

***Sustainable Development. Culture. Education.***

Research and Implementation of Education for Sustainable  
Development

ABSTRACT BOOK

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## CONTENTS

### KEYNOTE SPEAKERS (page17)

- *Ilga Salite*, Daugavpils University, Latvia  
***Sustainable Education from the Perspective of Democracy and Action Research***
- *Peter Schreiner*, Comenius-Institut, Germany  
***Intercultural Dialogue and Europeanization of Education - Research Initiatives Supporting Education for Sustainable Development***
- *Earth Charter Secretariat* ( presented by *Marina Bakhnova-Cary*), Earth Charter Center for Education for Sustainable Development, Costa Rica  
***Earth Charter: A Values-driven Approach to Education for Sustainable Development***

### SECTION 1: PHENOMENOLOGY OF EDUCATION FOR SUSTAINABLE DEVELOPMENT (page 20)

#### Paper presentations

- *Agnieszka Berlińska, Małgorzata Czaplą, Adam Mickiewicz University, Poland*  
***Sustainable Development – Understanding and Introducing the Notion in Polish Educational Actuality***
- *Tatjana Bulajeva, Lilija Duobliene, Vilnius University, Lithuania*  
***Challenges of Contemporary Lithuanian School Curriculum: Real Sustainability or Literal Legitimacy?***
- *Clara Mandolini, Università degli studi di Macerata, Italy*  
***Cosmopolitanism, Sustainable Development and Education***
- *Randall Ulveland, Western Oregon University, College of Education, USA*  
***Eco-phenomenology: The Language of Dwelling***

#### Workshop

- *Roel Stemmer, NGO Enviro-Net, The Netherlands*  
***Conditions for Sustainable Education***

### SECTION 2: RESEARCH FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT (page 25)

#### Paper presentations

- *Dzintra Atstāja, Ivars Brīvers, BA School of Business and Finance, Latvia*  
***Encouragement of Environment Friendly Branches in Latvian National Economy from the Sustainable Development Perspective***
- *Ilze Kalniņa, Latvia University of Agriculture, Latvia*  
***Problem-Based Learning for the Development of Pupils' Competitiveness***
- *Tiiu Kuurme, Anu Carlsson, Tallinn University, Estonia*  
***Non scholae, sed vitae discimus. The Meaning of School Learning in the Minds of Students***
- *Kadi Lukanenok, Tallinn University, Estonia*  
***Connections between Rapid Naming Speed and Reading Speed and Accuracy for 6 – 8 Year Old Children in Estonian***
- *Peter Oluwayemi Omidiora, Francis Olakunle, Joseph Uja, Department of Ecology and Environment, Nigeria*  
***Environmental Protection and Renewable Energy Education: Tools for Economic Development***
- *Monica Sakk, Marika Veisson, Tallinn University, Estonia*  
***Quality of Family Relations in Ensuring Sustainable Education***
- *Constantina Skanavis, Maria Sakellari, University of Aegean, Greece*  
***Education for Sustainable Development and Hazard Preparedness: A Key to Promote Community Engagement***

#### Posters

- *Szilvia Serra-Páka, Anita Czudar, Gyula Lakatos, University of Debrecen, Hungary*  
***Survey on the Educational Efficiency of Environmental Education in Hungarian Secondary Schools***

- *Leida Talts, Airi Kukk, Maia Muldma, Tallinn University, Estonia*  
**Early Language Immersion as a Key for Cultural Sustainability in Multicultural Society**

#### Workshop

- *E.J. Wensing, Ecosphere-Net, USA*  
**Toward An Action Research Network for I Am Sustainability Education in Latvia: An Initial Ecosphere Net Hermeneutic Inquiry Workshop**

### SECTION 3: TEACHER EDUCATION FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT (page 35)

#### Paper presentations

- *Olga Arhipova, Daugavpils City Educational Department, Latvia*  
**School Leadership Training – Problems of Today and Perspectives for Tomorrow**
- *Inga Belousa, Skaidrite Uzulina, Daugavpils University, Latvia*  
**Emotional and Social Competence of Pedagogical Mastery in the Context of Education for Sustainable Development**
- *Sergejs Čapulis, Jeļena Badjanova-Lomzina, Daugavpils University, Latvia*  
**Holistic Upbringing of a Person in Karate Classes**
- *Amarella Eastmond, University of Yucatan, Mexico, Jens Grabowski, Daugavpils University, Latvia, Wendy Ku, University of Yucatan, Mexico*  
**Environmental Literacy and Understanding of Sustainable Development amongst Latvian and Mexican Teacher Training Students: A Comparative Perspective**
- *Helen Gerretson, University of South Florida, USA, Dzintra Ilisko, Daugavpils University, Latvia, Carol Fortino, University of Northern Colorado, USA*  
**Self-regulated Teaching and Learning for Sustainable Development**
- *Shamsiah Haji Tajuddin, University Brunei Darussalam, Brunei Darussalam*  
**ESD: Student Teachers' Perspectives**

- *Ulla Härkönen, University of Joensuu, Finland*  
**Pedagogical Systems Theory and Its Cultural Criteria for Human Sustainable Development**
- *Lolita Jonane, Daugavpils University, Latvia*  
**Didactical Fractal as a Conceptual Model for Sustainable Science Teacher Education**
- *Irena Katane, Svetlana Kruglija, Latvia University of Agriculture, Latvia*  
**Ecological Perspective on the Prospective Teacher Education in the Context of Sustainable Development**
- *Irena Katane, Latvia University of Agriculture, Latvia*  
**Conceptions of Continuing Education and Further Education within the Context of Lifelong Education**
- *Inta Klasone, Liepaja University, Latvia*  
**The Role of Art Education for the Sustainable Development**
- *Nelly Kostoulas-Makrakis, University of Crete, Greece*  
**Engaging Pre-service Teachers in Emancipatory ESD Knowledge Construction and Transformative Pedagogy**
- *Valērijs Makarevičs, Daugavpils University, Latvia*  
**Personality Time as a Structuring Factor of Professional Identity Formation**
- *Silvija Mežinska, Mārīte Mežāre, Rezekne Higher Education Institution, Latvia*  
**Environment of Studies in the Context of Sustainability in Teacher Education: Rezekne Higher Education Institution's Experience**
- *Carmel Mulcahy, Charlotte Holland, Dublin City University, Ireland*  
**Theory and Practice: Working with Adult Learners to Promote ESD in Their Institutions**
- *Nataša Ondrušková, Comenius University, Slovakia*  
**New Opportunities to Incorporate ESD into Education System in Slovakia**
- *Anita Pipere, Daugavpils University, Latvia, Veronika Schulte, Hamburg University of Applied Sciences, Germany, Hans-Martin Kochanek, NaturGut Ophoven, Germany, Beata Fedyn, Panstwowa Wyzsza Szkoła Zawodowa W Raciborzu, Poland*  
**Energy Topic in Non-formal Education: Comparative View of European Teachers and Out-of-school Experts**

