classroom observations will be compared.

To determine whether the model is effective in improving outcomes for school students, a random sample of students from the partner schools will be surveyed about their attitudes to school classes. All students who are taught by pre-service teachers will be asked to complete a questionnaire constructed from existing instruments measuring attitudes to classroom learning. A randomly chosen sub-sample of school students will be interviewed about their attitude to science classes. The questionnaire and interview data will be used to map changes in attitude to classroom learning over time.

If the initial implementation of the model is successful and further study is warranted an analysis of external examination results for school students will be conducted, to see if there are changes in student achievement. External assessment data will be from state examinations and not school assessments. This will require a much longer time frame to account for

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variations in school student cohorts from year to year. Data showing the retention of students in subjects as they move from junior secondary, where subjects are compulsory, to senior secondary, where subjects are elected, will also be analysed.

All participation in this research will be voluntary and in accordance with ethical guidelines set down by the university. Pre-service teachers will be assured of confidentiality of all written material. Pseudonyms for schools, teachers and students will be used in all reports.

Preliminary findings

At this early stage in the model development and implementation only the first round of interviews with teachers and student teachers has been completed. Some lessons by teachers and student teachers have been observed and teacher educators have initiated the community building process. It is too soon to submit the data obtained to formal analysis. However, even at this early stage four preliminary findings are emerging:

- Teachers are interested in personal professional learning, especially when their existing level of expertise is recognised as a starting point;
- Teacher time is at such a premium that the incorporation of professional learning, in addition to normal teaching requirements, is difficult;
- Experienced teachers concur with teacher educators about what 'best pedagogical practice' is (e.g. student centred learning, a constructivist approach to teaching), but it is not often implemented;
- In order to implement 'best pedagogical practice', so that students are engaged, it is necessary to anticipate the variation in how students will respond. It is important to develop classroom management systems, structures and strategies that can be implemented in response to the variation in student reaction to changed pedagogical practice. To assume that the same management systems, structures and strategies will complement new and different pedagogies is problematic.

The findings listed above serve only as an appetiser for future papers on this research. The purpose of this paper has been to engage the education community with the idea that there can be a synergy between pre-service teacher education and teacher professional learning. It is anticipated that the author will receive feedback on the ideas presented.

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Developing Reflective Practice in the Classroom: A Case Study of Ten Newly Qualified Teachers During Their Year of Induction

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Abstract

This research project is located within the present context of raising standards in education in England through improving the quality of teaching. It is concerned with the professional development of ten newly qualified secondary teachers during their induction year, focusing on the strategies employed by them in their endeavour to become effective teachers. The way in which they analysed and articulated their practice in the classroom provides an insight into their perceptions of good teaching and how they strive to achieve this goal. Data collection took place by means of semi-structured questionnaires and interviews, thereby locating the study within the qualitative paradigm. The findings of this study should be of interest to all those working with newly qualified teachers during their first year in teaching as well as policy makers responsible for the induction framework.

Key words: *induction; newly qualified teachers; developing teaching competence; reflective practice; tacit knowledge.*

This paper is concerned with the experiences of ten newly qualified teachers during their first year in teaching in their endeavour to develop into effective classroom practitioners and is based on findings from a study evaluating the implementation of the statutory induction programme for new entrants to the profession in secondary schools in England. Prior to 1999, the provision of guidance and induction support for newly qualified teachers was described as 'extremely patchy' (STRB, 1993:46), generating widespread, severe criticism of teaching and teachers by the government and the media and putting into question the quality of initial teacher training and how well it prepared newly qualified teachers for the challenges of every day teaching. Its integration with continuing professional development, particularly during the first year of service, was identified as an area in which improvement was required (EEC, 1997: xxx). Since September 1999, newly qualified teachers enjoy a statutory entitlement to an induction programme during their first year in teaching, which is intended to act as 'a bridge from initial training to establishing themselves in their chosen profession' (TTA, 1999: 3) and at the same time allocates new teachers an

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active role in managing the transition from initial training to professional practice. As such it is to create 'a foundation for long-term continuing professional development and career development of teachers' as well as to contribute to 'schools improvement and to raise classroom standards' (DfEE, 1999).

The findings of this study reside within the paradigm of student teacher development, notably the two five-stage models presented by Berliner (1998) and Furlong and Maynard (1995) respectively, which focus on cognition underlying teachers' classroom behaviour particularly at stages 1 and 2. Accordingly 'novices' are relatively inflexible in their conscious employment of context-free practices, while 'advanced beginners' tend to rely more on their experiences and develop strategic knowledge (Berliner, 1998). At the same time, their teacher behaviour reflects a high degree of 'idealism', which in the face of the reality of the classroom rapidly gives way to a preoccupation with 'personal survival' (Furlong and Maynard, 1995).

By presenting the findings from the perspectives of the ten newly qualified teachers, an insight is provided into the way in which they analysed and evaluated their day-to-day practice in the classroom and developed the knowledge and skills base which informs their professional practice. In spite of the ubiquitous pressure of having to achieve a 'pass' at the end of their induction period, they demonstrated a high degree of critical self-evaluation and a willingness to explore new, uncharted territory. However, in order to ensure the approval of their more experienced colleagues, assessors and Induction Tutor, they may, at times, have been tempted to operate within a repertoire of well-rehearsed strategies and techniques, opting for emulation rather than experimentation.

With the introduction of a standards-based framework for initial teacher training (DfEE, 1998) and induction (DfEE, 1999), assessment of the competence of trainee and newly qualified teachers has become outcome-related, promoting the view that teachers are not born, but made. However, none of the newly qualified teachers participating in this study shared this view unreservedly:

> *'There is a kind of natural element there. [Good teachers] are born and then developed. […] You ultimately are reflective.' (Chris)*

Indeed, the complex nature of teaching competence and the reflective element inherent is highlighted in the Hay/McBer Report, which concludes that teaching takes place in a wide variety of contexts and circumstances and it therefore dependent on the selection of appropriate 'approaches from a repertoire of established techniques' and professional characteristics, such as 'analytical and contextual thinking', 'flexibility', 'initiative', and 'impact and influence' (2000, paragraph 1.3.3/4). Consequently, newly qualified teachers require adequate guidance and support in developing these characteristics by striking an appropriate balance between acquiring routinised skill and engaging in reflective practice.

Methodology

The purposive sample of respondents consisted of ten newly qualified secondary teachers of modern foreign languages, who were amongst the first

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cohort to undergo the statutory induction programme introduced in England in September 1999. Adopting a case study approach was considered an appropriate strategy in methodological and epistemological terms, as the phenomenon to be studied, i.e. the induction process of ten newly qualified teachers, is located in a real-life context (Yin, 1998) and is presented from the perspectives of those involved. In its 'search for meaning and patterns' (Stake, 1995:78) case study can provide the scope to accommodate a range of perspectives, presenting detailed information from a range of sources about a particular individual, group, institution or phenomenon (Sturman, 1994) and includes accounts of the subjects themselves (Hammersley, 1989).

Data collection took place by means of semi-structured questionnaires and interviews. Participation in this project was voluntary and was based on the principle of informed consent. To protect the identity of the ten newly qualified teachers, gender-neutral pseudonyms were used. It is the aim of this study to report the findings from the perspective of the newly qualified teachers and as such is firmly located within the qualitative research tradition. Although the relatively small sample cannot claim to provide the breadth of data to represent the experiences of all newly qualified teachers in England, it can nevertheless provide us with valuable insights into how newly qualified teachers use a variety of strategies in their endeavour to develop their teaching competence.

You can't put it in a bottle

According to Bubb 'the most worrying thing about the [English initial teacher training and induction] standards is that they describe the perfect teacher' (2001: 16). Nevertheless, proponents of this competence-based training and assessment model claim that it can provide clear foci, help to ensure consistency and facilitate more rigorous assessment, while its critics fear that the scope for creativity, flexibility and autonomy is severely limited. Furthermore, they believe that such outcome driven models could lead to 'an essentially reductive, quasi-behaviourist caricature of professional competence' (Carr, 1993: 260), which cannot accommodate 'the voluntary and deliberate exercise of principled judgement in the light of rational knowledge and understanding' (Ibid: 257). The comment of one newly qualified teacher lends further support to this view:

> *'I don't think you have to fulfil all those standards, or the majority of those standards, even to be a good teacher. And I think that a teacher, in any case, a good teacher, is perhaps more than can be defined in standards.' (Francis)*

In a similar vein McMahon (2000) recognises that 'propositional knowledge' (Eraut, 1994) alone cannot make an effective teacher, a view shared by the newly qualified teachers:

> *'I think, you can learn it to a certain extent. But, I think, you can't learn how to like working with children. That's one of the most important things.' (Leslie)*

Furthermore, the personal aspect of teaching is highlighted by Smith (1995:103) when he points out that 'after all, teaching is a creative act

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rather than a set of prescribed events', a view which was shared and elaborated further by one newly qualified teacher:

> *'I don't think there is a common thread, because I think, that every teacher is an individual. I think, we all develop our own style and our own way of dealing with children, of working with kids. And I don't think there is a label you can stick on it or something. You can't put it in a bottle and say: "This is what you need."' (Chris)*

Nevertheless, the majority of the new teachers valued the wisdom and expertise of their more experienced colleagues, while at the same time they realised the limitations of learning merely through emulation. Spontaneous decision making, or, as one newly qualified teacher expressed it, 'to think on my feet rather than thinking about it' (Lynn), was considered a key ingredient in effective classroom practice.

Select, mix and match

By applying the principle of sharing good practice and emulation, the newly qualified teachers employed other teachers' techniques successfully in their own teaching:

> *'It's just a learning process. I have learnt some very, very valuable lessons from watching colleagues. My Year 10 French is a particular problem, … has been from day one. I watched one of the other teachers with the equivalent Year 11 set. And just from watching her I have learnt that my whole approach for that level and ability was wrong. I was throwing too much at them, too in-depth and I needed to do less information in lots of different forms, lots of changes of activities. And you know, that way it's much more rewarding. I feel like I cope, whereas before, I was presenting them with a worksheet and they'd just look at it and say, "I can't do that".' (Phil)*

To rely exclusively on the emulation of experienced practitioners would reflect 'novice' teacher behaviour and would not be considered conducive to the continuing professional development of 'advanced beginners' and beyond (Berliner, 1988). Instead, examples of good practice should be regarded as good starting points or potential models that are open to further modification and development, extending beyond simple copying or 'coping competences' (Stronach, 1996). The latter would involve the identification of a problem, the selection of a strategy from a number of potential models and its successful transfer to a specific situation, as described by one newly qualified teacher:

> *'I support teach in a lesson, bottom set Year 7, and I have that group once a week and she has it twice a week and I support one of those lessons. So, basically, I am watching her teach. […] I listen up to the wall. I listen to what they are saying. […] I try to combine. I have seen the head of department making them work hard and [another colleague] plays lots of games with them. So, I just try to reward the hard work with the games. So, it's a bit of both, really.' (Leslie)*

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In the above example maximum effectiveness was achieved by way of skilfully combining two contrasting, but nevertheless equally effective techniques employed by two experienced teachers. Although newly qualified teachers appreciated the guidance provided by their experienced colleagues, they maintained a critical distance in the appraisal and adoption of their techniques, which is illustrated by the following comments:

> *'I think, that normally, things that you decided you would copy, you felt comfortable with anyway. When you used them, they did tend to work.' (Sam)*

> *'They were both good teachers. But there was nothing I could see myself doing. […] They were just standing there at the overhead projector. […] I wouldn't do that myself, because it wouldn't suit me personally. I'd have adapted it slightly to suit myself. And that's probably what works best for me.' (Leslie)*

> *'There was one, the only teacher […] that I really respected for the way she controlled the class and her subject knowledge was great as well. In the beginning, I thought I would like to be just like her. But, of course, she is twenty years older than me. You can't begin to transpose her personality onto your own personality. At the end it was curious, because of the fact that she was so good. I could really analyse her teaching in a more successful way, rather than somebody's that was rubbish. […] I could see little things about her which could be improved upon and which, ironically, I took those points away to work on for myself. And it seemed as though she had great control of the class. I noticed that some children were intimidated by her. And so I made it my objective, when I was teaching, to try and give a little bit more to those kids. So, I have been successful where she wasn't. But it was only by her greatness that I was able to do that.' (Hilary)*

The examples show that in their selection or de-selection of techniques, the newly qualified teachers referred to their own personal judgements. But at the same time, they acknowledged the legitimacy of individual styles and accepted that in their diversity they could provide a repertoire of legitimate models of effective teaching, each of them valid in their own right.

> *'I gained a lot of experience from watching other teachers in my first school: watching their resources; what they were doing and developing ideas of my own. In the second school, I was exposed to a completely different teaching method, which I can say was working as well. There were great differences in teaching methods. But on the whole, I think, they were more traditional methods I saw in my second school. It was more thorough in a lot of respects. So I was able then to combine both experiences and develop my own style from that really.' (Phil)*

Without doubt, all ten newly qualified teachers had moved through the first two stages identified on the teacher progress continuum presented by

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Maynard and Furlong (1993) and had now entered a phase during which they recognised difficulties and their causes. It was encouraging to note that they had developed a discerning attitude in the evaluation of the teaching styles of more experienced colleagues, whom they respected and admired for their expertise. To this effect, the ten newly qualified teachers seized every opportunity to observe other practitioners, share good practice and supplement or complement the 'learning by modelling' process by adopting a less controllable approach.

Trial and error – what works

In spite of undergoing rigorous monitoring and assessment, the principle of experimenting by 'trial and error' featured prominently in the newly qualified teachers' search for more effective teaching techniques:

> *'I think I have coped because of the different ways. I have been able to try different strategies out with each group. I have not been afraid to try something and abandon it halfway through. Because they were my own classes, I could do that with them and then bring them round again, if they were sort of getting a little bit too high and weren't really managing; stop the activity and bring them down. I think with the lower ability groups, […] I take them more the fun and games way. My higher ability group I teach them the same things, but in a different way. The bottom set would have more games, a lot more listening, a lot more speaking, whereas the top set, it's rushed over, … the speaking. They do a lot of intensive listening. That's very difficult, where they have to listen for specific detail. It's just my own trial and error.' (Lynn)*

This apparently haphazard approach was by no means to be interpreted as lacking reflection, as the selection of specific strategies was to some extent informed by the newly qualified teachers' reference to the knowledge and skills acquired during their initial training:

> *'I think it was a bit of both experiences, really. The theory, as it was presented by College, taking that on board; seeing what I was seeing in school, and then, coming to my own conclusions and trying things out on my own.' (Francis)*

The selection of strategies was also influenced by subjective experiences of what worked and what did not:

> *'It's just my own trial and error. I mean, we do discuss it with [teachers in] other departments, how we can approach things or how we introduce something, but nothing concrete.' (Lynn)*

The caveat Tickle provides us with idea whether repeated experiences of success can lead to the uncritical employment of techniques, resulting in a 'deproblematisation of teaching' (1994: 24). And yet, a 'trial and error' approach can widen the scope in the search of potential solutions to problems and be conducive to promoting the capacity for reflective practice in action (Schön, 1983). Instead of simply accumulating techniques into a resources bank from which to draw on demand, the newly qualified teach-

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ers adopted a more sophisticated approach involving critical reflection and evaluation in relation to individual strategies' 'workability' in specific contexts:

> *'See, if it works or if it doesn't work. And if it doesn't work, why does it work with a group of, maybe, the same ability and why does it not work with another group of the same ability, and see why.' (Joe)*

By asking themselves probing questions about the reasons for the success or failure of certain techniques and by trying to address the issues involved, they took 'an active role in identifying and reviewing professional developmental needs' (TTA, 1999: 6), accepting ownership for their own professional development:

> *'I think, that's how you get experience, when you try things, because you learn from your mistakes. […] If people tell me, "Yes, you have to do this", then I don't feel that I have experienced anything.' (Joe)*

Teachers must also develop a sensitivity 'to read the runes' (Hayes, 1999: 346) during lesson time, which enables them to make spontaneous decisions in terms of continuing, abandoning or changing an activity in order to 'try out' a new, unproven alternative. One newly qualified teacher explained:

> *'Sometimes, I refer more to the children than I do to the staff for what I am doing. Maybe, I see how they are getting on. If they are getting on with it and they are fine and they have literally done, maybe, twenty minutes of work on something, I know it's worked. But when it's three, four minutes gone, […] then I know something is not right.' (Pat)*

As the above example illustrates, a strategy of 'trial and error' is often guided by certain expectations, generated on the basis of information gained about the pupils involved and in relation to the teacher's own personal disposition, and is not necessarily synonymous with undirected experimentation. On the contrary, on the basis of previous experiences, collaboration with colleagues and feedback from the pupils, hypotheses may be formulated with respect to the employment of potentially successful techniques, which in the course of a 'trial and error' strategy are then proved or disproved.

> *'I think a lot of it has been trial and error, really; what works and what doesn't work. And what works with one class, doesn't work with another. So, I think, really, it's getting to know people that you teach and the classes that you teach. I do listen to what people say as well and try to accommodate their interests and things that they would like doing within reasons. […] And, obviously, you share ideas with colleagues and if something works, you try it out yourself. But often, what works for one person will not necessarily work for you, your own style. So, I think, it's a combination of factors.' (Francis)*

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The level of flexibility demonstrated by this newly qualified teacher presupposed a level of confidence that led to an increased willingness to take risks, experiment and explore alternatives or less secure techniques in the place of established, safe routines. Such practice suggests a strong sense of enquiry and reflection and merits to be located within the realm of action research through which the critical reviewing of one's competence can be facilitated with the aim to improve (Elliott, 1991).

Following one's instinct

Research concerned with initial teacher training frequently focuses on the 'survival syndrome' (Calderhead, 1987; Burden, 1990; Furlong & Maynard, 1995), apparent in trainees who adhere to a finite set of proven, predetermined routines which they select on the basis of previous positive experiences. In the knowledge that these strategies work, they can provide carefully planned stepping stones, generating a sense of predictability, certainty and security. After a noticeable increase in confidence on completion of their first term of induction, the newly qualified teachers became more adept at responding appropriately to the various challenges they encountered in the classroom and seemed puzzled by the experience that some of their actions had occurred spontaneously and automatically and had not involved any conscious decision-making:

> *'How could you think on the spot and do something not worrying about things falling apart? […] You wouldn't even think, "Oh, God I have got to change this! It's not working." You do it. And you would be halfway through something else, before you would realise it.' (Pat)*

Hayes (1999: 346) locates the paradoxical phenomenon described above in 'the sphere of the mysterious capacity known as intuition' and points out the implications of this for newly qualified teachers, who, according to the statutory induction requirements, must be in a position to justify the rationale underpinning their actions. On the premise that theorising and practising are two distinct aspects of teaching, it could not be assumed that the ability to plan, analyse and evaluate was synonymous with effective teaching. And yet, there seemed to exist a link between these two capacities, which facilitated an ability to respond appropriately to unpredictable, complex situations, but was rooted in the subconscious domain. This could explain why newly qualified teachers, and indeed their more experienced colleagues, had difficulty explaining their behaviour rationally:

> *'It didn't really happen consciously. It's just gradually happened. The induction tutor said that we have to follow our gut feeling and it's not always in the book.' (Sam)*

> *'It was just something that I noticed I had been doing. But I hadn't really been doing it consciously.' (Lynn)*

The above statements support the view presented by Elliott (1993: 72), who believes that student teachers gradually move from an analytical to an intuitive mode (Atkinson & Claxton, 2000). In doing so, they approximate the concept of the 'reflective practitioner', which is based around notions of 'tacit knowledge', 'knowledge-in-action' and 'reflection-in-ac-

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tion' (Ghaye & Ghaye, 1998). As Schön (1987: 25) explains, 'we reveal [this knowledge] by our spontaneous, skilful application of the performance; and we are characteristically unable to make it verbally explicit' or justify its use as one newly qualified teacher experienced:

> *'Well, I think it is instinct, I suppose, initially. But it would be nice to have some sort of theoretical background about other situations, you know, what you should and shouldn't do. I acted according to my instincts. I might have said something wrong.' (Phil)*

In view of the practice-oriented training and induction curricula, it is encouraging to note that theory was considered a potential reference point, which could assist new teachers in their sense-making of complex, conflictual situations encountered in their day-to-day practice and their consequent acceptance of responsibility for their own decisions.

> *'I think some of the stuff [training and induction programme] is relevant. I mean, at the beginning, it can become really irrelevant, because you have not taught. But now, looking back, you can, maybe, see, that, "Oh, that article was relevant." But at the time it wasn't. It fits into place with the little jigsaw at the end.' (Pat)*

> *'You need theory. You need to know how things work and it may not all make sense. But you have some sort of reference, when you get out there and do try it for yourself. You do need it.' (Alex)*

The above statement resonates with the view expressed by Argyris and Schön (1974), who maintain that theory and practice are indeed closely intertwined, although a distinction must be drawn between 'theories in use' and 'espoused theories'. While the former are implicit in professional practice and often difficult to articulate, the latter are explicit in the way in which they are expressed in the form of explanations and justifications. However, the extent to which new entrants to the profession critically reflect and theorise about their practice may be influenced by the standards against which they are assessed, in that the pre-determined outcomes of teacher behaviour can constitute a 'potent mechanism for defining what counts, and what does not' (Tickle, 2000: 68). It is therefore crucial that newly qualified teachers are provided with opportunities to engage in critical dialogue and collaboration with their colleagues in order to generate a knowledge base that creates the condition 'for learning that goes beyond the routine and instrumental' (Alred & Garvey, 2002: 68).