- Anita Pipere, Lolita Jonāne, Antonijs Salītis, Irēna Kokina, Rudīte Grabovska, Mārīte Kravale-Pauliņa, Daugavpils University, Latvia  
**Energy Topic in Non-formal Education of Latvia**
- Katrin Poom-Valickis, Tiina Elvisto, Tallinn University, Estonia  
**Students' Motives and Satisfaction with Studies in the Area of Natural Sciences and Their Willingness to Continue Studies in Teacher Education**
- Ilona Sidoroviča, Daugavpils University, Latvia  
**Inclusive Education in the Context of Holistic Pedagogy**
- Larisa Silova, Natalija Gerina, Daugavpils University, Latvia  
**Multicultural Education Teaching Sport in Secondary School: Sustainability Perspective**
- Anne Tiko, Tallinn University, Estonia  
**Teacher as the Main Influencing Factor on the Welfare of a Child at School**
- Carlos A. Torre, E.J. Wensing, Ecosphere Net, USA  
**The Ecology of Education: Knowledge Systems for Sustainable Development and Sustainability**
- E.J. Wensing, Ecosphere Net, USA, Clara Mandolini, Università degli studi di Macerata, Italy  
**From Philosophy to Praxis: Learning Gateways to an Improved Relationship with Nature and how Education for Global Sustainability Can Access Them**

#### Posters

- Jelena Badjanova-Lomzina, Sandra Zariņa, Daugavpils University, Latvia  
**Sustainability in Developing Teachers' Professional Competency**
- Vladislavs Paurs, Rezekne Higher Education Institution, Latvia  
**Integration of Bionics in Design Study Courses**
- Aleksandra Šjahova, Māris Čačka, Daugavpils University, Latvia  
**Development of Secondary Education Visual Art Teachers' Creative Work**
- Liene Zarembo, Rezekne Higher Education Institution, Latvia  
**Motivational Aspects of Students' Creativity in Teachers' Education**

#### Workshops

- Rima Bakutytė, Lidija Ušeckienė, Siauliai University, Lithuania  
**In Service Training of Pre-school Pedagogues as a Mean for Sustainable Development**
- Sofia Savelava, Youth International Education Club NEWLINE / Academy of Post Graduate Education, Belarus  
**Organisation of School Teams (Educators, School and Youth Community) for Effective Work in ESD System**

#### SECTION 4: EDUCATION FOR SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION (page 65)

#### Paper presentations

- Jelena Davidova, Tatjana Minakova, Daugavpils University, Latvia  
**Levels, Criteria and Indicators of the Development of Music Teacher Programme Student's Reflective Activity in the Context of Sustainable Development**
- Imre Kárász, Gyula Lakatos, Institute of Environmental Institute, Hungary  
**Sustainable Development in Environment BSc in Hungarian Higher Education**
- Adam Kiss, Maria Szabo, Eötvös Lorand University, Hungary  
**Teaching the Environmental Effects of the Application of Water Energy**
- Gyula Lakatos, Szilvia Serra-Páka, Ilona Mészáros, University of Debrecen, Hungary  
**Environmental Knowledge Assessment of the Students at Debrecen University (Hungary)**
- Eridiana Oļehnoviča, Svetlana Ignatjeva, Daugavpils University, Latvia  
**Sustainability in Career Development Support in a Regional University Daugavpils University**
- Astrida Skrinda, Daugavpils University, Latvia  
**A Meaningful Context-based Approach to Foreign Language Vocabulary Acquisition at the Tertiary Level**

- *Alnis Stakle*, Daugavpils University, Latvia  
***New Media and New Literacies: Higher Art Education in Latvia in the Decade of Sustainable Development***

#### Posters

- *Amirhossein Alibaygi*, Razi University, Iran  
***Sustainable Higher Agricultural Education in Iran: Components, Requirements, and Barriers***
- *Diana Apele*, Rezekne Higher Education Institution, Latvia  
***The Concept of a Sustainable Design in the Study Process***
- *Agrita Sala*, School of Business Administration Turība, Latvia  
***Development of Students' Research Competence in Higher Education***
- *Anne Virtanen, Liisa Rohweder*, HAMK University of Applied Sciences, Finland  
***Critical Elements of Learning for Sustainable Development in Higher Education – a Case Study in the Baltic Sea Region***

#### Workshop

- *Detlev Lindau-Bank, Andreas Hoenig*, University of Vechta, Germany  
***„Constructive-Confrontation-Training (Coolness-Training) for Students” – TheFlagship-Project of RCE - Candidate Vechta***

#### SECTION 5: ORGANISATION OF LEARNING ENVIRONMENT IN EDUCATION FOR SUSTAINABLE DEVELOPMENT (PRE-SCHOOL, PRIMARY AND SECONDARY LEVEL) (page 77)

#### Paper presentations

- *Inga Gedžūne, Ginta Gedžūne*, Daugavpils University, Latvia  
***Development of Secondary School Students' Communicative Competence in English in the Context of Education for Sustainable Development***
- *Natalja van-Gejeka*, Daugavpils University, Latvia  
***Studying and Forming Learning Environment in a Technical School***
- *Ligita Grigule*, Daugavpils University, Latvia  
***Assessing Language Development in Bilingual Education Programmes: Challenges and Opportunities***

- *Olga Grišāne*, Daugavpils University, Latvia  
***Integration Perspectives of Formal and Non-formal Education for Development of Students' Research Skills***
- *Dzintra Gulane*, Daugavpils University, Latvia  
***Formation of a Sustainable Attitude in Nature Study Subjects in Primary School Learning Environment in Latvia***
- *Vija Guseva*, Daugavpils University, Latvia  
***Conditions of Promoting Individualised Learning Process for Primary School Children with Learning Difficulties***
- *Dzintra Iliško, Svetlana Ignatjeva, Ilona Mičule*, Daugavpils University, Latvia  
***Teachers' Competency in Doing Research with Primary School Children***
- *Abdülkadir Kabadayi*, Selcuk University, Turkey  
***Analysing “Children-Playground-Play” Metaphors Based on Turkish Pre-Service Teachers' Views***
- *Irina Kazakevicha, Sergejs Chapulis*, Daugavpils University, Latvia  
***Interaction of School and Family in the Question of Prophylaxis of Correct Posture of Younger Pupils***
- *Beáta Kosztin –Tóth, Ibolya Markóczi-Revák*, Debrecen University, Hungary  
***Concepts, Problem-solving and Environmental Awareness at the Primary Level***
- *Raili Lehtolainen*, University of Helsinki, Finland  
***Home-school Interconnection, Photography and Sustainable Education***
- *Inese Lusena- Ezera*, Liepaja University, Latvia  
***Characteristic of Distributed Leadership in Management of Latvia's Schools of General Education***
- *Ibolya Markóczi-Revák, Beáta Kosztin –Tóth, Ilona K. Schneider, Franz Oberlander*, Debrecen University, Hungary  
***Improvement of Skills for Sustainable Development in the Primary School***
- *Ilona Mičule, Dzintra Iliško*, Daugavpils University, Latvia  
***Students' Reflection on Being a Teacher at Primary School: Fieldwork Experience***
- *Shilpi Mishra*, International Institute for Population Sciences, India  
***Schooling of Children in a Tribal Setup: Perception and Reality***

- *Iveta Nikolajeva, Elfrida Krastina*, Daugavpils University, Latvia  
**Self-regulated Learning Environment in Classes in Secondary School**
- *Baiba Reinberga*, Daugavpils University, Latvia  
**Figurative Insight in Spiritual Pedagogical Background**
- *Liljana Skopinskaja*, Tallinn University, Estonia  
**Facilitating Motivational Strategies in the Foreign Language Classroom**
- *Srečo Zakrajšek, Peter Purg*, Institute of Environmental Institute, Slovenia  
**Sustainable Development of Slovenian High Schools through the Use of ICT**
- *Sandra Zariņa, Inga Belousa*, Daugavpils University, Latvia  
**Reading Literacy Development of 5-6 Year Old Children**
- *Vaiva Zuzeviciute, Monika Miliusiene, Audrone Alechnaviciene*, Vytautas Magnus University, Lithuania  
**Changes of Teachers' Role in Education for Sustainable Development**

#### Posters

- *Valentina Maklakova*, Daugavpils University, Latvia  
**The Level of Physical Training of Pupils in Multi-discipline Sports as a Factor of Mastery of Sport**
- *Ojars Rode, Elfrida Krastina*, Daugavpils University, Latvia  
**Value Education in the Folk School in the Context of Education for Sustainable Development in Latvia**
- *Anna Vilcāne*, Daugavpils University, Latvia  
**Motivating Factors for Intermediate Level Students in Art Education**

#### Workshop

- *Sofia Savelava*, Youth International Education Club NEWLINE / Academy of Post Graduate Education, Belarus  
**Formation of Key Competences of Students as a Condition for Effective System of Sustainable Development Education at School**

### SECTION 6: EDUCATION FOR SUSTAINABLE DEVELOPMENT AND SOCIAL WORK (page 102)

#### Paper presentations

- *Piotr Prus, Radosław Sztuba*, University of Technology and Life Sciences, Poland  
**The Role of Agricultural Counselling Centres in Implementation of Sustainable Development of Rural Areas in Poland**
- *Nijole Veckiene, Sigita Sauleniene*, Vytautas Magnus University, Lithuania  
**Interdisciplinary Cooperation as Strategy for the Changes of the Curriculum: The Case of Art Teacher and Social Worker Education**

#### Posters

- *Tina Kallavus*, Tallinn University, Estonia  
**Possibilities of Supporting Children with Special Needs as Cooperation between Educational, Social and Medical Fields**
- *Svetlana Lanka*, Liepaja University, Latvia  
**Perfection of the Professional Competence of Social Workers in the Context of Sustainable Development**

#### Workshop

- *Detlev Lindau-Bank, Klaus-Dieter Scheer*, University of Vechta, Germany  
**Social Work and Professional Competencies**

### SECTION 7: EDUCATION FOR SUSTAINABLE DEVELOPMENT AND E-LEARNING (page 107)

#### Paper presentations

- *Rudolfs Gulbis*, Riga Technical University, Latvia  
**Comparing Server Activity Logs of Latvian Information Networks**
- *George Chidiebere Iheanacho*, Universitas Sebelas Maret, Indonesia  
**Globalizing E-learning for Sustainable Development in Culture and Education**
- *Janis Kapenieks*, Riga Technical University, Latvia  
**Mobile Learning for Developing the Competence**
- *Selvi Kıymet*, Anadolu University, Turkey  
**Motivating Factors in Online Courses**
- *Sirje Klaos*, Tallinn University, Estonia  
**Hidden Pedagogical Challenges for the Teacher in E-learning**
- *Vassilios Makrakis*, University of Crete, Greece

***Making Hypermedia Technology an Integral Part of Teaching and Learning for Sustainability: The Learning Power of the WikiQuESD Approach***

- Peter Purg, Srečo Zakrajšek, Institute and Academy of Multimedia, Slovenia  
***Sustaining Positive Motivation and Credit Value through Blended Learning***
- Jozef Szabo, Debrecen University, Hungary  
***Local Media and Consumer Behaviour***
- Dzintars Tomsons, Alīda Samuseviča, Vineta Tomsone, Liepaja University, Latvia  
***Development of Competencies by Playing Games and Using E-learning***
- Ieva Vīdoliņa, Riga Technical University, Latvia  
***Knowledge Management Model to Facilitate E-inclusion***

Posters

- María Dolores Afonso Suárez, Cayetano Guerra Artal, Francisco Mario Hernández Tejera, Javier Lorenzo Navarro, Universidad de Las Palmas de Gran Canaria, Spain  
***IES Campus a Multimedia Learning Management System for Cultural Diversity in Higher Education Space***
- María Dolores Afonso Suárez, Cayetano Guerra Artal, Francisco Mario Hernández Tejera, Javier Lorenzo Navarro, Universidad de Las Palmas de Gran Canaria, Spain  
***Prometeo, Towards a Learning Management System for Cultural Diversity in the University***

**SECTION 8: EARTH CHARTER AS A FRAMEWORK FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT / EARTH CHARTER YOUTH INITIATIVE AND MULTICULTURAL APPROACH TO EDUCATION FOR SUSTAINABLE DEVELOPMENT** (page 119)

Paper presentations

- Marcos Estrada de Oliveira, Brazilian Institute of Education for Life, Brazil  
***Education for Sustainable Development within the Formal Curriculum in Costa Rica: The Example of Earth Charter Materials in Primary Schools***

- Solvita Raga, Daugavpils University, Latvia  
***Integrated Approach to Implementation of the Principle of Sustainability in Preschool***

Workshop

- Dmitry Savelavu, Youth International Education Club NEWLINE / The Earth Charter Youth Group in Belarus, Belarus  
***Global Citizenship for Sustainable Development***

## Keynote speakers

### Sustainable Education from the Perspective of Democracy and Action Research

**Ilga Salite**

Daugavpils University, Latvia

The global society most frequently expresses the major 21<sup>st</sup> century challenge and aspirations in such terms as “sustainability” and “development”. In education, this challenge is related to the terms “education for sustainable development” and “sustainable education”. These terms are followed by another level of notions: “development environment”, “teaching and learning environment” and “learning and research environment”. It is not by chance that these terms have nowadays become popular. They indicate an essential interest which has become topical during the second half of the previous century and has become an urgent need in the present century. What lies at the basis of such interest? It is an educational interest that has been revealed as a need to teach to recognise sustainability, learn to evaluate the most significant contexts of education and develop skills of choosing the pedagogical approach and tools that guide education towards sustainability. Actually, it is researchers’ and teachers’ interest in subjective and objective obstacles that hamper social development and inhibit the search for solutions to overcome them.