Conclusion

Notwithstanding the tightly structured and, to some extent, intimidating monitoring and assessment schedule, the ten newly qualified teachers demonstrated a high level of willingness to analyse their performance critically and thereby engage in reflective practice:

> *'I think it should always be evolving and developing. I think, it's very important as teachers that we don't stand still, we don't get stale.' (Chris)*

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The questionnaire responses provided evidence that, to some degree, all of the newly qualified teachers were engaged in 'reflective teaching' (Bullough, 1989; Adler, 1991) by means of regular self-evaluation. They showed a keen interest in investigating and understanding the underlying causes determining their success or failure, with the aim of affecting changes in their practice towards achieving greater effectiveness that extended beyond survival techniques or 'coping strategies learned alongside practising teachers' (McCulloch & Lock, 1994):

> *'I don't feel under pressure to do everything right. I mean, it doesn't matter how many years I do this job. There will be things I will fail at, because every child is different, every class is different.' (Phil)*

In adopting a critical approach to their teaching they displayed some of the characteristics ideal of 'thoughtful teachers who reflect about their practice' as opposed to those 'ruled primarily by tradition, authority and circumstance' (Zeichner & Tabachnick, 1991: 2).

> *'Accept that you are never going to get it perfect. You have always got to be able to evaluate a lesson: "I could have improved on that. I could have done that." It never stops.' (Alex)*

In this sense reflective practice is synonymous with a process of ongoing enquiry on how improvement could be achieved. These findings are encouraging in terms of the new teachers' willingness to critically examine their professional practice, by adopting an inquiry-based approach to their day-to-day practice and as a result of this process construct their personal knowledge base for teaching. However, in view of the prescribed standards framework, with rigorous monitoring and assessment procedures in addition to the requirement to obtain a 'pass' the first time, it is imperative that all schools provide a supportive environment and collaborative culture. For, only if newly qualified teachers feel safe to engage in honest, critical analysis and evaluation of their own practice without fear of potential repercussions on their assessment outcome, and are encouraged to participate in critical dialogue and active collaboration with their more experienced colleagues, will they be able to construct a knowledge and skills base that enables them to become effective teachers and reflective practitioners.

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Pedagogical Challenges for Implementing Holistic Curriculum in Latvia

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Abstract

Educators from different parts of the world support a vision of holistic education that transcends narrow technocratic focus of education and calls for a more connecting educational perspective, and make their efforts in designing their own models of curriculum integration.

The aim of the present study is to examine what kind of curriculum integration is implemented by teachers in Latvia, as well as problems that teachers are facing in the process of implementing an integrated curriculum. The author of the article draws rationale for developing teachers' critical/reflective skills and creativity for designing and implementing an integrated curriculum.

Key words: *holistic education; curriculum integration; transformational perspective; critical/reflective thinking; creativity; dialectic thinking.*

Issues concerning the essence and effectiveness of holistic approach to learning and teaching have been widely studied throughout the world, from the systematic observations of early holistic educators to more recent case studies. During the 1970s, an emerging body of literature in science, philosophy and cultural history provided an overarching concept to describe the new emerging perspective called holism.

A holistic approach inspires many educators in public and alternative schools in Latvia today. While only a few public schools are entirely committed to holistic principles, many teachers are trying hard to put these ideas into practice.

As the author of the article has observed, teachers who frequently attend in-service courses indicate their need to obtain ready-made answers and teaching strategies for implementing an integrated curriculum. However, they are not themselves committed to designing and implementing a holistic curriculum. The focus of the current research is to explore the present state of teaching practice in regard to holistic curriculum and to suggest the ways helping teachers and teacher trainers implement the holistic curriculum in the schools of Latvia.

Defining the term

Miller (1996) asserts that the concept of holistic education refers to a worldview or theoretical position that opposes reductionism, positivism, and the Cartesian dualism of self, other, and the world, with an emphasis

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on the ultimate unity, relatedness, and inherent meaningfulness of all existence (p.56).

Holism is a perspective on perceiving the world and the child in a holistic way. Holism asserts that phenomena can never be fully understood in isolation (Clark & Coletta, 1981; Fogarty, 1991; Miller, 1993; Miller, 1996).

Concerns about the relevance of fragmented teaching schedules, as well as attempts to define an integrated curriculum have led to intensive discussion for the last half-century. The differentiation in curriculum integration suggested by researchers varies from two or three teachers teaching the same topic in different classes to team design of thematic units and interdisciplinary courses (Čehlova & Grīnpauks, 2003; Fogarty, 1991; Miller, 1993; Зверев & Максимова, 1981). The movement towards an integrated curriculum is a move away from memorization and recitation of isolated facts to more meaningful concepts and the connections between concepts in education.

An integrated curriculum reflects educators' concern with connecting and integrating ideas, and subject matter, which Bonds, Cox and Gantt-Bonds (1993) describe as a synergistic teaching which goes beyond the blurring of subject area lines to a process of teaching whereby all the subjects are related and taught in such a manner that they are almost inseparable. As the authors add, synergistic teaching presents content in such a manner that nearly all learning takes on new dimensions, meaning and relevance because connection transcends curriculum lines.

In the course of implementing a holistic curriculum, teachers are facing the following challenges: 1) the need to understand that changes in education are inevitable; 2) to evaluate critically their own models of teaching and the way they address the situation of cultural and ecological crisis; and 3) to develop creative tools to implement the principles of holistic curriculum in everyday practice.

Methodology of the study

The author evaluated teachers' attempts to implement holistic principles in their practice through their efforts to design an integrated curriculum. There are various ways of implementing integrated curriculum. Several authors go beyond a single definition of integrated curriculum (Fogarty, 1991; Miller, 1996). Fogarty (1991) describes ten levels of curriculum integration, such as 'fragmented', 'connected', 'nested', 'sequenced', 'shared', 'webbed', 'threaded', 'integrated', 'immersed', and 'networked'.

The purpose of this study was to explore the dominant models of curriculum integration practiced by teachers in Latvia. The teachers (N=150) were asked to describe their dominant mode of subject integration according to the 10 levels of integration suggested by Fogarty (1991). Teachers were questioned during the in-service courses delivered by the author of this article. Every teacher received a list with 10 figures designed by Fogarty (1991) reflecting his 10 levels of curriculum integration. Teachers were invited to answer whether they define their teaching as 'fragmented' (by giving priority to teaching subjects as separate units); 'connected' (integrating topics within one subject being taught), 'nested' (the type of sub-

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ject integration where similar ideas are taught in different subjects), 'sequenced' (teaching similar ideas in different subjects still leaving subjects separate), 'shared' (making integration between two subjects), 'webbed' (by using theme as a base for instruction in many disciplines); 'threaded' (teaching students learning and social skills), 'integrated' (the type of integration within one subject and among diverse subjects), 'immersed' (the learner is integrating knowledge by viewing all learning through the perspective of one area of interest); 'networked' (type of subject integration where the learner himself or herself directs the integration process through selection of a network of experts and resources) or to draw their own model of subject integration.

Research findings on implementing a holistic curriculum in Latvia

Out of 10 suggested levels of curriculum integration, teachers recognised only six levels of integration: 'fragmented', 'connected', 'webbed', 'shared', 'nested' and 'integrated' level of curriculum integration.

From 150 teachers questioned, 38% of teachers prefer to work within the curriculum framework where disciplines are separate and distinct, which Fogarty (1991) defines as 'fragmented' curriculum.

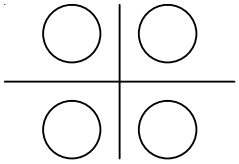

Figure 1. 'Fragmented' curriculum integration model (practiced by 38% of teachers)

According to teachers, this mode of teaching is advantageous as it gives a clear and discrete view of a discipline. However, teachers do make an effort to relate topics within the discipline. Fifty four percent of all teachers responded that they skilfully make connections within one subject area, which they are teaching (see Figure 1). This type of curriculum integration Fogarty (1991) names as 'connected'.

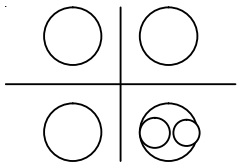

Figure 2. 'Connected' curriculum (practiced by 54% of teachers)

Almost all teachers pointed to their experience in implementing 'webbed' curriculum as a part of school's requirements during a project week (see Figure 2). 'Webbed' teaching is described as a thematic teaching by using theme as a base for instruction in many disciplines (Fogarty; 1991). This model indicates more profound curriculum integration.

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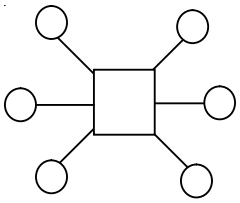

Figure 3. 'Webbed' curriculum (practiced by 91% of teachers)

Unfortunately, this is not traditional practice in schools of Latvia and it is applied only once a year during the project week. Ninety one percent of teachers report that 'webbed' curriculum is very time consuming: it requires time for selecting themes, exploring available resources and skills for coordinating teaching schedules. Teachers have observed that the advantage of 'webbed' curriculum is that students are more engaged in their learning as they make connections across disciplines and with the world outside the classroom. Students' motivation to learn increases since they are involved in planning of their learning and making choices.

But still in their responses teachers are quite sceptical about integrated 'webbed' curriculum in their everyday practice. Teachers admit that they possess neither creative tools nor prior experience for implementing integrated curriculum. They believe that technocratic education is more effective for reaching higher academic test scores and that an integrated curriculum will not help "to cover the required standards set by the state".

Some teachers reported their experience of work within 'shared' curriculum framework – teaching that involves two or three disciplines to focus on shared concepts and themes (Fogarty, 1991). A majority of teachers admitted that this type of integrated curriculum is very time consuming for selecting themes, exploring resources and coordinating teaching schedules.

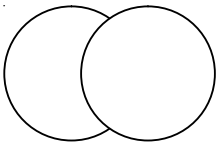

Figure 4. 'Shared' curriculum (practiced by 26 % of teachers)

Latvian scientists Čehlova and Grīnpauks (2003) have observed that several schools in Latvia have an experience of implementing 'webbed' curriculum as a teaching of themes during project weeks; as well as 'nested' curriculum – mode of teaching when topics and units of study are rearranged and sequenced and similar ideas are taught in different subjects, while all subjects still remain separate (Fogarty, 1991).

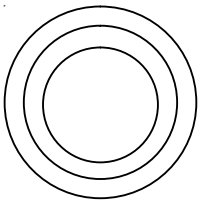

Figure 5. 'Nested' curriculum (practiced by 27 % of teachers)

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Only a few teachers report of their experience in designing 'integrated' curriculum. The evidence reported by teachers suggests that integrated curriculum helps students to apply skills, leads to faster retrieval of information, promotes positive relationships among students and provides more time for curriculum exploration (Čehlova & Grīnpauks, 2003).

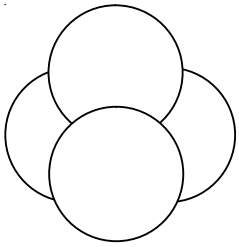

Figure 6. 'Integrated' curriculum (practiced by 25 % of teachers)

Among the main obstacles for implementing integrated curriculum, teachers have mentioned lack of resources, difficulty in planning and scheduling, and doubts about academic test scores. Teachers are concerned that integrated curriculum may not foster effective teaching for reaching high-test scores. They also admit that they do not have enough skills for implementing integrated curriculum and that students who are used to studying within the fragmented curriculum, where all disciplines are taught as separate units, feel very confused and do not know how to relate knowledge from different subject areas while facing integrated mode of studies.

Teachers did not recognise 'sequenced', 'threaded', 'immersed', and 'networked' level of curriculum integration in their practice. Figures 7, 8, 9, and 10 provide the schemes designed by Fogarty (1991) for these levels of curriculum integration.

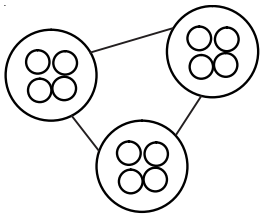

Figure 7. 'Networked' curriculum integration

In this type of subject integration, the learner himself or herself directs the integration process through selection of a network of experts and resources.

The models of subject integration such as 'immersed' and 'threaded' were not chosen by teachers either. 'Immersed' model of subject integration according to Fogarty (1991) means that the learner integrates knowledge by viewing all learning through the perspective of one area of interest.

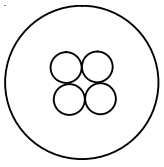

Figure 8. 'Immersed' curriculum integration

The other not popular type of subject integration as reported by teachers was 'threaded' curriculum the essence of which is respecting multiple intelligences of students and putting emphasis on developing students' social skills while teaching a separate subject (Fogarty, 1991: 5). Teachers are not paying much attention to teach students to reflect on their ways of learning and acquiring knowledge.

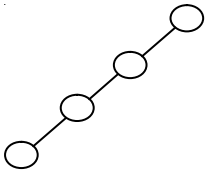

Figure 9. 'Threaded' curriculum integration

The last type of curriculum integration as defined by Fogarty (1991) is 'sequenced' curriculum. This means teaching similar ideas in different subjects, while subjects still remain separate. Teachers do not use this model since this requires ongoing collaboration and flexibility, but teachers, as they admit themselves, have not much autonomy in sequencing curricula.

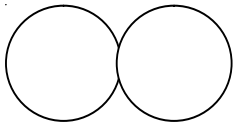

Figure 10. 'Sequenced' curriculum integration

None of the teachers used the free space to draw their own model of integration.

As the research above shows, there are many obstacles for complete and sustainable implementation of integrated curriculum in everyday teaching practice of Latvia. The next part of this article will try to provide some insight in the necessity of holistic education and to speculate on some ways fostering the implementation of changes in educational system leading to a more holistic approach to education.

Why do we need a holistic vision of education?

There are a number of models that differ from classical views on education, such as a child-centred model of education widely practiced among educators in Latvia or humanistic model of education. More and more often teachers attending seminars in Latvia assert that traditional or sometimes child-centred models in education have proved to be effective in Latvia. Many teachers are still questioning principles of holistic education and the way they differ from a new approach known as child-centred education or from a traditional technocratic approach, which, in their opinion, has already proved its effectiveness.

As Miller (1993) suggests, education today needs a new vision, a new understanding of its fundamental processes. He adds that in order to move out of the crisis, it is not enough to restructure the system, but there is an urgent need to examine educators' underlying assumptions about the nature and the purpose of schooling (p. 8).

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It is also evident that at the level of ideology, neither technocratic nor progressive education adequately addresses the state of life systems on the Earth or the role of the humans within the larger context of the world. Therefore, holistic worldview is the most coherent vision and curriculum framework for education, which can best help to resolve the environmental and cultural crisis that we are facing today.

The holistic worldview does not deny other worldviews but subsumes, transcends and transforms the practices of the past. As Miller (1990) and his associates argue, each successive position can be seen to be more inclusive than the one prior to it as "we move from the more restrictive scope of an atomistic perspective to a more inclusive view that witnesses the connections between ourselves and many layers of experience and knowledge" (p. 6). As Berry (1998) argues, "truly holistic education does not relinquish the technocratic focus on basic skills nor does it ignore the child-centred educator's concern for the social development of a child. Rather, significant aspects of both the technocratic and progressive theories of education are integrated into a holistic vision of education" (p. 57).

Holistic education incorporates the focus of technocratic education on cognitive aspects of knowledge acquisition with the focus of child-centred education on the individual needs of a child and affective realm of learning. But the main distinguishing factor among holistic education and child-centred or technocratic forms of education, as J. Miller (1993) argues, is that holistic education is non-dualistic and all-inclusive. It can be better defined as "child-connecting" rather than "child-centred" (p. 64).

A new worldview is clearly addressing a question about the need of changes. It is also a question about the future. Holistic vision is future oriented and is committed to building a sustainable future, which is a global concern and a challenge in its scope. The technocratic approach has brought the inevitability of the destruction of the biosphere. Holistic worldview is an effort to regain a sense of holism and interdependence. In contrast to an old, atomistic, or scientific model of isolation and analysis, it can be described in terms or relatedness and interdependence.

Implementation of changes: transformative perspective

Transformative perspective includes critical/reflective and creative thinking. Critical thinking is concerned with critical evaluation of a current practice, beliefs and attitudes while creative aspect of transformation process focuses on creation or generation of ideas, processes, experiences or objects. Critical/reflective and creative thinking are interrelated and are complementary aspects of thinking. Critical and creative processes are a combination of abilities, knowledge, values, and attitudes. Critical thought is necessary for analyzing arguments and for rational decision making, while creative thinking is necessary for developing alternative models of education.

In order for educators to bring about changes, they need to be involved in the process of critical reflection of their own assumptions and current educational practices, as well as in how they respond to the situation of cultural and ecological crises.

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Developing critical/reflective skills for implementing a holistic curriculum

Critical reflection is one of the main aspects of transformative perspective. Critical thinking can be defined as "the disciplined mental activity of evaluating arguments or propositions and making judgments that can guide the development of beliefs and action taking" (Bloom, Englehart, Furst, Hill & Krathwohl, 1956).

Huitt (1998) makes a clear distinction between critical/reflective and other kinds of thinking such as non-critical which can be described as habitual thinking; creative thinking (thinking in an original way); prejudicial thinking (supporting a particular position without questioning the position itself); or emotional thinking (responding to a message emotionally rather than to its content). As defined by Huitt (1998), critical/reflective processes include affective, cognitive and behavioural aspects. Fullan (1991), an authority in curriculum implementation, argues that changes involve practices, resources and beliefs. Of the three factors, beliefs are the most difficult to define and articulate.

Transformative perspective involves teachers in the process of making new interpretations that enable them to elaborate, further differentiate their long-established frames of reference or to create "new meaning schemes" (Mezirow, 1990: 5) and reflect on prior teaching models in order to determine whether what they have been doing is justified in certain circumstances. Educators should begin with critical self-reflection – the reassessment of their own orientation to perceiving, knowing, believing, feeling, and acting. Critical reflection is not concerned with **the how** question but with **the why**, the reasons for and consequences of what teachers do. Dewey (1933) refers critical reflection to "assessing the grounds of one's beliefs", and "the process of rationally examining the assumptions by which teachers have been justifying their own convictions" (p. 9). Dewey's definition provides one with a useful point of departure for understanding and re-evaluating one's assumptions. For Mezirow, critical reflection is a highly rational process when the underlying premises of ideas are assessed and critiqued. On the contrary, non-reflective practice as defined by Habermas (1976), "takes place in contexts in which implicitly raised theoretical and practical validity claims are naively taken for granted and accepted or rejected without discursive consideration" (p. 16).

Drawing on Habermas, Mezirow (1985) outlines conditions for rational and ideal discourse that includes such elements as full information, the ability to objectively evaluate arguments, and freedom from self-coercion. These conditions can serve as a philosophical foundation and as criteria for judging both new models of education and the social conditions that are the prerequisites of free and full participation in the reflective discourse. These conditions serve as a standard against which to assess educational and social practice.

Thus, the first step for the educators to begin with is to identify the dangers of technocratic curriculum with its divisions, disciplines and subdisciplines, or as Orr (1993) points out, teachers' task is to rethink the process and the substance of education at all levels and the way it "alienates us from life in the name of human domination, fragments instead of

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unifying, separating feeling from intellect and the practical from the theoretical" (cit. by Miller, 1993: 26). As Orr adds, educators need to become aware of all other dangers of technocratic and child-centred education: its focus on routines and memorization, and diminishing the sense of wonder.

As the second step, educators should identify a way of thinking that can overcome dualism and encourage teachers to think creatively about the new more ecologically responsive way of curriculum building.

Developing creative skills for implementing a holistic vision

Creative thinking about the new visions in education is the second significant facet of transformative processes, which can be offered as a viable solution to the ecological and cultural crisis of our society. There is some evidence suggesting that relationships between critical/reflective and creative synthesis thinking are appropriate in times of educational reforms (Huitt, 1992). As argued by Huitt (1998), creative thinking is a component of a critical/reflexive thinking rather than a separate notion.

Deconstruction of the old worldview and implementation of a new vision by using one's own creative tools requires power, courage and a commitment to bring about changes. Educators need to learn to think in a new way about knowledge, activity of knowing, and learners.

Creativity is most often defined as a response to an ill-defined problem rather than a well-defined problem. As Amabille (1983) suggests, in a creative response to a problem, the problem itself should be defined in a heuretic way. Second, many authors regard creative thought as the development of the ability to move away from past ways of thinking and to "break mental sets". Stein (1974) describes creativity as a "leap" away from what has been previously exposed. Third, creativity is often seen as the formation of relations among formerly disconnected things. Henle (1962) calls this aspect of creativity "harmony" (p. 31). Finally, some theorists have given particular attention to the role of contradictions in the creative processes. Creativity is regarded as the ability to relate elements that were previously seen as contradictory. Kuhn (1963) saw divergent thinking as a response to data contradicting the existing paradigm. The author views creative process as a process of dialectical thinking. Thus educators should focus on developing epistemology of dialectical thinking that should serve as a roadmap for creative process.

Developing teachers' epistemology of dialectic and meta-systemic thinking

Dialectical thinking may be particularly important when approaching issues that rely heavily on formal approach. In such contexts, dialectical epistemology provides the person with the model of creative thought that involves integrating the present models of education in a larger view of multiple systems evolving through interrelations with each other (Basseches, 1984).

As many authors (Basseches, 1984; Gruber, 1984; Hegel, 1967) argue, dialectical understanding of knowledge and ideas gives both cognitive and affective support to the processes of creativity. On the cognitive side, dialectical epistemology might be seen as providing a set of directions

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to thought. On the affective side, dialectical thinking helps person to support the emotional tensions of the creative process: the tension of holding opposing views simultaneously, of sustaining uncertainty, of breaking away from an established way of seeing things, and of tolerating ambiguity. A dialectical view of knowledge supports these affective tensions in the creative thought by asserting them and showing that evolution of thought will eventually lead to the creation of new and more adequate knowledge.

Epistemology of dialectical thinking includes 1) seeing one's thought in the process of evaluation; it means to see the necessity of change, to view change as natural, expectable, and valuable. It encourages teachers to be ready and willing to move away from an old tradition; 2) dialectical epistemology can be regarded as a part of larger thought systems. Developing dialectical epistemology would mean altering teachers' response to contradictions that are encountered in problem solving: rather than being ignored, contradictions should be perceived as opportunities to develop; 3) dialectical epistemology encourages educators to look for ways of resolving them in higher order syntheses, by creating new, more complex systems encompassing the old contradictory frameworks (Basseches, 1984 a).