In the present article the author will discuss: some experiences in recognising sustainability/unsustainability; educational environment from J. Dewey’s perspective; changes in the relationships between nature/humans and democracy development; the author will also evaluate the experiences of democracy development from the perspective of sustainability and will examine action research for sustainable development.

**Key words:** sustainable education; educational environment; democracy; action research.

### Intercultural Dialogue and Europeanization of Education - Research Initiatives Supporting Education for Sustainable Development

**Peter Schreiner**

Comenius-Institut, Germany

The paper presents methodological concerns and first results of a current research that deals with religion in the context of Europeanization of Education. Its focus is on intercultural dialogue as a European issue and how this is linked to Education for Sustainable Development.

**Key words:** Europeanization; intercultural dialogue; grounded theory; discourse analysis; religion.

## **Earth Charter: A values-driven Approach to Education for Sustainable Development**

**Earth Charter Secretariat**  
Earth Charter Center for Education  
for Sustainable Development, Costa Rica

*Presented by Marina Bakhnova-Cary*

What are specific contributions the Earth Charter (EC) can make to ESD?

The Earth Charter is a declaration of values and principles for a more just, sustainable and peaceful world. It was drafted through a decade long global consultation process. Shaped by contemporary science, international law, the world's religions and philosophical traditions, it is built on the reports of the UN summit conferences during the 1990s.

The Earth Charter provides a focus, universal 'shared' ethical content, and models a value-based learning process for meeting the challenge of dealing with an insufficient emphasis on values in contemporary education systems. Educational activities associated with "values" often constitute a disputable ground because of concern about "which" values and "whose" values are being promoted by the Charter. Such concerns become less essential when the values that are examined represent universal core values that respect human dignity, care for the whole community of life, and are consistent with those of major cultures around the world. The EC also provides a holistic curriculum framework for organizing the multitude of complex elements that must be brought together when addressing sustainable development. It is useful, therefore, to consider the unique themes and perspectives offered by the Earth Charter that can provide the focus in developing new educational materials.

**Key words:** values, Earth Charter, input, education for sustainable development.

## **SECTION 1: PHENOMENOLOGY OF EDUCATION FOR SUSTAINABLE DEVELOPMENT**

Paper presentations

### **Sustainable Development – Understanding and Introducing the Notion in Polish Educational Actuality**

**Agnieszka Berlińska, Małgorzata Czapla**  
Adam Mickiewicz University, Poland

The aim of this article is to discover if or how sustainable development (SD) occurs in National Curriculum Framework in comparison with the accepted new version of it. There is also an overview of SD issues in selected Polish teaching programmes, considering different education levels (mainly subjects: primary science, biology, geography). Everything is analysed in the context of UNECE strategy of Education for Sustainable Development (ESD). The conclusions show if there is any change in Polish education and point out the opportunities to implement ESD in Polish schools. This creates an ideal area for discussion on international level about the progress of understanding the notion. The research is supported by the analysis of understanding of SD in some Polish documents and literature.

**Key words:** SD; ESD; Polish schools; Polish National Curriculum Framework; teaching programmes.

## Challenges of Contemporary Lithuanian School Curriculum: Real Sustainability or Literal Legitimacy?

**Tatjana Bulajeva, Lilija Duobliene**  
Vilnius University, Lithuania

Educating for a sustainable future includes the improvement of education quality. The problems faced are often linked with the curriculum. Is the contemporary curriculum aimed at real sustainability development or is it just an instrument used for literal legitimacy? The authors conclude that teachers often use textbooks and not the curriculum; they do not understand the document; the curriculum is not convenient for use. Sample includes 646 teachers. Focus group interviews, opinion survey methods used clarify the role that National Curriculum plays in the teaching process; teachers' opinions on their curriculum management skills. Results describe the curriculum and its implementation problems that teachers face. Conclusions are significant for the policy makers aiming at improvement of curriculum for sustainable development.

**Key words:** core curriculum; sustainability development; education policy; education quality.

## Cosmopolitanism, Sustainable Development and Education

**Clara Mandolini**  
Università degli studi di Macerata, Italy

The aim of the paper is to highlight for sustainable educators some methodological problems connected to the hypothesis of a new "methodological cosmopolitanism" in regards of possibilities to reorient social practices and institutions: first, the continuing crisis of nation-states as central political subjects, then the necessity to shift the methodological framework from a nationalistic one toward a cosmopolitan one. The main questions that arise here are: how does the concept of SD introduce a new attitude toward internationalism? Inversely, how should education be reoriented to adapt itself to the changes in the socio-economic and political dynamics that configure the conditions of development nowadays? How does the concept of sustainability change in a "methodological cosmopolitanism"? These issues refer mainly to Ulrich Beck's reflection about the social change in a global world.

**Key words:** methodological cosmopolitanism; culture; development; global education.

## Eco-phenomenology: The Language of Dwelling

**Randall Ulveland**  
Western Oregon University  
College of Education, USA

In this phenomenological analysis, the author considers possibilities of how an educator might, in educational settings, promote an awareness of and active engagement into sustainability activities. We are called to dwell. And in our dwelling, our Being is disclosed. But in a technological world, we are disclosed as being disembodied and disconnected from nature. We find similar disclosures in compulsory schooling. In schools, the language and power of institutional authority and efficiency has delimited the manner in which the world can be present. Our fundamental relationships with knowledge and nature have been altered. Pedagogical attempts to inform students and teachers about sustainability might suffer a similar delimiting fate. Perhaps we have forgotten how to dwell.

**Key words:** eco-phenomenology; instrumental rationality; dwelling; calculative thinking; school knowledge.

## Conditions for Sustainable Education

**Roel Stemmer**  
NGO Enviro-Net, The Netherlands

Awareness of sustainability is only feasible via an integral approach of time, place and responsibility. History, context and person are qualitative for every theme, project, lesson, curriculum, etc. throughout one's career. It makes students aware of their acting regarding the future. Our behaviour is at stake, and awareness regarding the fact that we are relational human beings must be realised in order to enable sustainable acting. To achieve this, the relationship student – teacher should be centralised.

During the evolution our brain is stacked by the bottom brain layer, the limbic system and the neocortex. A person responds through surviving, either short term rewards, or long-term behaviour. With the help of a neo cortex, we have to learn to integrate these actions in order to grow ourselves in making balance between competition and care beyond dualism. It requires a dialectic relationship.

**Key words:** awareness; care; dualism; relation; neocortex.

## Problem-Based Learning for the Development of Pupils' Competitiveness

**Ilze Kalnina**

Latvia University of Agriculture, Latvia

Reflecting on theoretical and empirical research and pedagogic/academic experience, the author of this paper fortifies necessity of new conceptual approach to promote development of competitive personality. The competitiveness (in the two aspects: the competitiveness of the society, every individual's competitiveness) is an important precondition for sustainable development of the society under today's changeable conditions. One of the ways to promote competitiveness is problem-based learning. The substantiation of problem-based learning is based on the constructivism theory, including substantiation of materialistic didactics and problem-based learning in the publications of English - American scholars. The author analyses and evaluates the results of empirical research in the framework of the project "Be the Leader!" of the educational programme "Commercial Studies at a Secondary School". The aim of this research is to study teachers' self-assessment after their lessons in the context of promotion of pupils' competitiveness.

**Key words:** competitiveness; problem-based learning; constructivism.

## SECTION 2: RESEARCH FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT

### Paper presentations

### Encouragement of Environment Friendly Branches in Latvian National Economy from the Sustainable Development Perspective

**Dzintra Atstāja, Ivars Brivers**

BA School of Business and Finance, Latvia

Latvian National economies have sustainable development and activity agree with EU requirements. The ideology of environmental protection is comparatively new in Latvia and it is based on the concept that is directed from the protection of separate nature elements and economical usage of resources. The authors provide a review on the accomplished work, describe obtained results, emphasise scientific novelty of the article, practical importance of the obtained results and the necessity to introduce them in professional education (study courses: Macroeconomic and Environment management) and national economy. Authors used possibilities of computer technology. The paper attempts to present the analysis of economic processes in a contemporary Latvia through finding the reasons of rapid economic growth and the implication of it on other macroeconomic processes.

**Key words:** data basic; GDP; environment; methods; sustainable development.

## **Non scholae, sed vitae discimus. The Meaning of School Learning in the Minds of Students**

**Tiiu Kuurme, Anu Carlsson**  
Tallinn University, Estonia

The aim of the study was to find out how Finnish and Estonian students interpret the meaning of the school learning a) in conjunction with their life as a whole, b) in connection to the role of a student, c) in the context of extracurricular activities pertaining to school, d) as an event widening the horizon of cognition. 161 Finnish students and 220 Estonian students from different types of schools, including private and alternative schools, were questioned. Data interpretation is based on the theory of existential phenomenology. Respondents' answers were analysed according to the principles of phenomenological method with the use of a semi-structured questionnaire. Results indicate that a strong stamp of institutionalisation falls on the school learning in respondents' interpretations, where the importance of the procedural framework tends to dominate over the meaning of the content learned.

**Key words:** school reality; meaning of the learning; school experiences; identification.

## **Connections between Rapid Naming Speed and Reading Speed and Accuracy for 6 – 8 Year Old Children in Estonian**

**Kadi Lukanenok**  
Tallinn University, Estonia

Reading skill is one of the major basic skills playing fundamental role in child development and further lifelong sustainability. The individual's development and lifelong sustainability could be seriously affected by reading difficulties (RD). Therefore, the earliest possible identification of RD could not be overestimated. Rapid automated naming skill is a powerful predictor for RD.

The connections between rapid automated naming (RAN) skills, especially RAN speed and reading skills are investigated and well documented in languages with deep orthography. There are few studies about RAN skills in transparent orthographies. The current research is the first attempt to study RAN skills in children speaking and schooling in Estonian, a language with highly transparent orthography. This study is longitudinally aimed at examining RAN speed and reading skills of two independent groups of children: age appropriate speaking children and children with SLI at the age of 6, 7 and 8. The students with SLI performed slower than controls in point of RAN speed throughout three years of examination,  $p < .001$ ...  $.005$ . The correlation between RAN speed and reading skills was significantly different between controls and SLI group. These findings contribute the evidence about SLI as a risk factor for reading difficulties and the personal sustainable development.

**Key words:** rapid naming speed; reading; reading difficulties; sustainable development.

## **Environmental Protection and Renewable Energy Education: Tools for Economic Development**

**Peter Oluwayemi Omidiora,  
Francis Olakunle, Joseph Uja**  
Department of Ecology and Environment, Nigeria

Educating people on the need to reduce energy consumption from fossil fuel must be a priority if we are to address the adverse effect of global warming and climate change. 'Waste' from both, rural and urban areas, has been the cause of many serious environmental problems. Reduction of energy consumption is targeted to create a sustainable society. The key role in future load management programmes must be put in place, particularly Bio-Fuel and Bio-climatology. Many new services focus on the arena of energy saving, acceptability by the consumer is inevitable.

**Key words:** waste; urban; rural; climate; renewable energy; fossil fuel.

## **Quality of Family Relations in Ensuring Sustainable Education**

**Monica Sakk, Marika Veisson**  
Tallinn University, Estonia

The aim of the current study was to clarify which relations middle and high school students have with their parents and how they affect the quality and future vision of education. How do students and parents understand family care, joint activities, and vision of future and do their conceptions differ? The current study used a questionnaire, which was administered to 4372 students in grades 4 through 12 in Estonian general education schools and 2405 parents. The results were analysed with the  $\chi^2$ -test. According to parents, family relations were statistically significantly more caring than students perceive them. Students worry about their future coping at school and about finishing the school significantly more than parents. The study reveals that students, compared to their parents, worry more about school problems and about their future and are more critical about family caring.

**Key words:** students; parents; family care; joint activities; vision of future.

## **Education for Sustainable Development and Hazard Preparedness: A Key to Promote Community Engagement**

**Constantina Skanavis, Maria Sakellari**  
University of Aegean, Greece

Recognition that education programmes based on the dissemination of general information are ineffective has called attention for alternative approaches to hazard education. Paton (2008) developed model predicting levels of hazard preparedness. The model highlights a need for discussion of hazard issues within established community forums in ways that empower community members to identify the implications of hazard activity for them and to facilitate their ability to confront those issues. Education for Sustainable Development (ESD) is multidisciplinary, lifelong and embraces a wide range of participatory learning experiences. The purpose of ESD is to ensure that anyone can benefit from quality education, and that the principles and values of sustainable development are incorporated in all forms of education. This paper discusses that Paton's model can inform the development of ESD programs in order to promote community engagement.

**Key words:** ESD; hazard education; citizen participation.

Posters

**Survey on the Educational Efficiency of Environmental  
Education in Hungarian Secondary Schools**

**Szilvia Serra-Páka,  
Anita Czudar, Gyula Lakatos**  
University of Debrecen, Hungary

Solutions of environmental and conservational problems as well as formation of the consciousness of environmental mentality were determinant in the education of the last decade.

On the 7th JTET conference, I would like to explain the results of the survey which analysed the 1st and the 5th year university students' environmental consciousness.

On the 6th JTET conference the authors presented the results of a previous survey which was conducted in 10 secondary schools in Hungarian cities and towns. In the first part of the questionnaires, the authors inquired about the lifestyle and smoking habits of students. In the second part, students had to explain some global environmental world problems in few sentences.

During the design of the questionnaires, we took into account the mindset of Hungarian students about the main environmental problems and the concept of sustainable development.