Gruber (1984) describes a creative person as consciously monitoring and directing the evolution of three systems and their interrelations. These three organizational systems are comprised of 1) the organization of knowledge (beliefs that are constantly being altered in response to new data); 2) affects (emotional aspects in work of a person); and 3) the system of purpose (complex network of tasks, goals, and projects) that persons intend to carry on. Each of these subsystems includes smaller systems that are interrelated in a complex way, with each subsystem evolving over time (Gruber, 1984). Therefore, as Gruber (1984) argues, creativity requires cognitive abilities described by the metaphorical dialectical thinking: ability to understand, anticipate, and direct the evolution of a system, as well as the ability to relate multiple systems to each other. Advanced stages in the development of dialectical thinking make it possible for a person to direct his or her own creative processes in projects that are extended in both time and scope.

Concluding comments

Ecological, cultural and educational crisis fosters teachers to re-evaluate their underlying assumptions behind the destructive social, economic and educational practices and think creatively about new practices that are sustainable over a long run.

Holistic vision is future oriented and is committed to building a sustainable future. Holistic worldview is an effort to regain a sense of holism and interdependence. In contrast to the old, atomistic, or scientific model of isolation and analysis, it can be described in terms of relatedness and interdependence.

A holistic conception of education requires transformation of teachers' assumptions. Educators themselves should become agents of social and cultural change in their search for wholeness, meaning, and authenticity.

Transformative perspective includes both critical/reflective and creative thinking. Critical thinking is concerned with critical evaluation of a

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current practice, beliefs and attitudes, while the creative aspect of transformation process is involved with the creation or generation of ideas, processes, experiences or objects in order to develop alternative models of education.

There are hundreds of schools and successful educators in the world and in Latvia committed to incorporating holistic education or elements of holistic education into their pedagogy. They are struggling to live up to their visions, trying to apply a wide array of strategies in their work. Many educators in Latvia have considered classical and more recent research in holistic education as a supporting evidence for informing their holistic practices. Nevertheless teachers are still facing certain problems in the process of implementing holistic curriculum, such as availability of resources, lack of prior experience and skills of planning integrated curriculum and coordinating teaching schedules.

The teacher training programs should pay attention to the development of teachers' creative thinking skills toward novel ways of implementing holistic curricula. It might facilitate the growth of creativity in several ways: 1) dialectical thinking would foster awareness of novelty and relations among things; 2) a dialectical view on knowledge would turn teachers' attention to contradictions and attempts of synthesis; 3) dialectical epistemology might provide teachers with a model of creative thought involving the integration of the present formal system in a larger perspective of multiple systems evolving through interrelations with each other; and 4) meta-systematic dialectical thinking skills might provide the opportunity for teachers to carry out conscious management of interrelated evoking systems.

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Wholeness versus Fragmentation in Contemporary Education: Lithuanian Perspective

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Abstract

The article focuses on the analysis of the concepts of wholeness and fragmentation in contemporary education. Different scholars interpret them differently. For holistic educators living in a diverse, pluralistic world, it is essential to reconsider this concept anew, to convey to students the wholeness of the world, to develop a comprehensive understanding of the relation of the humanity and the individual to the world, nature, and community.

The dichotomy of wholeness/fragmentation is analysed viewing it from two philosophical perspectives: pragmatism and postmodernism. The concept of curriculum integration as a necessary precondition for teaching a holistic perception of the world is analysed. The continuum of integration is interpreted as an evolutionary process, which is under way in Lithuanian schools.

Key words: *holism; dichotomy of wholeness/fragmentation; curriculum integration; models of curriculum integration.*

Holism is considered to be one of the aims of educational process, the process of knowledge organization and experience integration leading to the development of a versatile person and helping to reach the inner cohesion of the person. Wholeness as integration has been discussed by different schools of thought. In the contemporary information society, this polemics becomes even more important because of its emphasis on the necessity of developing a person capable of perceiving the wholeness of the world and at the same time living in harmony with all its diversity and controversies.

Educators look for new educational models of curriculum integration, capable of developing not a fragmented but a mature, integrated personality. Integrated curriculum becomes an important precondition for teaching a holistic world vision. Curriculum integration is understood as a continuum (Drake, 1998), which is moving from lower to higher levels, when progressively more and more connections are made with the learning content. It is interpreted as an evolutionary process (Fogarty, 1991; Hargreaves, Earl & Ryan, 1996; Case, 1991).

The aim of this article is to interpret wholeness and fragmentation from two philosophical perspectives: postmodernism and pragmatism. The analysis will help us find the ways to overcome fragmentation in education

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and develop appropriate curriculum integration models for Lithuanian school.

The empirical data presented in this paper are received applying the method of document analysis. The Lithuanian school curricula documents have been studied using a qualitative content analysis.

Wholeness as experience integration

The integration of Lithuania into the European Union creates favourable conditions for rethinking the educational philosophy, which underpins our educational policy in general and the policy of curriculum development in particular. In the contemporary world, which is characterised by rapid changes and the boost of information, it seems impossible to perceive a whole picture, as everything is made up of diverse, fragmented elements. The problems of fragmentation in education and in educational curriculum can be solved using different strategies.

One of the strategies to overcome fragmentation is offered by the pragmatist philosopher John Dewey, whose philosophy is popular in Lithuania. He thinks that the experience integration is the instrument which leads to the development of a holistic world view. It is through experience that we perceive the world around us and are able to apply the accumulated knowledge in life situations. In this way, the enrichment of experience becomes an important aim of education in general and of school education in particular. For this purpose, there is a need to have a particular curriculum and learning environment which would help students to integrate the experience acquired from different subjects. The process of experience integration is made easier if the curriculum itself is integrated.

Analysing the term 'wholeness', Dewey (1990, 1997) points out that nothing but experience helps us to perceive the existing order of the nature and create a holistic picture of it. It is actually through numerous experiences (to be more precise, fragments of it) that we acquire the wholeness of the world picture. In his opinion, the progress of experience integration process depends not only on a properly organised process of acquiring experience in the classroom, but also on student's interests (Dewey, 1997). The interest becomes a motivating element which leads to the perception of the interconnectedness of real world ensuring the effectiveness of the teaching process.

There is another aspect of experience integration which Dewey considers important. School should not be separated from real life situations and there should be

> *"the organic connection with social life, …a child's need of action, of expression, of desire to do something, to be constructive and creative, instead of simply being passive and conforming… . What we want is to have the child come to school with a whole mind and a whole body, and to leave school with a fuller mind and even a healthier body"* (Dewey, 1990: 79–80).

The creation of a proper learning environment promotes deepening of one's experience and learning from it.

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It should be noted that the theory of pragmatism has a rather long tradition in Lithuanian education. Lithuanian educators were interested in it before World War II and later, during the Soviet period, ideas of Dewey could be found in Mahmutov's theory of problem solving (Махмутов, 1975), in some works by Lithuanian educators (Laužikas, 1974; Valatkienė, 1997), and after the collapse of the Soviet regime in Lithuanian school documents, because the ideas of pragmatism were considered to be important for the individualization of teaching (Core Curricula and Education Standards for the Basic School, 2003). At present, when curriculum integration process is under way, pragmatist ideas are gaining popularity again.

Wholeness as a common agreement

The term 'postmodern' in Webster's dictionary is defined as

> *"relating to a movement that is in reaction against the theory and practice of modern art or literature"* (Webster's Ninth New Collegiate Dictionary, 1991: 919).

Today, the philosophy of postmodernism is often used by many scholars to understand different aspects of the contemporary life, not only art or literature. At present, it is popular to use it for the analysis of various educational phenomena. The popularity of postmodernist philosophy among the Lithuanian scholars is also growing (Aramavičiūtė, 2004; Duoblienė, 2002), because it gives the possibility to look at the contemporary education from a different angle, to analyse and interpret the present educational situation in Lithuania from a radically new perspective.

When we look at the phenomenon of fragmentation in education from the postmodernist perspective, we find another strategy of dealing with this problem. According to the postmodern view, as concerns the phenomenon of fragmentation, wholeness and fragmentation tend to become interchanging states of the same phenomenon, which is defined as dichotomy. Boundaries existing in the dichotomy of fragmentation/wholeness (like in other dichotomies: teacher/student; teaching/learning; individuation/socialization) are gradually disappearing (Deleuz & Parnet, 1987). Such a view diminishes the fear of fragmentation and allows a person to create momentuous perceptions of a whole. These momentuous holistic perceptions or certain fragmented configurations make it possible to construct an individual understanding of the world (Usher & Edvards, 1996).

Postmodernists consider that dealing with fragmentation as well as ambiguity in social life, people must arrive at common agreements (Rorty, 1992). The process of education is understood as a process in which learning and understanding are achieved not through knowledge transmission, but through the dialogue and negotiation, when educational experts reach a common agreement on the educational content (Lyotard, 1993).

Curriculum integration

In what way can the above-discussed philosophical perspectives be useful to practising teachers? Can these ideas be applied in contemporary schooling?

The changing world and the challenges of globalisation provide even more evidence for the neccessity to integrate the individual experience in

order to convey to students the wholeness of a diverse, pluralistic world in which we live.

The fullness of human existence, its moral, aesthetic, emotional, psychological, and spiritual dimensions make us more than mere information processors or goods consumers. Human experience is an expression of the evolution of life. Living in a global world, one must acquire a global perspective, develop a comprehensive understanding of the relations of the humanity and the individual to the nature, the community, and the world. From this standpoint, wholeness is interpreted as comprehensiveness. Striving for this type of wholeness in the long run has given rise to comprehensive schools. Holism becomes the most important goal of education, the process of knowledge and experience integration, helping to achieve inner and outer harmony and inner cohesion of personality (McLaughlin, 1997). Holism as an aim of education may be interpreted differently.

Firstly, we say that personality tries to reach this inner cohesion through achieving the unity of educational aims and views. As a result, human life becomes harmonious and holistic in the integrative sense. As Midgley puts it, this need for integration is interrelated with our desires, abilities, and needs. People have the ability of self-integration and seek it in a natural way. The existing fear of fragmentation empowers people to build their own lives (Midgley, 1980).

Secondly, the wholeness of world perception can be developed using the curriculum integration. For centuries, educators have been wrestling with an overcrammed curriculum content and subject barriers in school curriculum leading to a fragmented knowledge perception. At present, there is a clear shift to generic skills, which are more important to learn and develop. These skills do not preclude content: rather the content is a vehicle for acquiring the skills. They become an important linking element reducing subject barriers and fragmentation. It becomes obvious that the integration of educational content is the next step towards the development of wholeness in perception (Drake, 1998). This integration aiming at holistic perception takes many forms. There is no universal model. You cannot develop a curriculum and expect that teachers would teach the same content and skills in the same way in every classroom.

Jacobs (1989), Burns (1995) and Fogarty (1991) point out that an integrated curriculum is a continuum, along which progressively more and more connections are made. It is evolutionary in its nature. Burns (1995) also aligns each position with the curriculum instruction, assessment, and class culture. Hargreaves and his associates (1996) analysing problems with continuums say they embody implicit values, any movement along the suggested continuum representing growth towards a more progressive state, which is not always the case. Ericson (1995) differentiates between a lower-level form of integration (multidisciplinary) and a higher-level (interdisciplinary) form, promoting higher-order of thinking. The integrated curriculum model developed by Drake (1998) describes successive steps which teachers should make going from traditional (subject-based) curriculum to an integrated one (see Figure 1). Her continuum includes not only lower levels of integration (fusion, integration within one subject), but it moves further up from a multidisciplinary via interdisciplinary to a transdisciplinary level.

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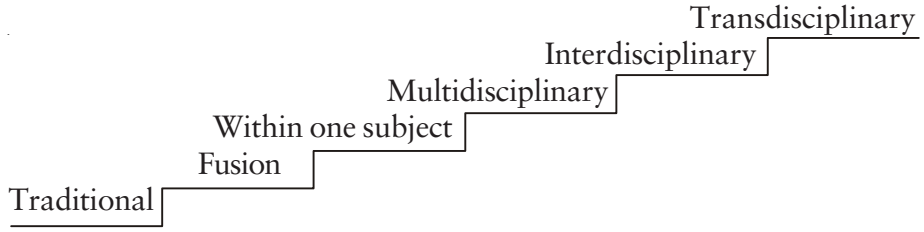

Figure 1. Continuum of integration (Drake, 1998)

The positions in this continuum need explanation:

- *Traditional*. The material is taught through the lens of only one discipline or subject.
- *Fusion*. A topic is inserted into several subject areas.
- *Within one subject*. The subdisciplines are integrated within one subject area (such as physics, chemistry, and biology integrated as science).
- *Multidisciplinary*. The disciplines are connected through the theme or issue studied during the same time frame but in separate classrooms. In primary schools, students may rotate through learning centers representing different subject areas. Students are expected to make connections among subject areas themselves rather than having them taught explicitly.
- *Interdisciplinary*. Interdisciplinary curriculum may have many different variations. The subjects are connected beyond the common theme or issue. These connections are made explicit to students. The curriculum may be tied together by guiding questions, a common conceptual framework or cross-disciplinary standards.
- *Transdisciplinary*. This approach transcends disciplines; it may take different forms. It differs from the other approaches because it does not begin with the disciplines in the planning process; rather, the planning begins from real-life contexts. The disciplines are embedded in the learning. This approach can include cross-disciplinary outcomes, but often emphasizes personal growth and social responsibility. The curriculum revolves around a social issue or problem in a real-life context. The story model, the project method, negotiating the curriculum approaches allows students to control their learning, increase academic achievement and well-being (Drake, 1998: 20–23).

Further analysis of curriculum integration problems encountered by school-teachers shows the distinct differences in the philosophy and techniques used while developing integrated curricula. Teachers seem to move into higher degrees of integration as they learn to make more connections. It is obvious that the model of integration, suggested by Drake, corresponds most to Lithuanian strategy, which is used to develop integrated curricula for different school levels.

The analysis of Lithuanian school core curricula

Since the reestablishment of independence in Lithuania, the development of national core curriculum for comprehensive schools has undergone many changes. In 1994, the first draft of *Core Curricula for the Comprehensive school* appeared. It was approved by the Ministry of Education and Sci-

ence in 1995. Since then, the Curriculum Development Group of the Lithuanian Ministry of Education and Science has been constantly working on the improvement of national core curricula. There is a noticeable shift to a standard-based curriculum. The term 'standards' at present is most often used as an umbrella to cover such popular terms as 'outcomes', 'expectations', 'competences'. The standard-based curriculum planning strategy, which was used in developing new versions of national core curricula (2002, 2003), are more favourable for curriculum integration.

The content analysis of the improved version of *Core Curricula and Education Standards for the Basic School (2003)* has shown that it is based on the subject core curricula, which were defined in the first version. The integration within these core curricula is not discussed, yet mentioning the importance of integrating students' experience into the acquired knowledge and reflection on it. It is apparent that in the descriptions of core content of separate subjects (namely, History, Ethics, Philosophy, Arts, Natural Sciences) the attempts to establish integrational links are made through defining common competences and skills (such as critical and analytical thinking, interpretational and inquiry skills), which should be developed at different school levels. That was not considered in the first version of the Lithuanian curriculum document (1995) where only the core content of subject curricula was described.

The core curricula of the main subjects (Mathematics, Literature, Languages, etc.) in the analysed curriculum document (2003) are described listing all the possible connections with other subjects, which teachers can make. Teachers are encouraged to do that in a broader educational context, though it is not a real integration but the first steps made in this direction. In the improved version of *Core curricula for the Primary school* the next step towards wholeness was made by grouping separate subjects into blocks: Social Education, Environmental Education, Humanitarian Education, Natural Sciences, Technologies. For these discipline blocks there are common goals and tasks as well as didactic approaches and values, which should be developed and formulated. This is done in the core curricula of all school levels.

The analysis of the above mentioned core curricula document revealed that it contains a few integrated curricula: the contents of Ethics, Civic Education, Social Studies, Art Education have connections with the content of other disciplines. For example, in Ethics issues are analysed from philosophical, psychological, ethnological, theological and politological aspects. Social Studies is in fact a two-discipline (History and Geography) integrated curriculum. In the curriculum of Civic Education all integrational levels (as described in Drake's model) are found. Starting from a fusion level of integration, teachers are recommended to move up and to make further connections with other subjects (History, Geography, Ethics, Literature) and integrate them into all aspects of school life. Now Civic Education is taught as a separate subject in grades 8–10 of the primary school.

In 2005, a new draft project of integrated curricula was developed by a National Curriculum Development Group. It was based on EU cross-curricular themes (1998, 2001). The school level in this draft document is not specified. There are the following integrated curricula described in this draft:

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- Learning to learn
- Communication and ICT
- Civics
- Entrepreneurship
- Sustainable development
- Cultural consciousness

The analysis of the Lithuanian concept of integrated curricula shows that the curricula developers try to consider Dewey's integrational schemes (Dewey, 1990). Besides, the curriculum integration models described in this draft document partly correspond to those offered by Drake and others. Teachers are recommended to use the following integrational schemes:

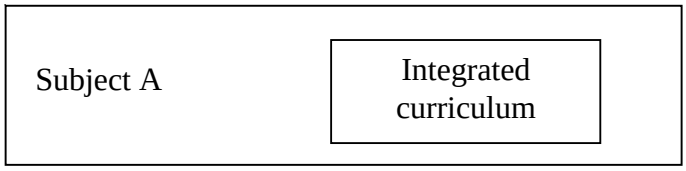

Figure 2. Integration within one subject

For example, the widely used IT and computer-based subject teaching are integrated into separate subject curricula. This integration model can hardly be helpful in the development of wholeness, unless subject teachers or their teams discuss and plan subject content together. Otherwise they will not be able to develop a holistic perception, and it will remain fragmentary.

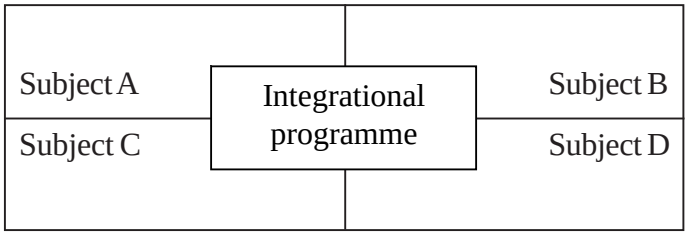

Figure 3. Subjects are connected through common themes or issues

If this team works hard trying to find multiple connections, this results in a higher level of curriculum integration (Figure 3), corresponding to Drake's multidisciplinary level.

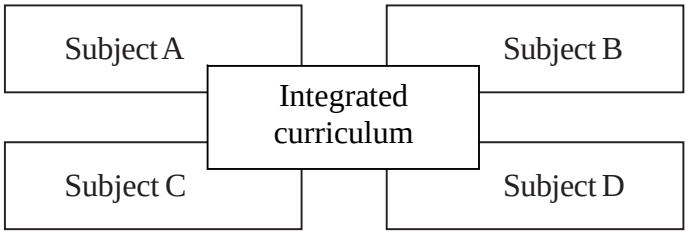

Figure 4. Integrated curriculum having a common conceptual framework

When developed further, this integrational model becomes an interdisciplinary curriculum (Figure 4), with a common conceptual framework

or cross-disciplinary standards. But the most recommended curriculum integration model in Lithuanian draft document is shown in Figure 5.

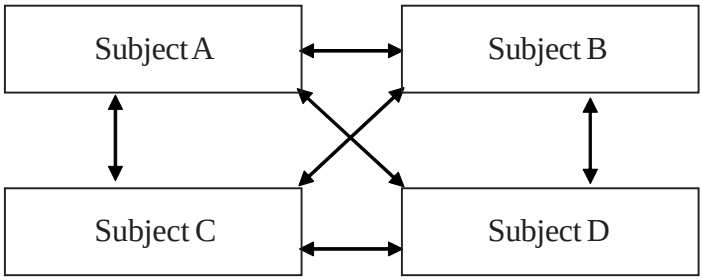

Figure 5. Integrated curriculum has connections to all school subjects and the entire school context

It corresponds to Drake's transdisciplinary curriculum integration model. Its creation requires starting the integrational process at the stage of planning, when from the very beginning curriculum developers agree on a common conception, goals, and outcomes.

Models in Figures 4 and 5 obviously correspond most to holistic ideas authors have discussed, except for Dewey, who stresses the experience integration. According to his concept of wholeness, students should collect experience, reflect on it, and connect fragments into a holistic world picture. The Lithuanian curriculum integration models are apparently closer to Drake's model, because there is a little attention given to the experience integration. But, similar to Drake's theory, these models mainly focus on the cognitive and less on the empirical aspects of education. If in the process of content integration teachers do not give enough consideration to students' interests and their experiences, the best integrational schemes may go to pieces and then the desired wholeness would become nothing but a fragmented picture of the world.

Such fragmentation reminds of a postmodernist view. Postmodernists do not aim at developing the wholeness of educational content; on the contrary, they speak of accidentally perceived different constructs of the content, which are individual, difficult to measure and foresee (Rorty, 1992; Parker, 1997). Most likely it would correspond to the model in Figure 3, if it is possible to relate Lithuanian models to the postmodernist tradition.

Conclusions

The contemporary philosophy of education stresses the importance of holism. It is important for teachers to understand that personal experience and the holistic world perception based on this experience are important components of holistic education. To ensure holistic cognition and to make the integration of personal experiences and knowledge possible, different didactic models of curriculum integration can be applied.

In conclusion, we may say that the problem in Lithuanian curriculum in general does not lie in lack of attention to curriculum integration and holistic education of students. The problem is that when creating integrational models we do not give enough attention to experience integration, students' interests, desires, to those things, which according to philosophers of holistic education are most important.

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Drake's curriculum integration model demonstrates how gradually, stage by stage, the integration of curriculum can be achieved. It corresponds best to the integrational process that has begun within the framework of improving Lithuanian school core curricula. The attention given to curriculum improvement and its integration shows that the philosophy of holism gradually becomes the basis of Lithuanian school curriculum policy and is reflected in educational theory and practice.

Newly developed integrated curricula (the Lithuanian draft document) provide good examples of higher-level (interdisciplinary and transdisciplinary) curriculum integration. It is expected that they will help to achieve common educational goals and to develop the wholeness of the human being as fully as possible.