**Key words:** environmental education; Hungarian secondary school.

## Early Language Immersion as a Key for Cultural Sustainability in Multicultural Society

Leida Talts, Airi Kukk, Maia Muldma  
Tallinn University, Estonia

More and more Russian speaking parents are looking for ways to help their children to manage language environment without losing their cultural identity. The concept of sustainable education underlines the idea of child's development as directed by internalising cultural signs and symbols, and according to Vygotsky's idea, there is a close connection between sustainable education and child's sustainable development.

The research was conducted in spring 2007 when the parents of the Estonian language immersion kindergarten graduates and the kindergarten teachers working with immersion method assessed children's achievements. The findings of the research confirm that applying the language immersion methodology puts first the development of children in the socio-cultural setting. The study indicated good preparation for the development of social skills in children participating in the immersion programme. The results showed that children in immersion groups demonstrate good coping with self-service actions and self-esteem. Also, a positive outcome of the study is the fact that teachers' and parents' assessments of the development of children are mostly similar.

**Key words:** cultural sustainability; language immersion; children's development.

## Workshop

### Toward An Action Research Network for I Am Sustainability Education in Latvia: An Initial Ecosphere Net Hermeneutic Inquiry Workshop

**E.J. Wensing**  
Ecosphere Net, USA

Most research that advances the transition to global sustainable development is currently originating from innovations in science and technology. By contrast, education research continues to struggle with and debate over how to best construct and implement a curriculum for sustainable development (SD). This workshop is part of a ground floor initiative to utilise social science/action research to mitigate this problem. Ecosphere Net is a social science research boundary organisation that seeks to bridge the divide between knowledge and actions for SD and sustainability through interfacing the two in an action research pedagogy called I Am Sustainability (IAS). This workshop seeks to recruit SD teachers and initiate a network with 2-3 action research IAS projects in Latvia.

**Key words:** education; action research; sustainability.

### SECTION 3: TEACHER EDUCATION FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT

Paper presentations

#### **School Leadership Training – Problems of Today and Perspectives for Tomorrow**

**Olga Arhipova**

Daugavpils City Educational Department, Latvia

Effective leadership is not just a job; it is a complex interaction between a range of personal and professional qualities and experiences. The aim of school leadership professional qualification development is that Head teachers should develop and use a democratic, learning and communicative form of leadership that has its starting point in the national curriculum. Several different concepts are used to describe the leadership development process: leadership training, leadership experience, professional development, management development and management training. Head teachers should ensure that the school, the people and the resources within it are organised and managed to provide an efficient, effective and safe learning environment.

**Key words:** Head teachers training; professional qualification; model of learning; leadership development; leadership experience; learning environment.

### **Emotional and Social Competence of Pedagogical Mastery in the Context of Education for Sustainable Development**

**Inga Belousa, Skaidrite Uzulina**  
Daugavpils University, Latvia

Considering that successful re-orientation of education towards the strategy of sustainable development is functionally initiated by an educator, teacher's professional mastery is the main fundamental pre-condition of these changes. Teacher's professional mastery in this article is considered as a whole of several diverse and mutually integrated competences that encourage a teacher to solve challenges created by globalization within local conditions. The article provides conceptual discussion and teachers' view about pedagogical mastery and its competences, primarily emotional and social. Thus, this article is a contribution to discussion about emotional and social aspect of quality of teacher education and training in terms of its transformation from qualification to competence orientation.

**Key words:** pedagogical mastery; competence; qualification; teacher education and training; education for sustainable development.

## Holistic Upbringing of a Person in Karate Classes

**Sergejs Čapulis, Jeļena Badjanova-Lomzina**  
Daugavpils University, Latvia

Holistic upbringing of a person includes not only physical training but also a spiritual orientation of a person. Values are reflected in action and are closely related to a holistic perception and development of a person. Karate classes become a significant value especially among youth. Karate classes should be aimed towards fostering a holistic upbringing of a person. The authors of the article pay particular attention to developing spiritual values of a person and person's activity according to one's values.

Sustainable education contributes to the development of a holistic development of a person. The authors of the article incorporate a dimension of sustainable development in the development of philosophy of holistic person in karate classes.

**Key words:** holistic upbringing; sustainable development; teacher education.

## Environmental Literacy and Understanding of Sustainable Development amongst Latvian and Mexican Teacher Training Students: A Comparative Perspective

**Amarella Eastmond,**  
University of Yucatan, Mexico  
**Jens Grabowski,**  
Daugavpils University, Latvia  
**Wendy Ku**  
University of Yucatan, Mexico

By comparing environmental attitudes, behaviour and knowledge between Latvian and Mexican teacher training students, this research sheds light on successes and failures of teacher training education for sustainability in different contexts. Attention is paid to awareness of the interconnections between life-style and environmental deterioration, concepts of sustainable development and ecological justice and willingness to make personal sacrifices in order to conserve the environment for the future. The research indicates that while Latvian and Mexican teacher training students obtained similar scores for environmental attitudes and behaviour, specific groups scored significantly higher in environmental knowledge and had a deeper understanding of the interconnections between life-style and environmental conservation. However, in terms of personal sacrifice for future generations, no significant differences were observed.

**Key words:** attitudes; behaviour; environmental literacy; knowledge; students.

## Self-regulated Teaching and Learning for Sustainable Development

**Helen Gerretson,**  
University of South Florida, USA  
**Dzintra Ilisko,**  
Daugavpils University, Latvia  
**Carol Fortino,**  
University of Northern Colorado, USA

Teachers in many countries are concerned about students' connections to Nature that underpin sustainability for environment, education, and culture through inquiry-driven activities that encourage self-regulated learning (SRL). We documented professional development activities associated with Mathematical Patterns in Nature, framed by the theory of SRL and extending into the realm of self-regulation evaluation. The paper presentation will discuss 1) background for the research, 2) brief description of the workshop, 3) report of survey data, 4) the "Learning Evaluation Guide for Understanding Progress" (LEG-UP) rubric to assist the teachers and students to understand how to activate, direct, and sustain inquiry-driven activity, and 5) use of SRL strategies to actualise contextualised professional development toward teacher change and education for sustainable development, as well as lifelong learning.

**Key words:** self-regulation; contextual maths; professional development; sustainability.

## ESD: Student Teachers' Perspectives

**Shamsiah Haji Tajuddin**  
University Brunei Darussalam  
Brunei Darussalam

This paper discusses the findings from a study on 70 undergraduates undergoing primary teacher training in the University of Brunei Darussalam. For this study a questionnaire survey was conducted to collect information regarding their awareness and understanding of ESD. They also participated in groups' discussion on the feasibility of including ESD elements in their teaching and their ability to teach them in the classroom. As a conclusion, this paper discusses how teaching of ESD is seen by students. In this study the author compares conceptions of teaching ESD with the one recommended by UNESCO.

**Key words:** curriculum; student-teachers; teacher training.

## **Pedagogical Systems Theory and Its Cultural Criteria for Human Sustainable Development**

**Ulla Härkönen**  
University of Joensuu, Finland

Based on the theoretical construction process of Härkönen, the latest main results of that process will be presented in this article. Question is about the pedagogical systems theory which has been created in connection with historical pedagogical theories as that of Froebel, Steiner, Montessori and others. Based on the concept analysis on "early childhood education" and "pre-school", the main cultural criteria for these concepts have been found. By making a kind of conceptual cross tabulation, it can be seen how the new model of the pedagogical systems theory gives the new cultural criteria for the concepts of "early childhood education" and "pre-school". In this article the writer will argue why this kind of theory acts for a sustainable human development in early childhood education.

**Key words:** pedagogical systems theory; sustainable human development.

## **Didactical Fractal as a Conceptual Model for Sustainable Science Teacher Education**

**Lolita Jonane**  
Daugavpils University, Latvia

To ensure professional development of teachers so that they are aware of the main goals of education for sustainable development and are able to realise them, new didactical approaches are required. The aim of the research is to explore the views of experts in science education sphere and science teachers about a new conceptual model – didactical fractal. It is focused on the discovery of more effective ways of conveying relevant information to students. It highlights the wholeness of educational aims, strategies, and content in the educational process in strong interaction between four components: context, content, learner, and teacher. Each of the components can be explained from different aspects on two or more hierarchical levels.

**Key words:** sustainable development; teacher education; didactical fractal; contextual approach; competence.

## Ecological Perspective on the Prospective Teacher Education in the Context of Sustainable Development

Irena Katane, Svetlana Kruglija  
Latvia University of Agriculture, Latvia

The sustainable development of today's society can be promoted by providing the educational sustainability. Therefore, teacher education is the way to provide it. The main aim of the research is to substantiate the ecological perspective and ecological approach in teacher education in the context of sustainable development of local community and school as an integral part of community's educational and cultural environment. The authors of this article offer the results of their theoretical research: substantiation of the concepts – ecological perspective and ecological approach in prospective teachers' education, basing on the cultural accordance principle in pedagogy and education. Research methods: study, analysis and evaluation of scientific literature.

**Key words:** cultural environment; ecological approach; ecological perspective; prospective teachers' education; sustainable development.

## Conceptions of Continuing Education and Further Education within the Context of Lifelong Education

Irena Katane  
Latvia University of Agriculture, Latvia

Changes is one of the key-concepts characterising the processes, including education, ongoing in modern society. The offer of lifelong education facilitates the development of knowledge society. Thus, lifelong education is a precondition for the sustainable development of modern society where educators have a special role. Nowadays continuing individual's education becomes more and more topical after both obtaining of compulsory elementary education and obtaining of vocational education at a higher education institution. Therefore the conceptions of continuing education and further education became popular in modern pedagogy. The conceptual meanings of both terms overlap, but they are not synonyms. These are subcategories of lifelong and lifewide learning. The aim of the research performed by the author is to scientifically substantiate the conceptions of continuing education and further education within the context of lifelong education. The results of theoretical research permit to emphasise the common and different features in the content of both concepts. The research results will help to scientifically substantiate and improve the conceptual meaning of the Latvian term tālākizglītība.

**Key words:** continuing education; further education; knowledge society; lifelong education.

## The Role of Art Education for the Sustainable Development

**Inta Klasone**

Liepaja University, Latvia

The aim of the article is, through advocacy of art/art education and art practice, help students develop cultural identity and self identity, enhance each learner's ability to understand his or her place and time in the society. In the empirical part of the research, the students' essays, practical works, feedback based on inquiry forms are analysed. The analysis is based on data collected by the study of a questionnaire. Results of the research indicate that art/art education plays a significant role in addressing social issues, cultural diversity, and identity. Through the process of art making, people can explore a sense of self, share their life experiences. Art educators can help students grow artistically and intellectually. Thus, the authors conclude that art/art education plays a major role in building a harmonious nation today and tomorrow.

**Key words:** art; art education; self-expression; educators.

## Engaging Pre-service Teachers in Emancipatory ESD Knowledge Construction and Transformative Pedagogy

**Nelly Kostoulas-Makrakis**

University of Crete, Greece

The author hypothesised that the ability to change perspectives is important for transformative pedagogy. Design and methods: A reflective case study approach (focus interviews, reflective/reflexive journals, analysis of project-based works of 30 pre-service teachers participating in an undergraduate course) was used to investigate the discrepancy of teachers' constructivist conceptions with actual practice. Results: The identified discrepancy seemed to be an outcome of the difficulty translating constructivism in teaching practice, but also of the misleading conception of constructivism as a homogeneous philosophy. Through reflective practice, participants were able to deconstruct and reconstruct their theories and practices of teaching in more emancipatory ways addressing issues of ESD. Conclusion: This case study helped to understand the nature of change processes towards teaching and learning for a more sustainable future.

**Key words:** ESD; constructivism; action research.

## Personality Time as a Structuring Factor of Professional Identity Formation

**Valērijs Makarevičs**  
Daugavpils University, Latvia

In psychological definitions of personality identity the fact of preserving the main personality features in time is stressed. The unity of time is manifested in the coincidence of a person's life plans and actions directed towards achieving the aims which have been planned earlier. The aim of our research is to check the hypothesis of the coincidence of the individual's personality time continuity and self-evaluation of his/her own professional identity formation level. The results of the research indicate that the agreement of the individual's past, present and future personality time is connected with the fact that his/her professional identity level appears to be higher than that of those who do not have such agreement.

**Key words:** identity; professional identity; personality time; person's life plans.

## Environment of Studies in the Context of Sustainability in Teacher Education: Rezekne Higher Education Institution's Experience

**Silvija Mežinska, Mārite Mežāre**  
Rezekne Higher Education Institution, Latvia

The research describes the current situation in teacher education in the environment of studies at Rezekne Higher Education Institution in the context of sustainability. The aim of the research is to explore the conditions of the sustainable environment of studies in the education of future teachers. Theoretical researches and analysis are made in the context of this problem, and questionnaires as well as applied methods of data processing and analysis are provided. As a result, the conditions of the sustainable environment of studies in teacher education are analysed, the opinion of 72 students and 9 lecturers of the Faculty of Pedagogy about the sustainability of the environment of studies is evaluated, and recommendations for improving the sustainable environment of studies in teacher education at Rezekne Higher Education Institution are designed.

**Key words:** sustainability; teacher education; learning environment; teaching process; learning process.

## **Theory and Practice: Working with Adult Learners to Promote ESD in Their Institutions**

**Carmel Mulcahy, Charlotte Holland**  
Dublin City University, Ireland

Universities often pay lip-service to the concept of linking emerging theories and practical realities of practice. This concept is tested with a group of programme participants, part-time students and others engaged in education/training in their communities. The paper describes the design and development of a degree which supports the development of ESD in communities, where all course work is driven by the lived reality of the student. Varied student intake results in a synergy between disparate communities across a range of economic and discipline divides, and emergent critical theories, driven by disparate dialectical epistemic communities. The emergent theory influences the Curriculum of this innovative programme and supports strategic planning and programme evaluation across a range of Irish based companies and training establishments.