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Taking the Experiential Path in Science Teaching

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Abstract

Science and technology play a significant role in our everyday lives. In recent years, the discussion of how to improve science education and promote scientific literacy has found worldwide attention. School science curricula have historically been dominated by discipline-based content and isolated from student needs, interests and experiences. Science education has neglected the basic critical thinking and cognitive skills that contribute to an individual's comprehension and application of science knowledge.

The new holistic paradigm requires a new approach to the development of science teaching content. Curriculum must reflect new learning strategies and technologies, support students' authentic investigations and the development of inquiry, exploration and discovery skills. Based on D.A. Kolb's model of experiential education, this article discusses the hierarchy of experiences and the possibilities for organizing science teaching/learning episodes along the experiential framework. The instructional methods for the facilitation of the learning process to guide the learner through the content are described in the article.

Key words: *scientific literacy; content; experience; learning activities.*

In recent years, awareness has grown that school science, as it has been taught since the beginning of the 20th century with little changes except for the growing volume of curricular topics, is not adequate for educating our youngsters to understand the quickly changing contemporary world and society. Most educators would agree that one essential goal of education is the intellectual development of students to become effective problem solvers for the Information Literacy Age. The issue of active teaching in experiential education is recognizable in the Chinese proverb:

> *"Tell me, and will I forget.*
> *Show me, and I will remember.*
> *Involve me, and I will understand."*

What does experiential education mean?

Experiential education claims to be holistic, which means that it conceives of cognition, aptitude and attitude as integrated and complex components rather than as separate – or even separable – aspects of behaviour (Hovelynck, 2001). According to Miller (1998), holistic education is con-

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cerned with connections in human experience – connections between linear thinking and intuitive ways of knowing, between academic disciplines, between individuals and communities. Holism implies that experience cannot be understood in terms of knowledge, skills or attitude, but necessarily comprises all of those simultaneously, and is embedded in relationships (Hovelynck, 2001). For Rogers (1994) experiential learning is equivalent to personal change and growth. He feels that all human beings have a natural propensity to learn; the role of the teacher is to facilitate such learning.

Greenwald (2000) argues that the best way for students to learn science is to experience problems that challenge science and the thoughts, habits of mind and actions associated with trying to solve them. This implies opportunities for authentic, inquiry-based learning – activities in which the learner extracts meaning from experience. Then changes are required in curriculum development and in organizing the learning process. Possibilities to utilize an experiential approach in the science teaching/learning process are discussed in this article.

Changes in science teaching

The focus is changing and must change from teaching to learning; from outer-directed, "expert"-driven curriculum and methodologies to more learner-centered, experience-based, connected ways of acquiring the knowledge, skills, and attitudes required for life in the world in which our young people will live and work (Poulsen, 1994). Wittrock (1977) emphasizes that learning has been described as changing through experience, acquiring relatively permanent change in understanding, attitude, knowledge, information ability, and skills through experience. It is now widely accepted among educators that humans are not passive recipients of knowledge but people who actively construct meaning and knowledge based on their experience. Aubusson (2004) argues that students bring prior knowledge to the classroom that is resistant to change because it is powerfully explanatory since it is based on personal, real life evidence and therefore influences the learning of real concepts. If students bring alternative (less scientifically accepted) views to the classroom, the task of the teacher is to promote students' consideration of alternative ideas, which help the student make better sense of the world. The teacher requires students to change their concepts from those they have formulated through experience to others that more closely resemble an accepted scientific view (Aubusson, 2004).

An essential element is considering the curriculum as providing opportunities and guiding students to build their own experiential reconstruction, rather than pursuing the development of knowledge itself. Therefore, it seems to focus on how to utilize knowledge rather than simply memorizing and reciting the knowledge. Dewey (1933) emphasizes the value of science as an epistemology, called 'habits of mind', that requires both deductive (abstractions) and inductive (empirical experiments) processes of thinking (Steve, Oliver & Jakson, 2004).

There is an increasing call among science educators for fundamental changes in course content and modes of instruction to increase students' scientific literacy.

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The selection of content for science education as a problematic issue has been discussed by Roberts (1982) and Broks (2004). A constructivist approach to classroom science supports these reform articulations because students learn science as active constructors, rather than passive recipients of knowledge. As students negotiate their understandings in science in collaboration with teachers and peers, critical thinking becomes the dominant mode of learning over the rote memorization of facts.

These goals can only be achieved when educators have enabling resources, adequate materials, applied training, and time to implement the teaching of science in an engaging and meaningful fashion. This means that a science educational program's enrichment activities should facilitate continuous development of scientific literacy, which requires powerful learning episodes that are relevant and engaging to all of the learners.

To truly define a curriculum as "experiential," there must be some evidence that "experiential processing" takes place. According to Joplin (1995), experience alone is not experiential education. Rather, true experiential education is characterized by systematic interventions of the learning facilitator with the learner along an experiential path. Joplin identifies these overt interventions as follows.

- *Focus*. Includes presenting the task and isolating the attention of the learner for concentration. It defines the subject of study and prepares the student for encountering the challenging action that follows.
- *Support the feedback*. Exists throughout the learning experience and includes maintaining close proximity to the learner during the activity to facilitate questioning and to clarify instructions. Adequate support enables the learner to persevere. It includes demonstrating interest in the learner's situation and letting the learner know that help is available when needed. Adequate feedback will ensure that the learner has the necessary information to move ahead. It includes comments about how the learner works, the learner's manner of interactions, and substance of the learner's work.
- *Debriefing*. The learning is recognized, articulated, and assessed. It should complement the natural breaking points for sub-themes and sub-activities within the learning experience. It can also serve as a bridge between natural transition points in the curriculum, when moving from one component to the next one along an experiential path. This is also the learning facilitator's opportunity to assure that the learner's previous actions do not remain unquestioned, unrealized, unintegrated, or unorganized. This is the opportunity to ensure that the learner's conclusions are verified and mirrored against a greater body of perception. This intervention includes facilitating decisions about what needs to be done next or how things could have been done differently.

Content is more than just information to be learned and skills to be mastered for educational purposes. Dewey (1933) argued long ago that if content is to be more than information for educational purposes, it must bear some relationship to "the questions in which the child is concerned" and it must "fit into the child's more direct acquaintance so as to increase its efficiency and deepen its meaning" (Horton & Hutchinson, 2004). When selecting content for a science course or for a particular unit of study, the

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planner must take into account the potential of the content to address all the cognitive, social and affective dimensions of the individual learner, with understanding of the interests, needs and abilities of the target audience.

Cognitive theorists, such as Bloom, dealt with the hierarchical nature of knowledge in the cognitive domain, while humanists, such as Maslow, concentrated on the affective domain and how "learners attempt to take control of their life processes" (Kelly, 2004). Both fields acknowledged the importance of experience, but neither could formulate an adequate theory as to its function in learning. However, cognitive and humanistic research began to focus more and more towards the importance of experience. In the early 1980's, Mezirow, Freire and others stressed that the heart of learning lies in the way we process experience, in particular, our critical reflection of experience (Kelly, 2004). They spoke of learning as a cycle that begins with experience, continues with reflection and later leads to action which itself becomes a concrete experience for reflection.

Most curriculum developers agree that content should be organized by going from the learners' immediate environment to a more distant environment; that is, content should be organized so that the concrete is experienced before the abstract. This psychological factor is a key principle when basing content sequencing in applying the Experiential Learning Theory, which combines content with experience, perception, cognition, and behaviour. In "The Experiential Learning Experience as the Source of Learning and Development," Kolb (1984) describes experiential learning as a holistic integrative approach. Building on the writings of Dewey and Piaget, Kolb (1984) postulates that content is best organized along an experiential path, where learning takes place as a series of transactions among four adaptive modes: **concrete experience, reflective observation, abstract conceptualisation, and active experimentation:**

- In concrete experience, the learner is openly introduced to the content as a new experience.
- In reflective observation, the learner reflects and observes the content from many different perspectives.
- In the active experimentation mode learners create concepts, in which observations are formed into generalizations, in the applications and make decisions.
- In the abstract conceptualisation phase, learning involves using logic and ideas.

Kolb (1984) reminds us that higher forms of cognition, creativity, and personal development often require a more dynamic interaction among the four modes.

Hierarchy of experiences

When designing educational experiences, it is important to consider not only the level of involvement for each experience, but also the standards of quality for the experience and the learner's ability to respond. When matching experiences with content, one must begin by establishing a range of experientiality for the unit. To facilitate the process, Gibbons (1990) has adapted this aspect of decision-making to the following hierarchy of experiences:

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- *Receptive mode*. Experiences, or representations of them, are presented to learners, who remain as a passive audience throughout.
    1. *Simulated experience*. Learners passively experience pictures, videos and other simulations of reality.
    2. *Spectator experience*. Learners experience the object of study with all senses, but as observers.
- *Analytical mode*. Learners conduct field studies in which they apply theoretical knowledge and critical thinking skills in order to study some events, analyse some aspects of the environment or solve some practical problems.
    1. *Exploratory experience*. Learners are exposed to interesting sites and encouraged to explore the possibilities of the materials at hand.
    2. *Analytical experience*. Learners study field sites systematically, often applying theory to solve some practical situations.
- *Productive mode*. Learners generate products, activities and services that are either assigned or of their own devising.
    1. *Generative experience*. Learners build, create, compose, organize, or otherwise generate products in appropriate settings.
    2. *Challenge experience*. Learners are challenged to pursue goals of productivity and accomplishment.
- *Developmental mode*. Learners pursue excellence in a particular field by designing and implementing long-term programs of study, activity and practice.
    1. *Competence experience*. Learners focus on a particular field, practice the skills involved, become absorbed in the activity, and achieve recognized competence.
    2. *Mastery experience*. Learners go beyond competence, developing commitment to a set of high personal standards of excellence.
- *Psychological mode*. Learners achieve an understanding of themselves and their relationships with others. They accomplish the task presented by their stage of development toward maturity and make contributions to the lives of others.
    1. *Personal growth experience*. Learners gain understanding of themselves as unique individuals and learn to direct their own activities effectively and responsibly.
    2. *Social growth experience*. Learners become more socially competent with people of all ages and act in more socially responsible ways, using their accomplishments in service to the community.

According to Gibbons' (1990) hierarchy of experiences, as the degree of experience increases, the learner takes on more responsibility for learning. At an introductory level, an experience at the lower end of the scale may be quite appropriate. On the other hand, if a unit builds on previous knowledge and is designed for highly motivated and competent learners, experiences should be at the higher end of the scale.

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Gibbons (1990) defines the elements of experiential learning as the things that make the experience happen, including the nature of the activities selected, the skills to be applied through the activities, and the way in which the activities are facilitated. The activity element of a structured experience is often referred to as the instructional methodology by which learning takes place. It reflects a multitude of both formal and informal teaching methods. Figure 1 illustrates the learning activities representative of each component of Kolb's (1984) model. Activities such as field experiences, inquiry laboratories, direct data collection, and the reading of primary sources are all designed to give the learner personal experience with the content. Discussions force students to reflect on their experiences and the experiences of others. Model building exercises, research papers and lectures that present a model are examples of activities that foster abstract conceptualisation. Simulations and projects force the learner to apply the models on problem situations.

	Concrete Experience	Reflective Observation	Abstract Conceptualization	Active Experimentation
Learning activities	Observations Laboratories Primary text reading Problem sets Examples	Textbooks Journals Discussion Brainstorming Questions	Lectures Papers Projects Analogies	Simulations Laboratory work Projects Homework

Figure 1. Kolb's model with activity components in science teaching/learning process

Kolb emphasized that all science activities fall under eight categories of science process skills: exploration, focusing, grounding, structuring, investigation, verification, recording, and communication. The knowledge-based skills of Bloom's taxonomy of the cognitive domain are found under Kolb's headings of exploration and focusing. The remaining cognitive skills, often called "higher-order skills", are found under the headings of grounding, structuring, investigation, verification, recording, and communication.

Kolb's research aligns these various skills with the science skills categories linked to experiential model, as shown in Figure 2.

Experiential Education	Concrete Experience		Reflective Observation		Abstract Conceptualization	
Scientific inquiry process domains	Problem finding		Question asking		Answer seeking	
Science skill categories	Exploring	Focusing	Grounding	Structuring	Investigating	Verificating

Figure 2. Kolb's model with inquiry process domains, skill categories and compilation of science skills

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A most effective activity, in which the learner extracts meaning from experience, is inquiry-based learning. In inquiry based learning, the learner extracts meaning from experiences and learns how to continue learning. In an attempt to understand the world, students acquire scientific skills that provide them with the most powerful tools for producing and arranging information about the world. Learners engaged in science activities use such skills as inferring, hypothesizing, measuring, estimating, and experimenting to bring meaning to their world. Inquiry-based learning is manifested in a variety of curricular and instructional approaches; it can be individual or collaborative. Working collaboratively allows students to explore and share their existing views, which is considered essential to addressing issues in education. It also allows for explicitly connecting new information to existing ideas through dialogic means with peers and the teacher (Conner, 2004).

There is much evidence to suggest that using group work helps students to learn. In a group work, teachers would be expected initially to give an introduction to the whole class about what is required. Asking questions can encourage new kinds of thinking, providing feedback on group progress. During whole class or small group discussions, the teacher can enable students to build on their existing knowledge by focusing, reporting, consolidating, or presenting a thoughtful argument. Focusing can include giving direction for activities, setting time limits, setting deadlines for completion of tasks, pacing activities, generating interest, directing attention to important features of the discussion, asking higher order questions, and waiting for answers (Conner, 2004).

Practical work is essential not just for learning material content, but also for pupils to make their own personal contact with scientific work, with its delight and sorrows. They need to meet their own difficulties like any professional scientist and enjoy their own successes, so that the relationship of scientific knowledge to the experiment is something they understand.

Some characteristics of science education in Latvia high school

The system of optional educational programs in secondary education was introduced in the school year 1999/2000. Students could select one out of four educational programs: 1) general program, 2) humanitarian and social program, 3) science and mathematics program, and 4) professional program. Students who have selected humanitarian and social or general program are not supposed to study physics, chemistry and biology as separate subjects. The first project regarding the school subject Science was realized in Latvia in 1996. It implicates the studies of physics and astronomy in grade 10, chemistry in grade 11 and biology in grade 12.

There are ongoing discussions about the best way to teach science for students in humanitarian and social or general education programs. For such programs, the science curriculum should give all students the opportunity of achieving scientific literacy. It is necessary to foster the professional development of teachers, so that they would be able to use a learner-centered and teacher-facilitated approach to instruction ensuring interdisciplinary links with science knowledge and scientific skills development.

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Empiric research: Phase I

The aim of the research was to collect information about the main problems of science teachers.

Participants

Phase I of empiric research began in summer 2004 during in-service teachers course "Science teaching at school: Problems and solutions". Participants of this research were 18 science teachers from Latvia high schools and gymnasiums who teach science for students from humanitarian and social or general education programs. The participants of the research represented different regions of Latvia: Latgale, Vidzeme, and Zemgale. Seven teachers had physics teacher qualification and the experience of teaching themes of physics included in school subject of science; 11 of them had biology and chemistry teacher qualification (six of them had the experience of teaching both biology and chemistry themes), and one teacher had geography teacher qualification, three teachers had the experience of teaching entire science course. Teachers had the following experience in teaching science as a school subject: 1-2 years – 28 %, 3-4 years – 16%, more then 5 years – 56%.

Instruments

The data were collected using the questionnaire developed by the author of article and consisting of 23 questions: about teachers qualification, experience, personal beliefs about the necessary teaching/learning for integrated science course and integration of some themes, problems, views about the aims of teaching science and the organization of learning process.

Results and discussions

The main problems discerned by science teachers were the following:

1. Students do not want to acquire science knowledge (55%);
2. After leaving primary school, students have different level of knowledge and abilities in science subjects. This creates difficulties and requires a differentiated approach in high school (33%);
3. The shortage of literature on methodology, teachers' guides (66%);
4. Teachers have some difficulties selecting content for interdisciplinary themes (22%);
5. The shortage of equipment for science demonstrations and laboratory work (61%).

The answers provide evidence of the low level of motivation of students. It is possible that the process of education is more subject-centred and less focused on students' learning. This confirms the need to promote teachers' professional competence of organizing learning process in science through experiential approach. During in-service courses, teachers obtained information about different educational strategies, which are based on the experiential approach.

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Empiric research: Phase II

Phase II of empiric research was carried out during school year 2004/05. The aim of this phase was to compare students' learning achievements in science in schools using learner-centred and experience-based strategy and in those schools where teachers use traditional approach to science teaching.

Participants

Four teachers participating in in-service courses mentioned above collaborated with the author of the article during the school year. In their teaching, they used learner-centred and experience-based educational strategy. These teachers organized learning process of science (physics part) for 97 students. This group was established as an experimental group. Learning process in the control group was organized by science teachers who didn't attend in-service teachers courses, but had some experience in teaching science. They were teaching in the traditional way. The control group consisted of 73 students. Students from Daugavpils, Riga, Ogre, and Kraslava participated in the survey.

Instruments and procedures

At the end of the 1st semester, students from experimental and control groups passed the test created by the author of article. The theme of the test was "Space". This theme has a potential to promote the science literacy and endow students with multidisciplinary learning opportunities. The test consisted of 20 true/false questions and a creative task: to design interview questions for space scientist. The time allotted for the test was 30 minutes.

Interview questions were divided and evaluated in four groups: questions about science as a profession (e.g.: Why did you choose this profession?), formal questions (e.g.: What planet has the greatest number of satellites?), non-scientific or naive question (e.g.: What star do you want to become after death?), and creative or problem questions (e.g.: What changes will happen on the Earth in 1000 years?). Results are presented in Table 1.

Results and discussion

	True answers on true/ false questions %	Interview questions			
		Questions about science as a profession %	Formal questions %	Non-scientific or naive questions %	Creative or problem questions %
Experimental group	67	13	39	11	34
Control group	65	11	56	5	24

Table 1. Comparison of test results between experimental and control group

The research shows that there is small difference between the experimental and control group students' answers to traditional knowledge questions. Bigger differences were in the creative task. Students from the experimental group wrote more questions (7–10 questions) for interview than students from the control group (5–9 questions). Experimental group students would like to ask less formal questions and more creative and problem questions than control group students. Creative and problem questions show that students from experimental group better see connections between science, environment and human beings.

Conclusions

The central argument, that all students should became more scientifically capable as part of their education, can be considered from theoretical perspectives which have informed the literature in recent years.

The results of science teachers' work in classroom depend on pupils, teachers and materials. The emphasis should not be put on changing what has been learned but on the way of learning. Students can be given creative expression to engage in talking, thinking, and doing science. There are many theories that emphasize students' active construction of new knowledge based on their experiences.

There is an urgent need to reconstruct the models of science teacher training and think about new approaches towards modernizing teacher education. The emphasis should be put on the transition from outer-directed, "expert"-driven curriculum and methodologies to more learner-centered, experience-based, connected ways of acquiring knowledge, skills, and attitudes. The instruction methods for the new facilitation of learning process with the emphasis on experiential learning should be considered in science teaching, as well as on all levels of schooling.

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Multiple Communicative Competences: A Challenge for Foreign Language Teachers

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Abstract

Foreign language teaching has evolved to meet the challenges of the twenty-first century by putting a new emphasis on learning for communication, or communicative competence. The article argues that a further evolution is required to take account of different effects of engaging with diversity, of encountering learners of different social values and behaviours. The necessity to develop a pedagogy that enables effective communicative competence in all its dimensions, including intercultural communicative competence, has been accentuated.

The issues that are discussed in this paper are: diverse interpretations of communicative competence, the distinction between communicative competence and communicative performance, the use of meaning-based classroom practices, which engage learners in authentic communicative performance, as a way of developing higher level skills in using the target language.

Key words: *communicative competence; linguistic competence; sociolinguistic competence; strategic competence; discourse competence; intercultural communicative competence; communicative abilities.*

Recent years have seen many exciting developments in language teaching. In Latvia at present, there is much emphasis on an early start to foreign language instruction, increased contact hours for language studies, and communicatively oriented teaching. In recent years, there has been a major shift in perspective within the language teaching profession concerning the nature of what is to be taught. There has been a change of emphasis from presenting language as a set of forms that have to be learnt and practiced, to presenting language as a functional system that is used to fulfil a range of communicative purposes. This shift in emphasis has taken place as a result of convincing arguments that the ability to use a language should be described as communicative competence. Since the goal of language teaching is to enable learners to use language in ways that are communicatively effective and appropriate, the study of the communicative functions of language has assumed an increasingly important role.

Traditionally the focus of attention has been on the linguistic skills, based on the assumption that once these are acquired the communicative capabilities that involve an understanding of the communicative value of linguistic elements in context will follow as a more or less automatic con-

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sequence. But evidence suggests this is not the case: the acquisition of linguistic skills does not seem to guarantee the acquisition of communicative skills. There are many foreign language learners who have acquired separate grammatical structures and lexical items, but very often they cannot communicate appropriately. It is the problem of the learner who may be structurally competent, but who cannot communicate appropriately. Many of the difficulties that learners have had derive directly from the teaching that has been imposed upon them. This has tended to represent language as a set of formal elements without a real communicative context and without a real communicative purpose.

The learners need to acquire different communicative capabilities that involve an understanding of the communicative value of linguistic elements in context. It cannot exclusively be achieved by a course that provides practice in the composition of sentences, but only by one that develops knowledge of how sentences are used in the performance of different communicative acts. The ability to compose correct sentences is not the only ability we need to communicate. We do not communicate by composing sentences, but by using sentences to make statements of different kinds, to give a presentation, to introduce arguments and opinions, to explain causes and results, to exchange information, to ask for clarification, to make deductions and assumptions, to record, to classify and so on, **or** to define and describe, to make hypothesis, to contradict, to speculate. Knowing what is involved in putting sentences together correctly is only a part of what we mean by knowing a language, and it has only a limited value on its own: it has to be supplemented by some knowledge of what these sentences mean as a tool for communication. It might ask to reorient language teaching towards a major focus on communicative capabilities. It would, of course, be a mistake to devote attention exclusively to communicative acts in the preparation and presentation of language-teaching materials. In language teaching, one has to make compromises and adjust one's approach to the requirements of learners.

Jacobs and Farrell (2003) suggest there are eight interconnected aspects of communicative language teaching which need to be taken into account: learner autonomy, the social nature of learning, curricular integration, focus on meaning, diversity, thinking skills, alternative assessment, and teachers as co-learners. They conclude by arguing that teachers need to implement change holistically, so that all aspects of communicative language teaching are taken into account. The concept of communicative language teaching is no longer understood as studying functions, notions and being an antipode to teaching structures of the language. Contemporary communicative teaching or post-communicative trend is a balanced comprehensive view upon teaching and learning, employing a multi-syllabus approach to materials' design that builds on "a range of communicative criteria at the same time acknowledging the need to provide systematic practice in the formal properties of language" (McDonough & Shaw, 1993: 50).

Many articles and books have already been written on the subject of communicative language teaching. Many have been of a very theoretical kind and may leave practising language teachers wondering how the new ideas can actually be applied to the classroom. The present article explores

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the benefits of meaning-based activities, which engage the learners in genuine and meaningful performance.

Interpretations of communicative competence

Since the introduction of the term 'communicative competence' into the language teaching literature, there have been numerous interpretations of its meaning. The term 'communicative competence' does not seem to be used in the same sense by different writers. According to Chomsky (1965), competence is defined as the speaker-hearer's knowledge of the language. Competence is an idealization: it is the knowledge of an "ideal speaker-listener who knows his/her language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors in applying the knowledge of language in actual performance" (1965: 3). Competence means knowledge of the language system, grammatical knowledge in other words.

Contemporary views are more likely to incorporate Hymes' (1972) discussion of communicative competence, which considers whether something is formally possible, whether it is appropriate, whether it is feasible psychologically, and whether it is done. Hymes argues that communicative competence must include not only the linguistic forms of a language but also knowledge of when, how and to whom it is appropriate to use these forms. Hymes' view is a definite challenge to Chomsky's linguistic competence with its exclusive attention to formal linguistic elements.

Canale (1983) proposes a model of communicative competence which distinguishes four component competences: grammatical or linguistic, sociolinguistic, discourse, and strategic. According to Canale, these competences are the basic elements constituting a user's overall competence in any language. The mastery of the forms of a language constitutes the aspect of a foreign language that can be referred to as linguistic competence, i.e., competence with reference to formal and semantic features of the language. The mastery of the forms of a language which is intuitive and yet can be made conscious under certain circumstances, for example, in case of the breakdown of communication, in misunderstandings, also in communicative pathologies, or in the search for an expression, 'tip-of-the-tongue' phenomenon is a characteristic of foreign language proficiency, which foreign language learners in the early stages of mastering a foreign language lack entirely and acquire only gradually as they progress. This is a capacity to use the language with maximum attention to communication and minimum attention to form. In such a case the student can express the self successfully.

The dimension of sociolinguistic competence entails the communicative ability to use and interpret language forms appropriately. The context – who is communicating with whom, about what, where, for what purpose – determines the choice of language forms. The act of talking involves not only production of sounds but also the use of gesture, tone of voice, the movements of the muscles of the face, and indeed the whole body. So the dimension of strategic competence entails the ability to effectively transmit and receive information to particular addresses.

Discourse competence, that is, the communicative ability to perceive and achieve coherence of separate utterances in meaningful communica-

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tion patterns is another aspect of communicative competence. Conversation is seen as an activity that is directed to social goals as well as linguistic goals. The introduction of topics, openings and closings, the pairing of utterances and turn-taking conventions are in focus.

However, there is much criticism about the model. Language use cannot be analysed and described as a set of components of various kinds. Competence is a monolithic concept. Widdowson (1979: 248) argues that communicative competence is not a list of learnt items, but a set of strategies or procedures "for realizing the value of linguistic elements in contexts of use". Furthermore, the model focuses exclusively on standardized native speaker norms. Many scientists, such as Alptekin (2002) and Hyde (1998), argue that it is absolutely necessary to take account of affective and cognitive effects of engaging with diversity, of encountering people of different cultural identities and social values and behaviours. Communicative competence, with its standardised native speaker norms, fails to reflect the lingua franca status of English.

Alptekin (2002: 57) states: "A new notion of communicative competence is needed, one which recognizes English as a world language. This would encompass local and interactional contexts as settings of language use, involve native – non-native and non-native – non-native discourse participants, and take as pedagogic models successful bilinguals with intercultural insights and knowledge. As such, it would aim at the realization of intercultural communicative competence."

The phrase expands the concept of communicative competence in significant ways. Communicative competence is now seen as inadequate without an awareness of the cultural dimension of interacting in a foreign language.

While all the components of communicative competence are related, they can develop rather independently as the learners acquire a foreign language. For example, the learners can know a great deal about the grammatical structure of a foreign language, yet be unable to apologize in a manner which native speakers would find acceptable and polite. A learner may be quite effective at transmitting information in the foreign language, but always with many grammatical errors. In this case, strategic competence is better developed than grammatical competence in the language.

Communicative competence and communicative performance

Chomsky first drew the distinction between performance and competence in 1965, in "Aspects of the Theory of Syntax". According to Chomsky (1965), competence consists of the mental representation of linguistic rules that constitute the speaker-hearer's internal grammar. Performance consists of the use of this grammar in the comprehension and production of language.

The distinction between competence and performance had been extended to cover communicative aspects of language (Hymes, 1972; Canale, 1983). Communicative competence includes knowledge the speaker-listener has of what constitutes appropriate as well as correct language behaviour and also of what constitutes effective language behaviour in relation to particular communicative goals. Communicative performance consists of the actual use of these two types of knowledge in understanding and pro-

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ducing discourse. Though the capacity for using the types of knowledge in understanding and producing discourse is sometimes limited as language acquisition always involves different forms of alienation; alienation between the critical me and the performing me. Even at a more advanced level of foreign language studies, language and psychological barriers may inhibit the development of communicative capabilities. The learners must not reduce or abandon learning effort and should be equipped with communicative strategies that enable them to overcome gaps in understanding, achieve communication, and help compensate for imperfect knowledge of rules, or for factors such as inattention, distraction, which limit the application of such rules.

The quality of communication will depend heavily on the quality of both communicative competence and communicative performance. Following Canale (1983: 3), communication is understood to have the following characteristics: it

a) is a form of social interaction;
b) involves a high degree of unpredictability and creativity in form and message;
c) takes place in discourse and sociocultural contexts;
d) is carried under limiting psychological and other conditions such as memory constraints, fatigue, distractions;
e) always has a purpose;
f) involves authentic language;
g) is judged as successful or not on the basis of actual outcomes.

It is only through performance that competence can be developed, maintained, and evaluated and formal debate, which engages the learners in genuine and meaningful performance, is an effective way to make it happen. Firstly, formal debate is a form of social interaction. It has specific structures, rules, and limits. The debaters deliver speeches in a format that is unique to debate. The constructive speeches are used to build the arguments that the affirmative and negative teams hope to win. The rebuttals are used to solidify the position taken by each team to convey to the judges why they should vote for one team over the other. So the affirmative speakers argue in favour of the resolution and seek to convince the judge that the resolution is true, but the negative speakers argue against the resolution and want most to prove to the judge that the resolution is false. The learners give the judge strong arguments to believe that their position is correct. The judges will want to see that speakers have thought the arguments on both sides of a particular resolution and that these arguments can withstand attacks from the opponents. Along with the arguments debaters need to supply the judge with the evidence to support their reasoning. In debate, evidence is acquired through research and is primarily the opinions of experts within the field of argument. Most, but not all, educational debate provides each debater with the opportunity to answer questions from the opposing speaker. The questions can be used for clarification of a position or they can suggest potential flaws in the opponent's case, and the information can be used in the constructive speech. After following the flow of the debate and listening to the arguments on both sides of the resolution, the judge will indicate on a ballot which team holds the correct, true, or preferable position on the resolution.

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Secondly, formal debate is not merely interactive and analytical. Formal debate involves a high degree of unpredictability and creativity in form and message and is carried under limiting psychological and other conditions such as memory constraints, fatigue, and distractions. In any given debate tournament round, the learners may be called on to affirm or negate a particular issue. The learners will need to explore their repertoire in order to express ideas for which they have not been specifically prepared and this increases the unpredictability of the interaction. Because the debaters must alternately argue both sides of the argument in any given tournament, it requires making decisions about what they will say and what they will not say. So there is a good chance to become flexible arguers.

Thirdly, formal debate always has a purpose and, as an extended oral activity, is judged as successful or not on the basis of actual outcomes. The primary goal is to achieve a particular outcome or product: to negate or approve a particular resolution, that is, the topic being discussed in a debate tournament. The purpose of the resolution is to limit the debate. The resolution determines the debate area, as well as allows for an even distribution of ground for both the affirmative and the negative team.

However, there seems to be difficulty in implementing formal debate in the classroom because there is no practice on debating in current foreign language textbooks used in Latvia. The foreign language teachers will need to design activities, which focus on presenting a balanced argument and delivering a successful presentation. Some students may find it difficult to argue a point of view they do not hold. Furthermore, for some students it is challenging to be honest in the arguments. Sometimes this involves admitting a lack of good support for the claims. Sometimes it means acknowledging that there is a fault in the logic. These admissions are nevertheless beneficial because, in the long run, the debaters will learn and improve their skills more as a result of their honesty.

Research organization and methods

To explore the benefits of a communicatively oriented foreign language learning process, a comparative investigation of three groups (respectively A, B, C) of university students was carried out at Daugavpils University during academic year 2003/2004. The sample comprised 70 pre-intermediate and intermediate level students, the learners of English as a foreign language, who have had 9 or 10 years of language practice at school. Each group was observed for two hours a day, twice a week, over one year period. The investigation sought to determine whether different classroom practices had any effect on the development of communicative capabilities. Group A differed from the other two in a number of ways. This group spent more time on form-based activities with an explicit focus on grammar, while groups B and C spent more time on meaning-based activities such as discussion, argumentation, and debate. Groups B and C had much more authentic activity types than group A. The groups differed in the way in which certain activities were carried out, particularly listening activities. On the whole, group A spent twice as much time on form-based work as group B and triple the time spent by group C considering the number of hours.

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The theoretical construct for the study was provided by Canale's (1983) model of communicative competence consisting of four components: *grammatical* or *linguistic*, *sociolinguistic*, *discourse,* and *strategic.*

Grammatical competence, that is, the ability to produce and understand correct syntactic and phonological forms in a language, was investigated by studying the development of pronunciation and the mastery of grammar. Speaking, reading, listening, and writing were also assessed by various tests.

Sociolinguistic competence – the learners' ability to use and interpret language forms with situational appropriateness (van Ek, 1986) was evaluated through a discursive analysis of the learners' utterances.

Discourse competence, that is, the ability to perceive and to achieve coherence of separate utterances in meaningful patterns (van Ek, 1986) was evaluated through a series of taped debate classes and argumentation classes.

Strategic competence is the ability to use verbal and non-verbal strategies to compensate for gaps in the user's knowledge of the code (van Ek, 1986). This is the ability to effectively transmit and receive information to a listener. In examining this aspect of the learners' competence, the author tried to draw on a video record.

The author drew on several data sources, including taped public speaking classes, argumentation classes, and debate.

At the beginning and at the end of the academic year, the learners were given various tests including the Comprehensive English Language Test, teacher-designed tests of reading, writing, and a multiple choice sociolinguistic and discourse test. The Speaking Test produced by the University of Cambridge Local Examinations Syndicate (UCLES) was used to evaluate spoken language ability. The speaking test consisted of four parts, each of which focused on a different type of interaction, different discourse types (short turn, long turn, etc.) and had features such as turn-taking, initiating and responding, exchanging information, describing and comparing, stating and supporting an opinion, agreeing and disagreeing, expressing certainty and uncertainty.

Results of research

The students from groups B and C who participated in a competitive debate enjoyed a number of positive benefits. Improved communicative capabilities was the first and the most obvious of these. The debaters were significantly better at employing different communicative capabilities (analysis, delivery, and organization) than the learners from group A, who had not had any debate experience. Debate training improved interpersonal communication skills as well as public speaking competence. The questioning skills were developed in cross-examination.

On the whole, *grammatical competence* was the learners' (group A) greatest strength over the duration of the study. Both *grammatical* and *discourse competence* was the learners' (groups B and C) greatest strengths and the areas where the greatest improvement was evidenced during the academic year. The learners from groups B and C were especially good at listening to what people said and picking up topics for further development. The ability to listen, organize, and take notes provided the basis for

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success. Groups B and C improved their listening significantly more than group A, despite the fact that group A spent more time on listening practice than the other groups. The learners' improvement in the area of *sociolinguistic competence* reflected their high motivation to engage in interaction. In the early stages, the learners used a limited number of formulaic utterances, but there was evidence of development over time. Considerable improvement was evidenced in the area of *strategic competence*. In groups B and C communication breakdowns were not uncommon, however the learners were able to repair these breakdowns. Personality variables such as persistence, confidence, and willingness to communicate seemed to the learners to go a long way towards compensating for grammatical shortcomings. Both the nature of themes, topics explored and the actual strategies employed, i.e. debate and argumentation generated greater motivation in the use of the foreign language.

Overall, the results provide evidence to support the maintenance of debate programmes. The challenge is to integrate these experiences as a part of our curriculum.

Conclusion

Contemporary theories of communicative competence provide language teachers with knowledge and guidelines that empower them to make informed decisions about classroom practice. The necessity to develop a pedagogy that enables effective communicative competence in all its dimensions is to be accentuated. Traditional language teaching methods and materials are characterized as concentrating on the development of linguistic competence, almost to the exclusion of the other elements.

Communicative competence includes knowledge the speaker-listener has of what constitutes appropriate, as well as correct language behaviour and also of what constitutes effective language behaviour in relation to particular communicative goals. Performance consists of the actual use of these two types of knowledge in understanding and producing discourse. As communicative competence can be developed, maintained, and evaluated only through performance in meaning-based classroom practices that engage the learners in genuine and meaningful communicative acts, this practice could have a profound and significant effect on the development of higher-level skills in using the target language.

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Assessment of Pre-school Children Entering School: Perspectives of Interaction and Integration

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Abstract

The assessment of learning skills and development of children entering school is based on the questionnaire Assessing Child's Learning and Development compiled by researchers of Helsinki University (Hytönen & Krokfors, 2002). The questionnaire was carried out in kindergarten groups preparing children for school in Tallinn in May 2003. The present article relies only on the results collected by researchers of Tallinn Pedagogical University (L.Talts, M.Vikat, H.Sikka, E.Mägi) about 198 children living in different districts of Tallinn. The article mainly focuses on the constituent skills of three target areas – language and communication, mathematics, art and culture – out of the nine assessed by teachers.

Key words: *preschool education; child-centred approach; learning environment; school readiness; integration.*

Pre-school education is an activity that relies on interaction of people, the aim of which is to ensure child's learning ability and guarantee continuity in the transition from kindergarten to school. Estonian Core Curriculum of Pre-school Education (1999) determines the required results of the development of a child entering school, whose achievement largely depends on the teacher's ability to identify child's objects of interest and needs while creating a stimulating environment for him or her.

According to the theory of Jean Piaget (1963), a child who goes to school is in the borderland of preoperational and concrete operational stages. It means that 6–7 years old children are about to overcome their egocentrism and see the causes of events outside themselves. At that period the child-centred approach to learning, which proceeds from a child as an individual and also as a member of a collective body, while planning children's activities, is especially favourable to the developmental needs of children. Learning is considered an active process, which takes place in interaction with the environment and the main method of which is pedagogical supervision of play. The teacher is expected to have sensitivity and responsiveness, as well as pedagogical and psychological knowledge. Here learning experience, versatile development of cognitive abilities, not concrete knowledge, and acquisition of education are of primary importance for the child. Child-centred education outlines teacher's active participa-

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tion in the learning process (Hytönen & Krokfors, 2002; Wood & Bennett, 2001), which allows prior planning of activities and defining the priorities.

In the pre-school period and during the transition to school, considering L. Vygotsky's model of The Zone of Proximal Development helps to support child's learning. The model observes two aspects that can be defined by teachers: first, the things child is able to do without assistance from others (the actual level of development) and second, what a child is able to do under the supervision of an adult (the potential level of development) (Vygotsky, 1981). The teacher has a great responsibility to the parents but also to the child's future school, as both of them hope that kindergarten is able to provide the child with a sufficiently good preparation for his or her studies at school.

The **aims** of the article are as follows:

1) to deal with teachers' assessment of the development of children entering school in three target areas (altogether nine areas were assessed): language and communication, mathematics and art, and culture;
2) to explore the age variations of children assessment.

The authors of this article have proceeded from the point of view that child's development is not connected with learning one specific subject. Preparation for school is a process where different fields of activity support each other. Thus, music and art may perfectly support the learning of mother tongue and mathematics, and vice versa.

Teacher-child interaction in the learning process

The Vygotski-type approach to learning emphasises the essential role of the teacher as a supporter of child's learning. It is important for the teacher to observe child's activity and formation of interest in the things learned and thus map the zone of immediate development of the child (Hännikäinen, 1995). Teacher's activity is focused on arousing child's learning ability and setting it into action. When a child is motivated and inspired by the activity, he or she needs teacher's guidance and support. According to Webster-Stratton, teacher's attention is the best motivator for a child as a successful learner. Teacher's encouragement and acknowledgement promote child's self-esteem, a trusting relationship, academic and social competence (Webster-Stratton, 1999). The teacher-child interaction is one of the major fields of study in the context of the current research. Music and art are the means that help teacher and child to emotionally enrich the learning process.

A child is a developing individual, for whom the teacher creates a stimulating learning environment, in which the child acts. According to several researchers (Hobson, 2002; Ford & Lerner, 1992; Pianta, 1999; Howes, 2000; Hanko, 2002), the teacher-child interaction is the major driving force of the development of learning environment. The authors emphasise that observation of children's development has a considerable impact on teacher's understanding of how child learns at preschool age. In the common learning process, teachers can pursue two basic goals: first, to view themselves and child as independent individuals, both involved in their own process of development, and second, treat the teacher-child relationship as integration between independent individuals, where the develop-

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ment is mutually influenced. The mutual influence on learning depends on the ways teachers perceive their past experience in the present day context and how they apprehend events in the relation to the future – what they value, plan, etc.

In the process of interaction, the teacher and child may considerably influence the quality of emotional relationships and the teacher's emotional responses to children's individual ways of communication reflect children's earlier experience of communication. Children who have experienced firm affection with their close ones are more often in a harmonious interaction with their teacher. Child's readiness to communicate increases the teacher's sensitivity to him or her (Howes, Galinski & Kontos, 1998). The same researchers stress that there exists a certain group of children whom teachers prefer to others to work with and thus teachers' assessment of child as a learner may be influenced by the quality of their mutual relationship. It has been found that for teachers it is important to recognise how their own life experience may support child's social and emotional development (Solity, 1995). For teachers the problem lies in working out ways how to simultaneously notice and understand the responses of the whole group of children.

We can conclude that efficient learning takes place in the situation where the teacher tries to offer children positive learning experience through emotionally enriching interaction. Thus emotions are strongly related to the ways of interpreting the learning environment and constructing activities. The emotional bond between teachers and children eventually creates a learning environment where children's individual learning styles may also influence teachers' emotional responses in their mutual relations. As Hanko has noted, it is increasingly difficult for teachers to "think professionally" when they are negotiating their negative feelings (Hanko, 2002).

The expansion of teacher's field of sight in relation to child's learning is always connected to the learning environment supporting both the child and the teacher, where mutual positive relations can develop. The formation and development of the relations require time spent together, so that a chance could arise to share experience. Many teachers-practitioners have observed a gradual decrease of such humane aspects in the learning process. Thus, according to Hanko, tension has developed between the things teachers consider important in the learning process and official regulations, which stress the importance of measuring everything (Hanko, 1999). The opportunities for teachers to pay more attention in the learning process to emotional and social factors have diminished in recent decades, while the exaggerated focus on contest and competition brings about academic failure of many children in their future path of education. It is teachers' understanding and knowledge about the way child's development and learning happen that essentially influence the objectives, ways and methods of work.

The central structuring method of pre-school education is *integration* that allows organising education in integrated entities around such topics that are in touch with children's everyday life. This enables to combine the components of different subject areas with child's own experience. Thus, through defining the content and objectives of a subject, a synthesis, an integrated educational unit is formed, the achievement of which is not easy

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for the teacher but is definitely thankworthy. The absence of clear-cut borders between different subject areas creates favourable conditions for guiding children's development, especially for individual and integrated group work. It also creates preconditions for teaching the activities specific of language, mathematics and art by means of learning activities opening up a favourable background, such as listening-speaking, movement, artistic, music and play activities.

The observations of researchers affirm that the most valuable companion of education is positive emotionality, which is most attainable in artistic activities, while creating or perceiving what has been created.

From the point of view of child's universal development also all the activities are valuable, where the aesthetic-emotional does not dominate but has an effect in combination with other activity types. Thus, according to Gardner, there is a connection between mathematical and musical talent and activity. This was actually pointed out already by the discoveries of Pythagoras. In the Middle Ages, the sense of proportion, periodicity, certain special relations, etc. were emphasised as similar features of music and mathematics. Gardner adds that, in order to understand the importance of different rhythm elements in music, one must have elementary knowledge of numeric combinations in mathematics. Inclination to mathematical models and regularity has been characteristic of many composers, from Bach to Schumann, throughout the history (Gardner, 1983: 1259).

An expanded approach to musical activity allows us to give the sense of sound and rhythm a much wider range – from various sound effects to the sounds of nature. This in turn supports child's linguistic development. In linguistic activities such qualities of voice as pitch, volume and length are operated, creating a connection with mathematics. Thus artistic activities are characterised by the versatility of perception that probably explains the wide-ranging developmental value of arts. Sometimes visual, sometimes audio perception prevails; sometimes they combine, like in drama, movement, play, etc. Every artistic activity is simultaneously an intensive form of communication directing child's development.

E.-M. Tiit notes that art and science, more specifically mathematics, are united by their similar position in the sphere of human mental activity. Both are elite activities, which in addition to the thorough knowledge of special language also require exclusive creative talent. When dealing with scientific creation, like in the case of artistic creation, one may speak about the beauty of the results, which often lies in a certain system, regularity, simplicity. Reaching the expected results is a source of positive emotions (Tiit, 1999: 2132).

Teacher's task is to create an environment that supports learning and functions from the learning point of view that gives rise to problems on the one hand, and means for solving them on the other. This presupposes teacher-child interaction, communication and guiding child's developmental potential by the teacher.

Research methods

The assessment of learning skills and development of children who go to school is based on the questionnaire *Assessing Child's Learning and Development* compiled by researchers of Helsinki University (Hytönen &

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Krokfors, 2002). Questionnaire was carried out in kindergarten groups preparing children for school in Tallinn in May 2003. Since a similar study was also implemented in Helsinki, the questionnaire was based on the nine target areas defined by Estonian and Finnish *Core Curricula of Preschool Education*: 1) learning skills; 2) social skills; 3) language and communication; 4) mathematics; 5) ethics; 6) environment and natural science; 7) health; 8) physical and motor development; 9) art and culture. Each area was subdivided into several constituent skills, which teachers rated on a scale from one to five: 1, 2 – weak; 3, 4 – medium; 5 – excellent. The children under study were divided into four groups according to their age, an interval within the groups being two months. Thus, the following age groups of preschool children were formed: 6 years and 4 months – 6 years and 6 months; 6 years and 7 months – 6 years and 9 months; 6 years and 10 months – 7 years and 0 months; more than 7 years.

The present article relies only on the results of the questionnaire carried out by researchers of Tallinn Pedagogical University (L.Talts, M.Vikat, H.Sikka, E. Mägi) involving 198 children from different districts of Tallinn.

The following part of the article mainly focuses on the constituent skills of three target areas – *language and communication, mathematics, art and culture* – out of the nine studied, the achievement of which was assessed by teachers.

Results

Assessments of different target areas

Relying on the teachers' assessment of nine target areas, the following overview may be given (see Figure 1).

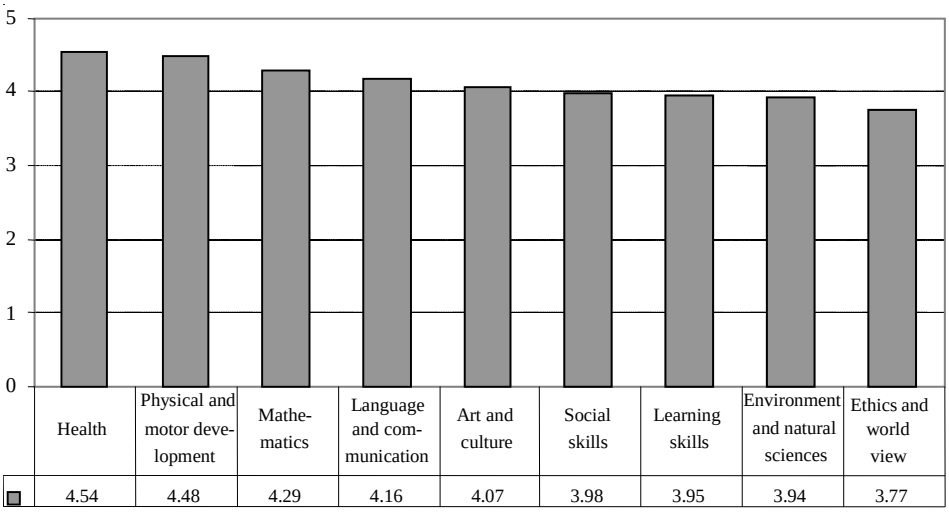

Figure 1. Teachers' assessment of different target areas of children's development (N=198)

Teachers' assessment of the preschool children's development in different target areas is relatively high – there is no mean point below 3.80 in any of the target areas. Out of the listed target areas, teachers have given the lowest assessment to children's knowledge of ethics and world view

(x=3.77), understanding of environment and nature (x=3.94) and social skills (x=3.98).

Although teachers' assessment of children's learning skills is generally above the average, according to them, the majority of shortcomings in this target area are related to children's trust in themselves as learners (x=3.70). It is also more difficult for children to set aims for their activities and pursue these aims. The ability of active learning is another learning skill that is relatively weak.

Concerning social skills, children's abilities to consider the feelings of others and to solve conflicts received lower assessment. At the same time, teachers have given high assessment to children's readiness to communicate with peers and adults.

Excellent assessment of children's awareness of health matters (x=4.54) and physical and motor development (x=4.48) refers to efficient health-related explanatory work and the popularity of physical education among children.

Kindergarten teachers have paid much attention in their work to the development of children's skills in mother tongue (x=4.16) and mathematics (x=4.29), the means of the assessment of which are high. Children's development in the field of art and culture has also received high assessment (x=4.07).

Assessment of children's constituent skills related to language, mathematics, music and art

The majority of the constituent skills related to **language and communication** have been assessed highly by teachers.

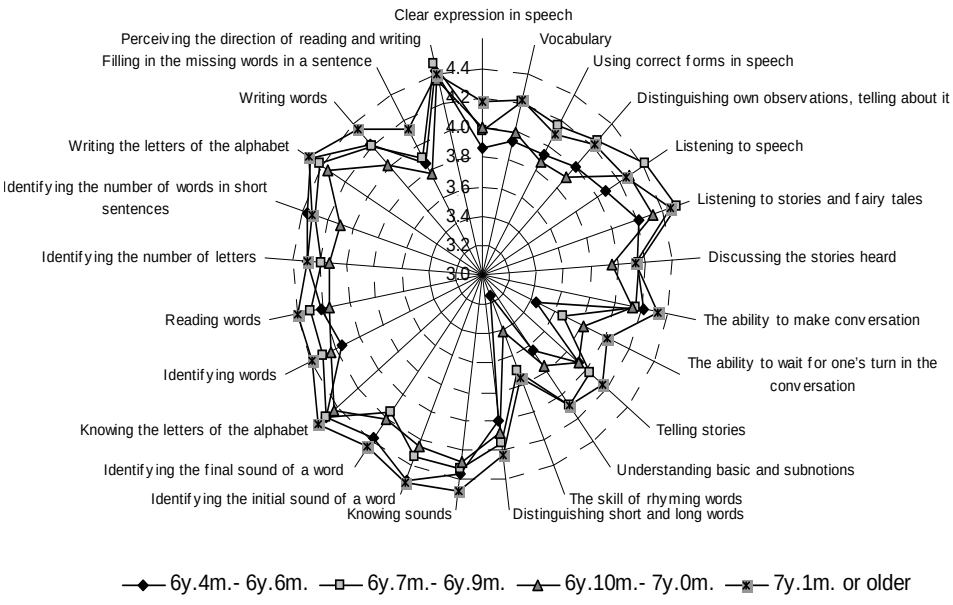

Figure 2. Teachers' assessment of the area of language and communication

Figure 2 shows that children know well sounds (x=4.37) and letters of the alphabet (x=4.51) and can write the letters (x=4.43). They are fond of listening to stories and fairy tales and have no problems with discussing what they have heard (the means respectively 4.4 and 4.08).

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Of the constituent skills listed above, knowing the letters of the alphabet occurs among the 15 strongest in the shortlist of the mean values of child's learning and development.

As seen in the Figure 2, somewhat lower assessment (below 4 points) was given to children's skills of rhyming words, finding the missing word in a sentence and waiting for their turn in the conversation. The latter confirms children's desire to communicate, talk, and express their thoughts.

The comparison of linguistic skills of the youngest and the oldest age groups revealed that teachers assessed the vocabulary and listening skill of the latter higher.

Teachers assessed children's **mathematics-related skills** even higher than those related to language and communication. Among the 15 strongest in the shortlist of the mean values of child's learning and development, the majority of constituent skills were related to mathematics. Children can very well count from one to ten (x=4.69), compare amounts (x=4.53) and learn figures (x=4.53). They understand the relation between numbers-numerals and figures. They are also well familiar with the concepts of comparison of the largest – medium – the smallest (x=4.59). Teachers assessed the majority of children's mathematics-related constituent skills in the range between 4 – 5 points.

Lower assessment was given to children's measuring skills (x=3.79). According to the teachers, older children (above 7 years of age) knew basic shapes and the cause-consequence relation better.

In conclusion, it may be stated that children's mathematics-related knowledge is good. According to Piaget, the number, size and amount are essential elements of cognition (Piaget & Szeminska, 2002: 380).

Teachers have assessed highly children's development related to **art and culture** (see Figure 3). Only some constituent skills have received an assessment somewhat lower than four points. This may be explained by the circumstance that besides the group teacher each kindergarten also has a music teacher who delivers music lessons to all age groups twice a week.

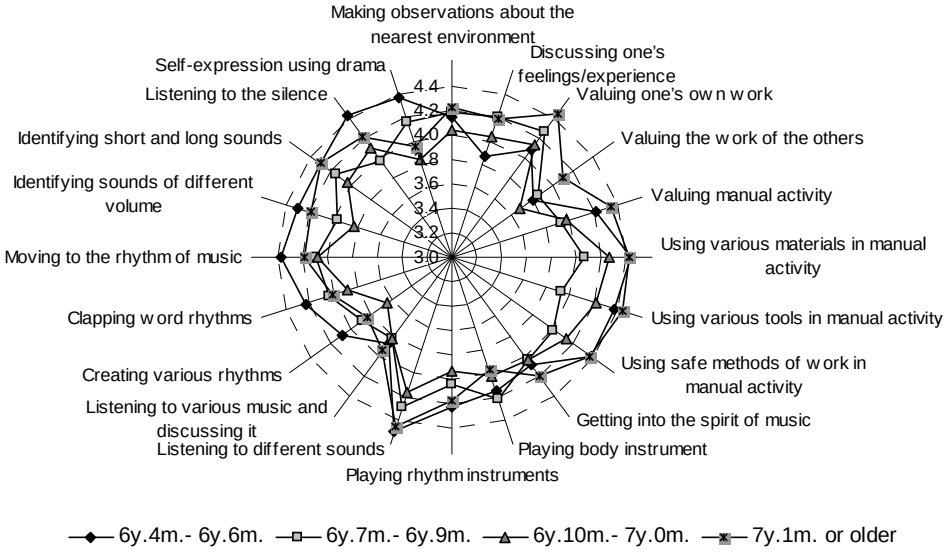

Figure 3. Teachers' assessment of the area of art and culture

In the area of art and culture, constituent skills of music education dominate, of which the skills of listening to various sounds (x=4.32) and identifying short and long sounds (x=4.32) were assessed as the highest. Both of these skills are fundamental from the point of view of child's musical development. The basic activity components of music education, such as playing body and rhythm instruments (x=4.04; x=4.06), moving to the rhythm of music (x=4.14) and the ability to get into the spirit of music (x=4.1) have been assessed highly.

As compared to the above, children's constituent skills related to creativity have received somewhat lower assessment: creating various rhythms (x=3.79), clapping word rhythms (x=3.98), listening to various music and discussing it (x=3.87). Slightly higher assessment has been given to the skills of discussing one's feelings and experience (x=4.11) and making observations about the nearest environment (x=4.14).

Valuing one's own work has received a very high assessment (x=4.28), whereas valuing the work of the others has been assessed much lower (x=3.90).

All the skills related to **manual activity** have received high assessment. Thus, using various materials (x=4.30) and tools (x=4.26) and the command of safe methods of work (x=4.21) have received almost the maximum points.

High assessment given to the skill of listening to the silence (x=4.15) deserves to be pointed out, because in the noisy environment surrounding contemporary children this is a very special manifestation.

Teachers' assessment of the area of art and culture did not reveal any differences between age groups.

Discussion and conclusion

In Estonian educational system, the questions related to the content and amount of teaching have become increasingly topical in pre-school education – the basic skills needed at school are considered important by childcare institutions in the transition to school. Parents, schools and kindergarten teachers are not always sure whether the pre-school education provided by kindergartens is at the required level and children are sufficiently competitive as the result. The situation where competition to the so-called elite schools has prompted parents to enrol their children also in pre-school training groups ran by schools has created a certain feeling of insecurity. This results in children being pre-taught to the extent that the kindergarten curriculum is not exciting to them any more. This is proved by high assessments of children's school readiness given by teachers – the pre-school curriculum is not difficult for children.

It appeared that teachers' assessment of children's preparation in mathematics, mother tongue, music and art was high. The curriculum of pre-school education allows shaping these skills in activities and lessons, as well as in daily actions and play. Integration between subjects enables a child-centred approach and good preparation for school.

In pre-school groups, children's age may vary by nine months and it appeared that there were differences in teachers' assessment of the youngest and the oldest age groups. The weaker assessment was given to younger children's listening skills, following the agreed rules, the amount of vo-

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cabulary, recognising the connection between cause and consequence. At the same time everything prescribed by the curriculum has been well acquired by the younger children as well.

In conclusion it may be said that kindergarten teachers have a serious attitude towards preparation of children for school. They try to fulfil the expectations of parents, school and general public. Teachers have adopted the principles of child-centred pedagogy, which is indicated by the good results children have produced in various fields: mother tongue, mathematics, art and music.

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School Readiness as a Continuing Process: An Empirical Analysis

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Abstract

The aim of the present article is to consider the learning skills of children entering school and compare them to the achievements of the same children at the end of the first school year. From kindergarten the child proceeds to school, but the integration between the two institutions is often very weak. The popular epistemology at work here is an overview of knowledge. The results of children's learning at the end of the pre-school year were evaluated by their teachers in the spring of 2003 and then at the end of the first school year in the spring of 2004. After entering school, much of the previous experience often becomes useless. It is expedient to use the school situation as a new experience in different activities, in order to give learner a chance to learn about the application of new knowledge and to observe how the new knowledge allows him or her to plan various activities.

Key words: *learning skills; curriculum; child-centred approach; children's achievements.*

The development of a child takes place as the result of his or her inner activity, which is either simulated or inhibited by the child's environment of development (Ford & Lerner, 1992; Fumoto, 2003; Hanko, 2002; Solity, 1995).

Estonian Core Curriculum of Pre-school Education (1999) defines the results of the child's development prerequisites for going to school, but the ways of achieving these results and their conformity with the following stage of the child's life are a different question. Decision about who is ready for school and who is not may be quite complicated, because learning is an ongoing process continuing the development and improvement of the abilities needed for learning when the child is at school. Until now the content and structure of child's preparation for school, in order to cope successfully at the next level of education, has not been unequivocally defined in the Estonian education system.

The concept of school readiness and testing of it are far from unambiguous. For example, the studies of Shepard and Graue (1993) on children's school readiness have demonstrated that there exists conceptual confusion between children with special needs and children at risk because of their living conditions, that various tests fail to describe due to their unclear objectives. Parents, teachers, and administrators of education may

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understand the concept of 'readiness' differently and view it from various perspectives. In larger towns of Estonia there is a practice of organising primary school entrance tests for children and dividing them between classes according to the test results. Usually the level of difficulty of school entrance tests is far beyond the requirements of the curriculum of the senior groups of kindergarten, which makes it very hard to bridge the gap between pre-school education and primary education. In spite of the high assessment given by kindergarten teachers to children's achievements before they begin school (Talts, 2003), primary school teachers are not satisfied with the general learning skills of children (Niinemäe, 2004). The expectations of parents and school often compel kindergarten teachers to drill children's reading and arithmetic skills instead of providing them with a positive learning experience and shaping learning skills of a more general nature, which would help children to successfully cope at the following stage of education.

Theoretical background

A child's perspective always carries the interpretations of adults, or in other words, depends on how an adult interprets things conveyed by a child. A focal question for researchers and teachers is: how do we interpret a child, his or her learning and our participation in that process?

The core curriculum points out that knowledge cannot be directly transferred to children through teaching. Instead, children should themselves generate new ideas on the basis of their own previous knowledge and experience. The central concept in pedagogical theory stresses the importance of a child-centred approach in which children should be active learners and adults are simply guides. To support children's learning and to guide them toward becoming conscious about their own learning process is important in everyday practice. Learning should also be based on playful and imaginative activities including drama, fairy tales, stories, etc. By using these types of activities, the pre-school experience should also promote children's linguistic development (Ojala, 2004).

From kindergarten the child proceeds to school, but the bridge between the two institutions is often very narrow. In spite of having mastered the kindergarten's educational programme, some children still display discrepancies in learning skills and communication with other children. There are still too few points of interface between the activities of kindergarten and primary school teachers. The improvement of this situation requires a well-planned cooperation between kindergarten and primary school teachers. At the beginning of school, the child's hunger for learning should be fed by new stimuli, taking into account his or her earlier experiences and the level of development. Teacher is fundamentally not able to "transfer" knowledge. Knowledge is individually coded in the nervous system, the network of neurons. Teacher is not able or even should not directly interfere with the interconnections of the nervous system. His or her task is to organise a child's environment to make it easier to understand regularities, the orderly nature of phenomena. In the process of teaching, new knowledge of a new field is presented, and the existing knowledge is analysed in the context of the new one more clearly and simply.

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Educational objectives of pre-school training include teachers' understanding of child's learning as well as educational theories. The theoretical basis of the present article relies on the principles, where child and his or her characteristic features serve as the grounds for compiling the curriculum and planning activities (Hytönen, 2002). According to this approach, child as an individual and a member of collective body is the starting point for planning children's activities. Learning is viewed as an active process, which takes place in the process of interaction with the environment. For a small child, learning experience is of a primary importance. Pedagogical supervision of children's play is considered the basic method of teaching (Hytönen, 2002).

Learning is treated as an active process, where cooperation and learning from each other play an important role. Learning should be organised so that children can learn in everyday situations and teaching should take place along with play, because – while playing – children use their experience. John Dewey convincingly described this kind of child-centred education and learning in 1963. Despite Dewey's unification efforts (Katz, 2002), much of the twentieth century saw an increasingly polarised educational community that maintained the dualism between child and curriculum or what we may call the knower and the known. Classical education theory accepted the contents of the formal curriculum as knowledge and attempted to teach subjects to children. The formal curriculum, whether couched in a language of outcomes, expectations, or objectives, typically delineates the contents of our cultural store. And when this is our concern, competence is generally defined in terms of the possession of knowledge, be it declarative or procedural. Knowledge is considered to be certain and permanent and capable of being judged as right or wrong (Kuhn, 1999).

Teaching in a known-centred competence model appears as telling or showing. Learning becomes concerned with remembering (Katz, 2000). The fit between what is told (or shown) and what is remembered is gauged via the mechanism of assessment. This can be in the context of formal testing or through a more indirect avenue of classroom discourse. There is undoubtedly an anachronistic quality found in the epistemological segregation between subject and object or the knower and the known. Choosing between the child and the curriculum, as much of educational theory seems to have done, is not a viable solution to the paradox (Katz, 2002). The curriculum spells out a set of standards to which students and their teachers must be accountable. Pedagogical practices of all varieties tell something about the learner to the teacher.

Child-centred education approves of the educator's active participation in the learning process (Hytönen & Krokfors, 2002; Talts, 2003; Wood & Bennett, 2001), where it is possible to plan the activities and define the priorities in advance. In this process, teacher is not just a guide to the child. Researchers (Hobson, 2002; Howers, 2000; Hanko, 2002) have found that the driving force behind a developing learning environment is the teacher-child interaction. They emphasise that observation of children's development considerably influences the understanding of teachers of how children learn at pre-school age. Many problems are caused by the fact that after starting school much of the previous learning and experience get little

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attention. For example, a child who is skilled in reading has to sit and feel bored by familiar learning material, being unable to use his or her earlier knowledge and experience in this new situation.

Method

The children's learning achievements at the end of the pre-school year were evaluated by their teachers in the spring of 2003 and at the end of first school year in the spring of 2004. The rating was carried out applying a questionnaire based on curriculum objectives. The data about 198 children, 92 of whom were girls and 106 boys, were collected in different districts of Tallinn. Teachers were asked to evaluate children's individual achievements in nine target areas: learning skills (15 items); social skills (12 items); language and interaction (25 items); mathematics (27 items); ethics (8 items); science and the environment (8 items); health (8 items); physical and motor development (8 items); art and culture (20 items).

The nine areas were rated on a scale from one to five (1–2 = very low level; 3–4 = medium level; 5 = excellent level) for each item. The reliability for rating the children's learning was calculated by Alpha-coefficient. The results showed a very high reliability for the teachers' rating ($\alpha = .99$).

The present article deals more thoroughly with the first target area – *learning skills*, which fall into 15 constituent skills. These are the following: focusing on one's activity, focusing on the task, focusing on the new situation, following the instructions, trust in oneself as a learner, acting on one's own initiative, the activity of learning, using the information alone, using the information together with other children, interest in learning new things, setting new aims to one's activity, pursuing one's aims, satisfaction gained from completing activities, taking care of one's own things, taking care of common things. In addition, the best and worst acquired skills are viewed through nine objectives defined by the curriculum. Finally, the achievements of the children who received higher and lower assessments in the senior group of kindergarten were compared to their achievements at the end of the first school year.

Results

Learning skills in relation to the gender of children

According to developmental psychology, girls' mental and physical development at pre-school age and during the first years of school is faster than that of boys'. Teachers' assessment of children's achievements in various areas of the curriculum (Talts & Mustimets, 2004) demonstrated statistically significant differences in favour of girls in all spheres, with the exception of mathematics, where there were no significant differences. There were also significant differences in the indicators of school readiness of the younger and older age groups of children (ibid.). The table below gives an overview of gender differences in relation to *learning skills* (see Table 1).

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Table 1. Learning skills in relation to the gender of children

Learning skills	Boys N=106	Girls N=91	p
Focusing on one's activity	3.81	4.25	.003**
Focusing on the task	3.77	4.22	.003**
Focusing on the new situation	3.79	4.18	.006**
Following the instructions	3.95	4.29	.012*
Trust in oneself as a learner	3.58	3.85	.095
Acting on one's own initiative	3.85	4.13	.064
The activity of learning	3.66	4.05	.022*
Using the information alone	3.78	4.09	.041*
Using the information together with other children	3.90	4.12	.097
Interest in learning new things	3.89	4.23	.028*
Setting new aims to one's activity	3.66	3.91	.095
Pursuing one's aims	3.75	4.08	.019*
Satisfaction gained from completing activities	4.03	4.35	.017*
Taking care of one's own things	3.75	4.37	.000**
Taking care of common things	3.44	4.08	.000**

Note: Mean assessment indicates the sequence of the specific learning skill among the 15 skills assessed. All differences between groups are significant $p<0.05$. (*differences are strong: <0.05 and ** differences are very strong: <0.001)

Girls rated higher in focusing on their activity and also in focusing on the task. Taking care of one's own things and taking care of common things can be considered as essential learning skills, too. In this respect girls noticeably surpass boys. Girls pay much more attention to taking care of their own things, whereas common things matter considerably less to them.

Ranking the 15 learning skills listed, we can see that *trust in oneself as a learner* and *setting aims to one's activity* is problematic for both boys and girls.

Learning skills of children with special needs

According to the teachers' assessment, 34 children (17%) out of the sample studied were with special needs. The current study does not deal with defining special needs but relies on the assessment of the teachers of preparatory groups. The figure below gives a comparative overview of the children's learning skills.

In Figure 1 we can see that children with special needs rate lower in all learning skills than the rest of the sample. The differences in the skills of acting according to one's aims, acting on one's own initiative and being active are the most essential.

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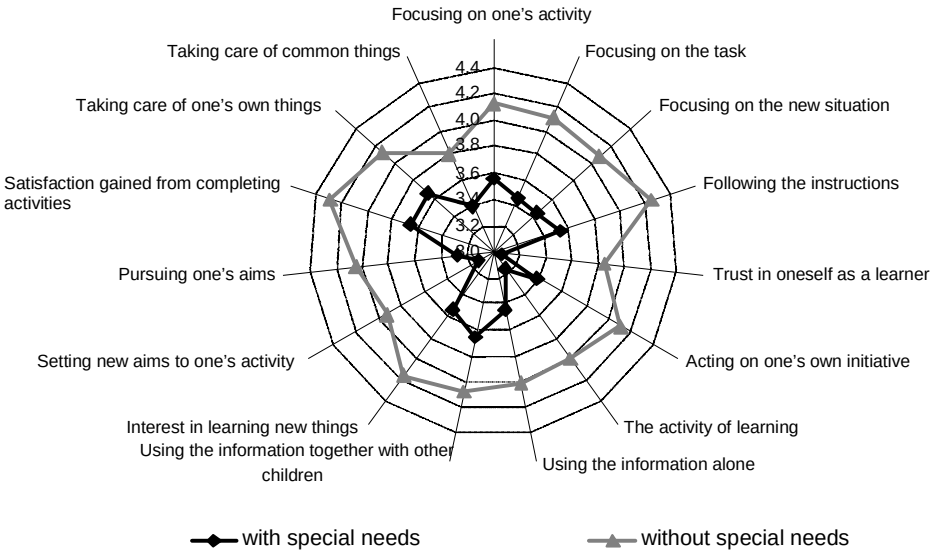

Figure 1. Learning skills of children with special needs and children without special needs

The best and worst skills acquired

Relying on nine target areas of the curriculum, which include 131 constituent skills, and ranking the 15 best acquired and 15 worst acquired skills, we obtained the results shown in the table below.

Table 2. The best and worst skills acquired

Rank	Best	Mean	Worst	Mean
1	2	3	4	5
1.	Dressing and undressing independently	4.73	The ability to wait for one's turn in the conversation	3.80
2.	Counting numbers from 1 to 10	4.69	Comparing a range of lengths and weights	3.79
3.	Coping with the basic hygienic procedures	4.66	Taking responsibility for one's activity	3.77
4.	Knowing numbers from 1 to 10	4.65	Understanding the meaning of one's activity in relation with others	3.77
5.	Knowing the concepts 'the largest, medium and the smallest'	4.59	Setting aims to one's activity	3.76
6.	Using scissors	4.59	Understanding the principles of sustainable development	3.74
7.	Holding a pencil in the right position	4.55	Creating different rhythms	3.73
8.	Knowing the concepts 'less, more and as much as'	4.53	Taking care of common things	3.72

Sequel to Table 2 see on p. 86.

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Sequel to Table 2.

1	2	3	4	5
9.	Doing physical exercises in a room	4.53	Accepting cultural variations	3.69
10.	Doing physical exercises outdoors	4.51	Trust in oneself as a learner	3.69
11.	Knowing the letters of the alphabet	4.50	Participating in solving conflicts	3.66
12.	Knowing the concepts 'similar and different'	4.50	Considering the feelings of other people	3.61
13.	Understanding the concepts expressing direction	4.49	An ability to put oneself in the other person's position	3.57
14.	Knowing the figures, numerals and respective quantities from 1 to 10	4.49	Understanding the effect of one's activity on the environment	3.56
15.	Finding pleasure in movement	4.48	The skill of rhyming words	3.54

The lists above show that the achievements of children at the beginning of school in mathematics, manual activities and physical development are better than in the areas concerning ethics and social skills. The shortcomings in ethics and social skills may deepen at the next level of education and endanger academic coping.

The present study, which deals with children's achievements after entering school and at the end of their first school year, reveals essential differences in the achievements of the same children in kindergarten and at school. The achievements of the children, who were assessed higher in kindergarten, at the end of their first school year have been reflected in Figure 2.

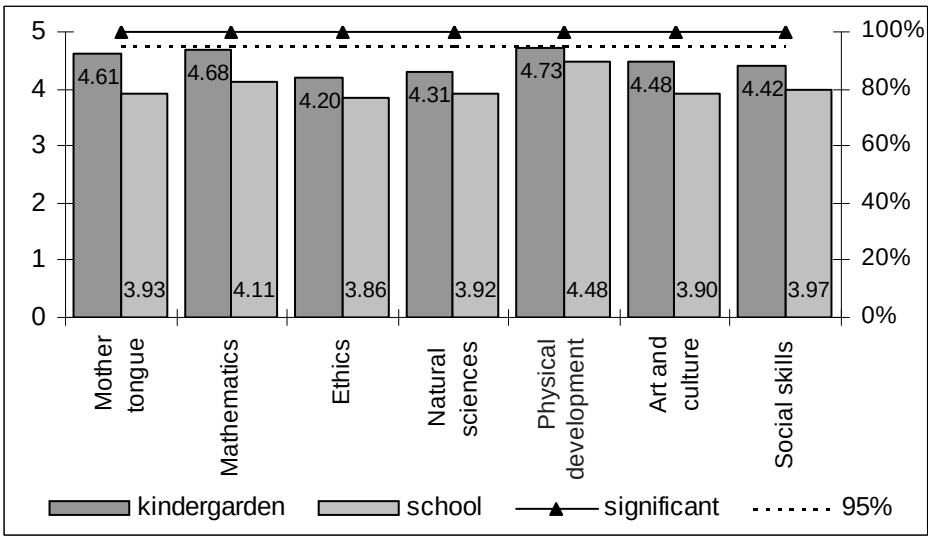

Figure 2. The achievements of the children, assessed higher in kindergarten, at the end of their first school year

It appears that the group of children that was *stronger* in the kindergarten is not so highly assessed by schoolteachers. Primary school teachers would have been much more critical while assessing children. The reason may also be that children belonging to the stronger group "rest on their laurels" at school without finding new stimulation that would take into account their earlier experience and level of development.

The achievements of the children belonging to the *weaker* group in the kindergarten may improve considerably (see Figure 3).

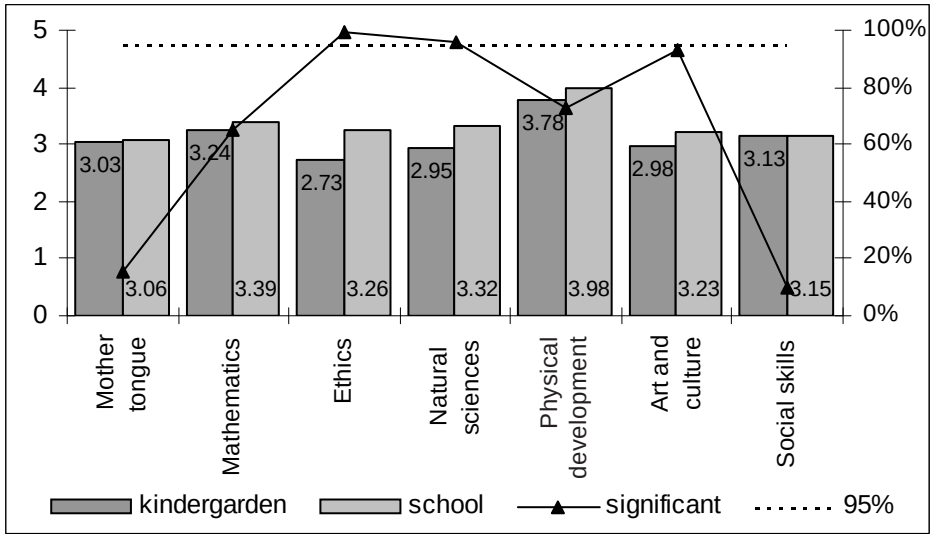

Figure 3. The achievements of the children, assessed lower in kindergarten, at the end of their first school year

It appears that the achievements of children who received lower assessments in kindergarten do not necessarily become worse at school, often their potential flourishes there.

Conclusion and discussion

Learning skills form the basis for successful coping at next levels of education. Although teachers' assessment of children's learning skills is generally high, many children have problems with trusting themselves as learners and acting according to the aims set. This result is considered provoking and refers to the fact that essential prerequisites of learning have not been shaped at pre-school age and the main focus lies on drilling something specific – alphabet, numbers, etc. One likely reason for that is the concern instilled in children about coping at school entrance tests, successful passing of which requires reading and writing skills. It is generally difficult for children to learn together and take care of common things.

Many problems are caused by the fact that after starting school much of the previous experience often becomes useless. For example, a child who is skilled in reading has to sit and feel bored by familiar learning material, being unable to use his or her earlier knowledge and experience in this new situation. It is expedient to use the school situation as a new experience in many varied activities, in order to give the learner a chance to learn about the forms of application of the new knowledge and to observe how new knowledge allows him or her to plan various activities.

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The gender variations found are important. The study shows that this type of differentiation between boys and girls' learning probably starts early and most likely before school.

The contemporary situation of Estonian pre-school pedagogy combines the characteristics of the recent totalitarian society and the attempt to achieve the level of the advanced societies at an accelerated pace. This results in the situation where general pedagogical objectives are not so clearly prioritised. In the assessments of the teachers, subject-centred approach prevails, which is not in keeping with the development of pre-school children. For example, teachers assess children's ethics and social achievement lower than subject skills.

Developed activity can only rely on developed experience. Deriving from that proposition, it is essential to keep analysing children's achievements and comparing them to the objectives of the curriculum. By becoming aware of strong and weak sides of the learner, teacher is able to take into account children's individual speed of development in the most important areas related to learning.

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Parental Involvement in the Framework of Holistic Education

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Abstract

Holistic education aims to bring forth love for learning, a goal that is not easily achieved by the academic curriculum. The great changes of the contemporary world have drastically transformed the meaning of education and the art of teaching, thus requiring changes in the 'traditional' curriculum. The aim of the present research was to find out the parents' opinion on effective school that would provide their children with the competence needed for leading a successful life and to assess it from the holistic point of view. The results revealed that effective schools in the contemporary world are those that have altered their curriculum according to the demands of society where success can be achieved only through understanding the world as a whole. The study is based on parents' evaluation of schools bringing out the values of school, the aspects of quality of the learning environment and teachers' proficiency. As fostering collaboration is one of the principles of holistic education, the collaboration, communication, and relationships between school and parents are also discussed. The research shows that parents value the schools where the 'traditional' curriculum is interweaved with the ideas of holistic education.

Key words: *parental involvement; holistic education; effective schools; ineffective schools.*

The continuing crisis in public education, with high rates of grade failure and low educational achievement, reflects high levels of student and parent disengagement in education and the urgent need for change (Fantuzzo, 1999). The great changes that have taken place in the world today have transformed the meaning of education and the art of teaching. Our economy is leading us towards high-tech society and schools have to prepare students for the "world of tomorrow" (Cassel, 2003). The critical point for change is that "knowledge" is becoming our true capital base and the primary wealth producing resource. Education is everything in preparing for this post-business society. Hence the old 'traditional' educational model that condenses the world into instructional packages (Miller, 2000) is to a great extent not efficient any more. The education of the young used to be like moulding them into future workers or citizens (Miller, 2000), but nowadays schools have to seek alternative ways for survival.

That in turn sets new standards for teacher training because teachers are having a key-role in building a new learning society. The role of teacher

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training has been to prepare individuals to stand in front of children in the classroom and impart acceptable knowledge. In recent years, the limitations of this approach have led to the development of new kinds of teacher education which significantly change the role of teachers from those of the mechanics confined to the classroom walls to people having a holistic view of the learning process (Miller & Ramos, 1999). A holistic approach that regards teaching and learning from an integrated perspective has been proved to be more efficient than any other approach adopting only one innovation at a time (e.g., active, collaborative, technology-enhanced or student-centred approaches), as adopting one innovation, without accounting for the forces that work against it, can neutralize or negate desired outcomes (Poindexter, 2003). The reason of that trend lays in capturing a wider picture instead of narrow purposes.

The holistic nature of education process

The principles of holistic education provide that refreshing shift our educational reform urgently needs. School education has to be a holistic process, in which students both as individuals and in groups can receive maximum opportunity to learn and develop becoming versatile persons. But, unfortunately, the concept of holistic approach and the ways it can maximize learning opportunities often remains unclear.

A holistic way of thinking seeks to encompass and integrate multiple layers of meaning (Miller, 2000) The concept of *layers' system* could be used to understand the holistic nature of education process in school as well (Cheng, 1997) and provide a more comprehensive unit for managing school activities in a holistic way.

The school process can be separated into actor layers such as *the administrator and teacher layer* and *the student layer* (Cheng, 1997). Thinking in terms of layers (rather than cells) provides a more comprehensive unit to think about the holistic nature of the school process. In order to maximize the effectivity of teaching process, the teacher layer should influence the student layer as a whole. In other words, teachers at different levels should influence their students through all their behavioural, affective, and cognitive performance. Besides, they influence not only individual students but also students in groups and students as a group in a school-level (Cheng, 1997). This is a holistic teaching.

In order to facilitate school education and maximize its effectiveness, parents should be encouraged to participate in this holistic process as well. Parental involvement has been identified as one of the major forces of new educational strategies by many researchers (Fantuzzo, 1999). When all these parties are put together, the layer system takes the form as shown in Figure 1.

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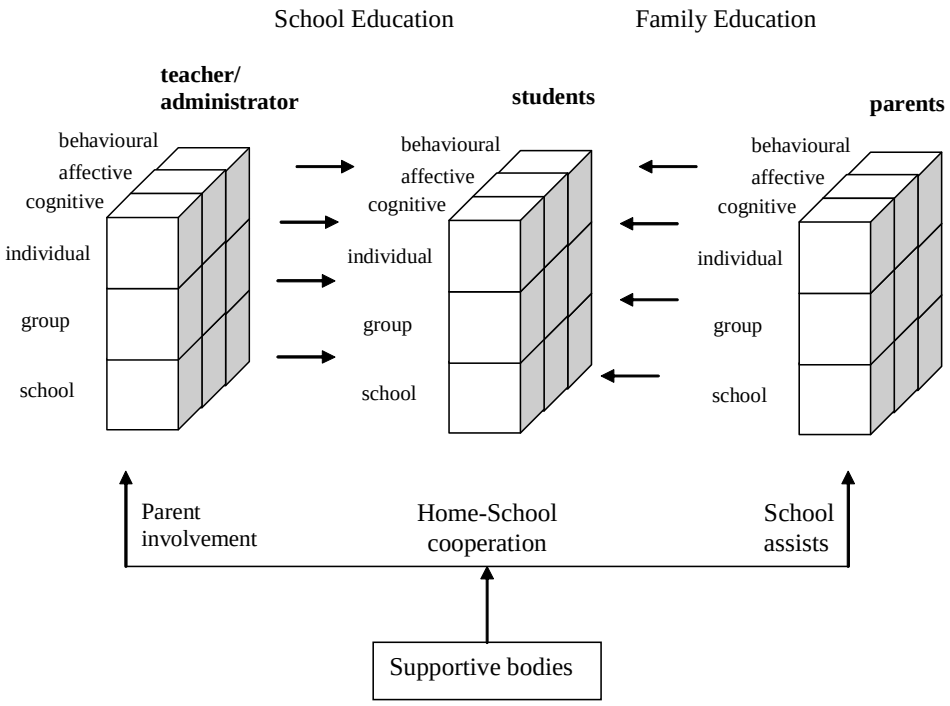

Figure 1. The home-school cooperation – the layers' system (adapted from Cheng, 1997)

Parental involvement in school education has multiple dimensions, which often have different impacts on school performance (Eddy, 2004; Shepard & Carlson, 2003):

1) overt parental involvement: involving visiting meetings and classes and talking to teachers;
2) participation in parents organization;
3) parent-school cooperation: participation in the daily operations of the school and participation in school decision-making;
4) parent-child dimension: conversations about school, education and/or studying, etc.

Total home-school collaboration should be one of major tendencies in educational reforms. The layer concept can be used as the building block for reengineering schools to provide holistic education and maximize opportunity for effective teaching and learning (Cheng, 1997).

Effective and ineffective schools and the problems of students' educational attainment

Effective schools have been identified in terms of characteristics associated with high student achievement and, conversely, schools lacking these characteristics are conceived as ineffective schools (Griffith, 2004). The major indicators of the schools in Estonia are assessed by are the results of State Examinations providing for the comparison of the average achievement of students in all basic subjects. Enrolment and drop-out rates are other important characteristics, both of which are strongly related to achievement indices: the higher is the students' attainment the lower is the drop-out rate in that school (Griffith, 2004; Smith et al., 2004).

Dropping out of primary school has become one of the major problems in Estonian educational development. These students leave schools before they have obtained the required educational standard – primary education. The national statistics of Estonia reveal that the number of people without primary education has increased since 1990 and especially during the last few years (Haridus..., 2001; Koolikohustuse..., 2002; Põhikoolist..., 2003).

Holistic education aims to incite in young people a passionate love of learning that is not directly measured by the grades of national exams. From the perspective of holistic education, every child is more than a future employee; every person's intelligence and abilities are far more complex than his or her grades in standardized tests (Miller, 2000). So it may seem that statistics of school effectiveness and holistic education are the terms that cannot be used together. But in reality the students who have been educated in a holistic environment are more likely to be successful in their academic life, as their 'natural' love of learning helps them to obtain more in comparison with the students who have learned by passive memorization of plain "facts" (Miller, 2000).

Although the number of public schools that are entirely committed to holistic principles is not very high in Estonia, there are still some schools, which are trying to put the ideas of holistic education into practice. The education process of the schools, which have succeeded to do it, considers all the parties related to child's development: school, teachers, parents and students. Home-school collaboration is one of the major fields disregarded by many schools. It is an unused social resource and, when being ignored, it leaves a significant blank in the holistic approach to a child's education.

Majority of parents want their children to be successful at school, but many parents do not know how to assist their children in ways that improve school performance (Eddy, 2004; Hill & Craft, 2003). Parental involvement in education is associated with improvements in school behaviour, social competence, and school performance. There are many researchers supporting the claim that parent involvement leads to improved educational attainment (Garcia-Bacete, 2003; Hill & Craft, 2003; McNeal, 1999; Peraita & Pastor, 2000). Their findings have formed the basis for different educational reforms where parental involvement is one of the key elements of the programs (Cassel, 2003; McNeal, 1999).

Research methods

The main emphasis of the research was on the differences of parental involvement in effective and ineffective schools to bring out the parent-related aspects in well-organized environments. School climate is a complex phenomenon, which is influenced by different factors formed in the frame of a tight network. All of the components of that network affect each other thus making it thoroughly complicated to extract any of them as a single factor. However, some comparative lines can be pointed out to produce a picture of parental involvement in schools that provide the best possible learning environment, the environment that has been improved to be a successful one through many years.

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The aim of the research was to compare parental involvement in effective and ineffective schools; sampling was conducted to obtain statistically comparable samples of the effective schools (having the highest indices of students' achievement according to the results of annual State Examinations) and the ineffective schools (showing the lowest indices of achievement). The sample was composed of 40 schools (20 most effective and 20 most ineffective ones). The questionnaires were sent to parents whose children studied at these schools and the final sample for examining parent involvement was composed of 1,554 cases.

The questionnaire consisted of 50 different items assessing different aspects of relationships, cooperation, and communication between school and parents; the parents' evaluation of teachers and the social climate at school. Parents responded to the questions using number scales ranging from 1 (*never/not at all/very bad, etc.*) to 6 (*always/very much/very good, etc.*). Average scores were used in calculations. The analysis was based on the quantitative research methods (f- and t-tests were used to compare means and dispersion).

Results

Relationships between parents and school

The main aspects of parent-school relationships studied in the research were trust, parents' opinion about the parent-school relationships, satisfaction with the amount of time and attention provided by teachers/school for communicating with parents. Most of the parents can trust their child's school but the comparison of the means and variations of two groups – effective and ineffective schools, revealed a statistically significant difference ($p<.001$): the parents of effective schools think more positively of their child's school but at the same time their opinions vary more than those of the ineffective schools' parents. Parents' opinion about the nature of the relationships was quite similar in both groups of schools, although 30% of parents of ineffective schools (as compared to 15% of effective schools' parents) said they would change the school if they had a chance.

Cooperation between parents and school

Most of the parents (51%) were satisfied with the frequency of cooperation. Different forms of cooperation were studied in the research and some differences were observed between effective and ineffective schools. The results showed that in effective schools more parents' meetings and discussions about their child's improvement were held together with the child. Besides, the parents of effective schools were more willing to participate in the meetings where the child could be present at the discussion about his/her achievement. The parents of ineffective schools preferred traditional forms of parental involvement like traditional parents' meetings (with parents and class teacher only) and the open-door days (the days when parents can visit classes).

Nowadays more and more parents begin to understand the importance of parental involvement in school and they have become very active in reforming the school system: 80% of parents would like to participate in

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discussions about school development. But not all schools are eager to accept it. More than a half of parents (Figure 2) were not satisfied with the school's policy on involving parents in school-reforming process. In effective schools, parents are given chances to express their opinion about different plans of the school and therefore these parents find the policy of school satisfying.

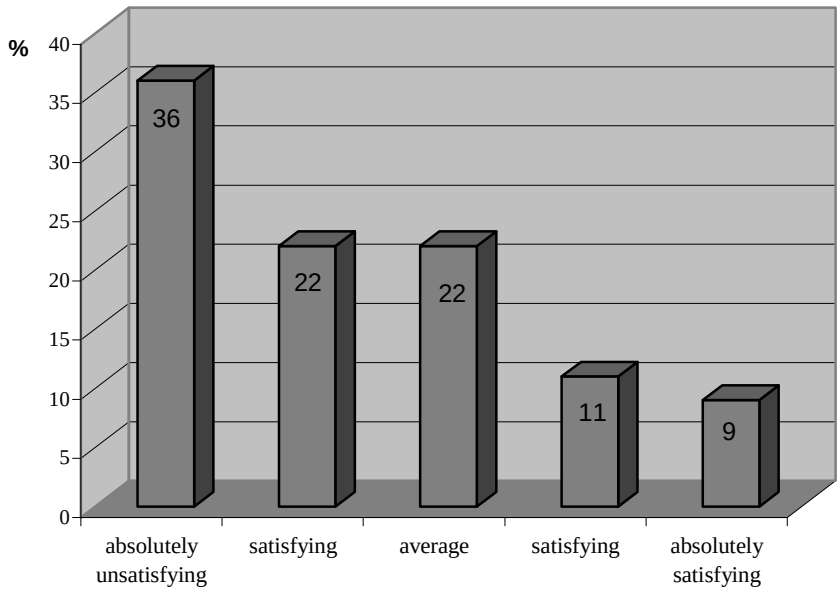

Figure 2. Parents' opinion of the school's policy on involving parents in school-reforming process

Communication between school and parents

Communication between teachers and parents is one of the key-elements of parental involvement associating all three aspects of the concept of social capital. The main topics teachers discuss with parents are (ranked in the order of significance according to parents' opinion):

1. Child's grades;
2. The curriculum of school;
3. The out-of-class activities;
4. Friendship;
5. Bullying;
6. School catering and health problems;
7. Security of children;
8. Morality and behaviour of children;
9. Transportation;
10. Child's academic achievement and future prospects.

The most remarkable difference between effective and ineffective schools was in the means and dispersion of conversations about the curriculum. Parents of effective schools had discussions about school curriculum and the educational purposes of school more often. In ineffective schools, teachers talk to parents mostly about child's grades and behaviour. In most cases, parents do not like to come to school and so they try to do it very rarely and only in cases when problems arise. If possible, they try to stay out of their child's life at school.

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There are several reasons why parents do not want to be involved with school. The following rank shows the first five reasons that had the highest indices of incidence:

1. That may cause more trouble to their child;
2. Their child does not need any help – he/she is independent enough;
3. Parents are too tired – too many problems at work and at home;
4. Parents do not have time for that;
5. The cooperation with parents is very badly organized.

The results reveal that parents' biggest fear is the threat that other students or even teachers would change their opinion of and behaviour towards the child, and eventually their good intentions may cause damage instead of being beneficial. A lot of parents also think that their children do not need their help any more; that they can manage on their own. But it may also be parents' excuse for not paying enough attention to their child. The truth of this supposition is testified by the reasons discussed next. Our life-style has become very stressful and it is more and more difficult to find time for anything else than just earning a living. Very few parents (and most of them from ineffective schools) also mention bad personal relationships with teacher(s) and teachers' use of a scientific and very complex language as hinders of communication.

The parents' evaluation of school

Three aspects were studied:

- Parents' evaluation of values of school;
- Parents' evaluation of quality of learning environment;
- Parents' evaluation of teachers' proficiency.

There are a lot of characteristics that differ greatly between effective and ineffective schools. Table 1 shows the differences that are statistically significant ($p<.001$ in all cases).

Table 1. The significant differences in parents' evaluation of school

	Effective Schools	Ineffective Schools
	1	2
Values	Security of children is highly valued	Not much attention is paid to security of children
	Striving for better achievement, however the main emphasis is not solely on knowledge but on wider understanding of the world	It is mostly plain facts instead of understanding that is taught, and schools cannot lead children to better academic achievement
	Children's endeavours to self-improvement are supported	Not much attention is paid to child's own endeavours
	Curious mind is valued and supported	Curious children are considered to be a burden
	Strong traditions	No certain traditions

Sequel to Table 1 see on p. 97.

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Sequel to Table 1.

	1	2
	School culture is directed at the development of a dignified citizen	School does not set higher goals
Learning environment	Classroom discipline is maintained	Classroom discipline is not maintained
	School has clear aims and directions	The courses of action of school are chaotic
	School has a good reputation	School does not have a significantly good reputation
	The 'we-feeling' or belonging is very strong	The belonging is weak or lacking at all
	The rooms in school are mostly used in students' interest	The rooms are not used in the consideration of students' needs
	The learning conditions meet the needs of modern society	The learning conditions are not satisfying
Teachers' proficiency	Teachers have high competence in their subject	Not all teachers are competent in their subject
	Teachers can maintain classroom discipline	Classroom discipline is not always maintained
	Teachers can excite students' interest in their subject	Teachers do not excite students' interest in their subject
	Teachers prepare the students for exams and level tests	Teachers cannot prepare the students for exams and level test so well

The parents of effective schools bring out many aspects: the children in effective schools feel that they do belong there, they can feel secure and their natural curious mind is not crushed down. Effective schools pay much attention to the improvement of learning conditions: making repairs and supplying the classrooms and teachers with the necessary equipment and materials. These schools value children's achievement and support their endeavours to self-improvement. Ineffective schools in general do not pay so much attention to the child. Neither have they formulated their goals clearly and therefore their work is chaotic. Consequently, these shortcomings are manifest in the general climate of the school influencing negatively children's attitude and motivation.

Discussion

Our society today is moving on a new way of life that requires new meaning of education, and only those schools that have successfully put the necessary changes into practice can provide students with the level of education that would guarantee them success in their future life. According to the concept of holistic education, the broader the network the child is living in, the stronger its influence on the child's development. Therefore co-

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operation between school and family creates more effective learning environment for child. Parental involvement is closely related to the parents' opinion about the school. In effective schools where the child can attend parents' meetings and parent-teacher discussions, the parents are more interested to participate in the school-life. Varying the forms of parental involvement helps to excite parents' interest in cooperation with school. Besides, parents also expect schools to let them join in discussions of the aims and plans of the school. When the parental involvement increases, parents' sense of responsibility grows and it helps to increase the sense of belonging. When parents become a part of school society, they may freely discuss deeper problems with teachers. Currently, most of parent-teacher conversations are about child's academic achievement, grades, and misbehaviours. Parents avoid deeper conversations, which unfortunately leads to the situation where much of the potential social capital a good parent-teacher relationship could provide is left unused.

Living in the conditions of market economy forces schools to fight for their survival and therefore it is very important to know the aspects of school environment, which characterize effective schools. The key-words of effective schools according to the parents' opinion are child-centeredness, discipline, and striving for higher goals through clearly formulated aims and directions of development. They have a strong sense of belonging and the learning environment meets the needs of the modern society.

In conclusion, it may be said that effective schools in the contemporary world are those that have changed their curriculum according to the demands of society where success can be achieved only through understanding the world as a whole. While few public schools are entirely committed to holistic principles, many teachers try to put these ideas into practice. Accordingly, the schools that have succeeded in this field are mostly considered as effective. Collaboration is one of the principles of holistic education and the schools that have built up a strong home-school collaboration system have found a strong groundsel for their educational process. There are some other aspects of holistic education and of effective school that are coincident: child-centeredness, striving for better achievement with the main stress not solely on knowledge but on a wider understanding of the world, supporting the curious mind, etc. So it may be said that parents value the schools where the 'traditional' curriculum is interweaved with the ideas of holistic education.

What helps to build the schools following the paths of holistic education? One of the most important factors is teacher training. It has always been difficult to introduce changes when the workers are cleaved to the old system. Therefore it is essential to start from preparing the teachers who value home-school cooperation and have necessary skills for working with parents. Our life-style has become very stressful and for parents it is increasingly difficult to find the time for activities other than just earning a living, which means that it is the teachers' responsibility to organize the work of parental involvement in the most effective way. That is why in teacher training programs more attention should be paid to introducing the principles of effective parental involvement.

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Holistic Approach to the Development of Pre-School Educational Environment in Latvia

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Abstract

Holistic approach is essential in a situation when the educational process is aimed at stimulating the development of a personality capable of self-determination, possessing creative ability to acquire new information and put the natural potential into life.

The purpose of the article is to analyze the role and importance of the holistic approach in the development of pre-school educational environment in Latvia.

It is intended to clarify the term 'educational environment' from the position of various theories of pedagogy and analyze the role of the holistic approach in the formation of the educational environment.

The idea is offered for the discussion that, from the holistic point of view, the pre-school educational environment promotes the cognitive development of the child if it ensures the possibility to choose, stimulates imagination and action, and corresponds to child's interests and needs.

Key words: *holistic approach; educational environment; development; pre-school; cognitive activities; personality.*

The situation in Latvia at the beginning of the 21st century is characterized by the development of interdisciplinary sciences, incorporation of environmental aspects in humanitarian research, and the gradual integration of the holistic paradigm in researchers' minds. So far human society, armed with scientific knowledge, has been moving along the road of technological optimism. However, the roots of the problems encountered by ecosystems and hindering the quality of human development are located not only in the surrounding world but also in human psyche and consciousness, in the motives of behaviour, and the factors determining the psychological comfort of a personality.

The ideas mentioned above emphasize the need to improve the quality of the pre-school educational environment as one of the factors facilitating the child's development.

Despite the diversity of the existing opinions and theories, the scientific thought serves one common goal – to find answers fostering human freedom, creative activities, self-actualization and realization of these values in educational process, thus stimulating versatile development of personality.

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This justifies more comprehensive studies of the issues related to the pre-school educational environment, as the pre-school age is a particularly sensitive period for the development of human personality.

Modern pedagogical theories on education of pre-school children raise an essential question about the relationships between a self-developing person and a constantly changing environment (Gudjons, 1998). There is also a tendency to emphasize the real life of children and their development in their everyday living space (Baacke, 1991).

Apart from that, in the modern descriptions of childhood, the understanding of the acquisition of culture has changed considerably. For example, the role of the secondary experience is increasing; consumption-oriented behaviour models have become stronger. Learning theories emphasize independent work as the substantial basis of cognitive activity (Fölling-Albers, 1989).

The authors find it necessary to use the main methodological principles of the holistic approach to education in order to answer the questions outlined above.

The holistic approach becomes increasingly important in the situation when there is a growing need for the educational process to develop a personality capable of self-determination, self-revelation, having creative skills to acquire new information, and the ability to put one's natural potential to work.

It should be pointed out that this corresponds to the task of creating the educational environment that would promote child's ability to judge and choose, to understand the world not as a finished structure, but as something that has to be created, as it was stated in the report *Education for the 21st century* (1998) by the UNESCO International Committee.

The purpose of the present article is to analyse the role of the holistic approach in the development of the pre-school educational environment in Latvia. The article regards the research of Latvian pedagogic literature from the 1930s to the present day and the study of the latest foreign pedagogic literature on methodology of humanistic pedagogy and holistic approach.

According to the *Latvian Law of General Education* (1999, article 20, Ch 5), the curricula of pre-school education refer to the children up to the age of 7.

The main aspects of the concept 'educational environment'

As the child's personality develops in the educational process, educational environment plays a significant role. The studies of various authors (Dauge, 1930; Десенкова, 2003; Dēķēns, 1921; Hansena, Kaufmane & Saifers, 1998; Lieģeniece, 1996, 1999; Meinhards, 1910; Pētersons, 1931; Roth & Szamoskozi, 2002; Špona, 2004; Štāls, 1927, etc.) lead to the conclusion that there is no single definition to characterize this pedagogical phenomenon. When characterizing child's development as a whole, D. Lieģeniece (1999) uses the terms 'the developing environment', 'the environment of things', and 'the structured environment'. On the other hand, E. Maslo (2003) characterizes the educational environment as the input that a child receives during his/her life.

The holistic approach as the methodological basis of educational environment is also understood as "a teacher's interaction with a child, where teacher provides help and support for the child's cognition of the world and oneself, helps to organize child's activity in accordance with the principles of action psychology, promotes the development of child's motivational sphere, and helps a child to pass from his/her 'actual zone of development' to the 'zone of proximal development'" (Lieģeniece, 1996: 159–160).

Historical insight in the understanding of the concept

Exploration of the issues mentioned above asks for a certain historical digression.

In the 18th century, Rousseau raised the issue of educational environment. According to him, the primary role of an educator is to create the environment and pedagogical situations, to organize original meetings, but the understanding of the world should be left to the child. The educator participates in the educational process indirectly, which Rousseau understood as 'prevention from doing something'. However, a skilful educator has to organize the environment corresponding to the natural development of a child, as the teacher is the substitute of the natural and 'universal will'. Rousseau also considered the things (and people) facilitating experience and learning as the elements of the learning environment. He pointed out that a child has to develop freely according to his/her abilities. A child is the subject of education; education adapts to the nature of a child, his/her organic and progressive development.

M. Montessori, who is considered to be a pioneer of holistic approach, pointed out that a 'prepared environment' is the third most important factor in the upbringing of children after independence and concentration. According to her, the most important tasks of a teacher are to be beside children at any time, to support them in their activities, and constantly develop children's moral, emotional, physical, psychological, and spiritual dimensions (Montessori, 1995). On the other hand, Dewey considered that the way the school environment is organized is the indicator of the desirable intellectual and moral growth of a child (Dewey, 1966).

Interaction of environmental elements

The relationships between the teaching of an adult and the learning of a child are arranged between two poles: child's nature and his/her actual needs on the one hand, and an outer stimulus enriching child's learning on the other hand.

Several ideas attracted our attention when studying this issue. Feuerstein, Klein, and Tannenbaum (1991), who worked with children and teenagers from the entire world in the refugee camps, concluded that academic 'delay' of these children results from insufficient cultural input because of war, poverty, and lack of parents. He thought that cognitive development is the result of maturity and experience, which is formed as a result of human interaction. J. Leeber, who used R. Feuerstein's methodology working with children with special needs, came to a conclusion that the environment is a mediator or the main channel through which culture

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is transmitted from one generation to another, and the environment provides stimulating learning experience (Leeber, 2002). Roth and Szamoskozi (2002), on the other hand, has described the influence of 'impoverished environment' on the development of a child and has concluded that it hinders children's development and their behaviour, and makes it difficult for them to interact with the surrounding world.

Desenkova (2003) and Hansena with associates (1998) uses the terms 'the surrounding environment', 'the environment of things', 'the developing environment', and 'the organization of the environment in learning centres' within the project "Step by Step" (child-centered program for children from birth to 10 years realized by Open Society Institute in 30 countries of the world). In their works, we can find detailed descriptions of material objects and their preferable position in the room. They point out that children's safety, the availability of materials and resources, possibility to cooperate and find activities corresponding to the interests and needs of each child should be taken into account when organizing the environment.

Educational environment has been dealt with in the research of environmental psychologists P.A. Bell, T.C. Green, J.D. Fisher and A. Baum (2002). When describing and evaluating the educational environment, they point out the connection between the environment and human behaviour and emphasize the role of the environment in promoting the process of cognition.

The historical development of the understanding of educational environment in Latvia: Holistic aspects

According to the authors' experience, there is interest in the implementation of the holistic approach in the formation of pre-school educational environment in Latvia as well. The conclusions drawn from the analysis of holistic approach in the development of pre-school learning environment will be presented further.

The term 'educational environment' was not used in Latvia at the beginning of the previous century; however, attention was paid to some issues related to the environment. For instance, K. Dēķēns (1921), G. Meinhards (1910), and M. Štāls (1927) drew the preferable arrangement of the classroom and described the necessary space, material objects and their sizes. V. Dermanis (1902) criticized lack of teaching materials and poor health conditions in Riga schools. Ed. Pētersons (1931) demanded the educational environment that could be transformed into laboratories and libraries. It was supposed to have a variety of teaching aids and books for every student (Meinhards, 1910). According to O. Svenne (1930), external guidance is necessary to continue the development started in the child by itself, and it is the teacher's task to prepare the tools helping to acquire necessary skills. K. Dēķēns (1921) pointed out the role of teacher's personal qualities, for instance, optimism and wit, as joy and laughter in the classroom help to keep off tiredness and distraction. J. Students (1933) stated that person and the environment are correlative concepts, and the relatively monotonous family environment becomes richer when a child goes to school and reveals its whole diversity starting his/her independent life. Therefore, the task of upbringing is to raise and develop a personality

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strong enough to influence the social environment more than the environment affects him/her. These ideas of Latvian educators strike a chord with the ideas of modern scholars as well.

The ideas of many Latvian educators in the 1920-40s sound surprisingly modern today. A. Dauge (1930) wrote that a person in its entirety should be taken into account in every educational activity, bearing in mind the necessity of raising a 'perfect human being' capable of looking for and finding solutions independently. It will be possible to carry out this complicated task if each pupil's inborn qualities, aspirations, and gifts are considered in upbringing and learning. These ideas are topical today as well and clearly demonstrate the role of the holistic approach in the formation of the educational environment.

Differences appear when we start considering the implementation of the ideas discussed above. Trying to implement the idea of 'a person in its entirety' or holism, it appears that it comprises understanding of child's development in all aspects, child's temperament, the peculiarities of his/her learning, thinking style, perception, as well as special talents and skills. The encouragement of 'self-performance', construction of opportunities to investigate and experiment, skills to provide knowledge corresponding to child's perception, ability to create a healthy and optimistic atmosphere, understanding of the environment and materials necessary for children, wish to raise children's self-confidence and support them in their activities are necessary features of teacher's work. On the other hand, the concept 'individualization' comprises all the above-mentioned qualities and the observation of children's activities, in order to adapt flexibly to the needs of each child. It also includes cooperation with parents.

In the last decade, along with the idea of 'educational environment' as the facilitator of child's activity, attention is focused on the concept of 'structure-formation' (Baacke, 1991). This model of educational environment comprises the structure of time, interpersonal communication, physical and spatial environment, as well as the factors determining and organizing behaviour. Within the context of the holistic approach, this model is oriented to the interaction between personality and environment. This theory considers child as a dynamic, growing unity picking up and transforming the elements of the surrounding world in the course of his/her development. Being part of the environment is particularly important for the development of the child.

Besides, the child-centered approach is becoming increasingly important in the pedagogical understanding of the educational environment.

Proceeding from the idea that child's upbringing and learning takes place in pre-school in various activities, both organized by teachers or children and spontaneous ones, D. Lieģeniece characterizes the educational environment as a place where child develops his/her experience, values, and skills and learns to form an attitude to oneself and the world as well as to acquire skills and knowledge. However, it depends on the opportunities provided for children to become subjects of their activities. The educational environment is the place of socialization where child develops relationships with adults and other children. The educational environment is a category of space (kindergarten, home, neighborhood) and time (Lieģeniece, 1996).

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The educational environment as a pedagogical phenomenon is characterized by the following structural elements:

1) child as the subject of activity taking into account child's nature, his/her entire personality;
2) the environment of things as a spatial category characterizing the learning environment (Lieģeniece, 1999).

A. Špona gives detailed characteristics of the environment, upbringing and personality potential: upbringing, heredity, and the environment (natural and social, micro-, mezzo-, and macro-) are the principal factors determining person's development. Each age group forms its specific relationships with the micro-environment – family, classmates, study group, work colleagues; mezzo-environment – school, work place, and local neighborhood; and macro-environment – the society as a whole (Špona, 2004).

It is important that in interaction between the educational process and the social environment each person would develop his/her own perception of social facts or phenomena, which results in different attitudes. Thus, the interaction between the development and the environment will always lead to the development of human skills as the ability to do something and the perfection of experience. Value-orientation, determination, and emotional stability are the most important characteristics of this interaction.

In the last 20 years in Latvia, humanistic pedagogy has become more noticeable among other pedagogical theories. Its central idea brings out child as an autonomous identity. According to this, the pedagogical process has to be organized in such a way as to create favorable environmental conditions for child and to support his/her self-realization. When organizing teaching and learning as a voluntary, purposeful, independent, and creative activity of learners, it is acknowledged that readiness for life is formed in the pedagogical environment securing learners' self-realization, satisfaction of their needs, as well as the experience of setting and achieving goals (Stabiņš, 1998).

Conclusions

In the present-day situation prevailing in culture and social life, treating of the educational environment from the holistic point of view becomes increasingly important.

According to the majority of the research representing the holistic approach, the educational environment can be characterized as a complicated, many-sided pedagogical phenomenon promoting versatile development of child's cognitive activity, providing a choice for child, stimulating imagination and activity, and corresponding to child's interests and needs. The educational environment is the environment that respects children's needs and supports children in their endeavors to harmonize their inner 'self' with the surrounding world.

The holistic approach is important in the situation when there is a growing demand for the pre-school educational process to stimulate the development of a personality capable of self-determination, possessing creative ability to acquire new information, self-revelation, and the ability to

put one's natural potential into life. Holistic approach to the educational environment is based on the understanding of the relations between various elements of the educational environment: various kinds of interaction between teacher and child, the relations between child and the environment, possibilities for the development of each child's unique individuality.

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