**Key words:** theory; practice; epistemic communities; critical theory; ESD.

## **New Opportunities to Incorporate ESD into Education System in Slovakia**

**Nataša Ondrušková**  
Comenius University, Slovakia

It seems that in a consequence of the world-wide global changes people in the world will be in the nearest future forced to revalue again the social, cultural, political and economic environment in which they live. They will be forced to create a new value orientation for common features and to learn how to live and act as responsible citizens of our unique planet. Importance of education, school and the role of a teacher and family in the preparation of young generation for life in the new conditions is felt and stressed in various official forums. As the result we can observe new topics in official state education policies as well as in new subjects or cross curriculum topics at national curriculum at schools: environmental education, global development education, education for sustainable development. What place are they going to occupy in new school curricula in Slovakia?

**Key words:** environmental education; global development education; education for sustainable development.

## Energy Topic in Non-formal Education: Comparative View of European Teachers and Out-of-School Experts

**Anita Pipere,**  
Daugavpils University, Latvia  
**Veronika Schulte,**  
Hamburg University of Applied Sciences, Germany  
**Hans-Martin Kochanek,**  
NaturGut Ophoven, Germany  
**Beata Fedyn,**  
Panstwowa Wyższa Szkoła Zawodowa W Raciborzu, Poland

The study is a part of EU COMENIUS project aimed to create synergy between out-of-school and curricular learning and resources for teacher training on renewable energy. Study was designed to reveal the German, Latvian and Polish teachers and out-of-school experts' views on non-formal energy education. The constructed tools focused on energy topic in relation to: 1) teaching materials, 2) readiness to teach it, 3) out-of-school places for this topic. 18-item survey with open-ended and closed questions and structured interview with 14 questions were conducted with 167 teachers and 48 experts of out-of-school places simultaneously in three countries. Both qualitative and quantitative data analysis methods were applied. Different conceptual approaches, the best practice examples, challenges and needs, and the main chances for improvement and development in the field were inferred from the data.

**Key words:** non-formal education; out-of-school places; energy education; teachers; experts.

## Energy Topic in Non-formal Education of Latvia

**Anita Pipere, Lolita Jonāne,**  
**Antonijs Salītis, Irēna Kokina,**  
**Rudīte Grabovska, Mārīte Kravale-Pauliņa**  
Daugavpils University, Latvia

The given research represents a part of EU COMENIUS project focused on the energy topic in non-formal education in the context of education for sustainable development. The presentation shows the specificity of Latvian teachers and out-of-school experts' views on non-formal energy education. The constructed tools focused on energy topic in relation to: 1) teaching materials, 2) readiness to teach it, 3) out-of-school places for this topic. 18-item survey with open-ended and closed questions and structured interview with 14 questions were conducted with 50 teachers and 20 experts of out-of-school places. Both qualitative and quantitative data analysis methods were applied. Different conceptual approaches, the best practice examples, challenges and needs, and the main chances for improvement and development in the field were inferred from the data.

**Key words:** non-formal education; out-of-school places; energy education; teachers; experts.

## Students' Motives and Satisfaction with Studies in the Area of Natural Sciences and Their Willingness to Continue Studies in Teacher Education

**Katrin Poom-Valickis, Tiina Elvisto**  
Tallinn University, Estonia

Teachers of natural sciences have a great role in creating knowledge and skills of ESD. At the same time students' interest to continue studies in teacher education has decreased. This study was designed to assess: How clear were the students' motives to study the area of natural sciences? How does the clarity of motives relate to students' satisfaction with their studies? How is students' satisfaction with studies related to interest to continue studies in teacher education? Participants of the study (N=92) were students of natural sciences at Tallinn University. The data were collected with the LSQ questionnaire by Entwistle et al (2002) and questions designed by the authors of the study. The results of the study indicate to a carefully planned curriculum selection and positive learning experience that increases students' willingness to choose teacher education.

**Key words:** ESD; teacher education; students' motives and satisfaction with university studies.

## Inclusive Education in the Context of Holistic Pedagogy

**Iloņa Sidoroviča**  
Daugavpils University, Latvia

Inclusive education is an approach of human rights, with includes social justice, equality and an opportunity to choose. Inclusive education provides education for every child. To reach this goal, it is necessary to change the paradigm of pedagogy.

The process of inclusion influences all spheres of society. To accomplish the process of inclusion, it is necessary to respect all human rights. It is the model of society where all people are equal.

Article consists of three parts:

- The concept of inclusive and multicultural education;
- The target group of inclusive education and models of integration;
- The formation of inclusive school and teachers' role in integration.

The aim of the article is to analyse inclusive education in the context of holistic pedagogy. Methods of research: literature analysis, content analysis, document analysis.

The system of education has proposed different solutions – isolation, segregation, integration and inclusive education. The article analyses inclusive education in the context of Latvia. But it is necessary to carry out a deeper analysis of the issue of inclusion.

Inclusive education is a big step forward to education for sustainable development.

**Key words:** inclusive education; integration; multicultural education; inclusion.

## **Multicultural Education Teaching Sport in Secondary School: Sustainability Perspective**

**Larisa Silova, Natalija Gerina**  
Daugavpils University, Latvia

Contemporary political, economic and social changes put forwards certain requirements for all the society and each individual separately. Society needs multicultural education that is sustainability oriented, by including environmental, civic rights, and social equality aspects. According to the Educational Law of the Republic of Latvia and the requirements of general education, in subchapter on teaching sport defined as "Physical activities about the content of intercultural education," multicultural education was included as a compulsory aspect. This article highlights the attitude of sport teachers towards the content of intercultural education and prompts suggestions for integrating aspects of intercultural education in teaching sport.

**Key words:** sustainability; multicultural education; teaching Sport; secondary school; teachers.

## **Teacher as the Main Influencing Factor on the Welfare of a Child at School**

**Anne Tiko**  
Tallinn University, Estonia

The subject matter of the research is a factor depending on the teacher that affects the welfare of a child at school. The method of study – questionnaire survey with 2166 parents whose children first went to school in autumn 2008. Research results: Parents expect from the teacher child-friendliness and caring attitude, demanding approach and competence in developing the child's learning skills and in observing and adequately reacting to what is taking place in the classroom. The teacher is seen as someone who creates and maintains a safe environment. The concerns that parents experience are related to teacher's attitudes, his/ her biased behaviour, and absence of will to cooperate. The author concludes that teacher training should pay more attention to questions of the development of teacher's personality in order to meet the needs of children

**Key words:** teacher; safe school environment; cooperation with home; development of child's personality.

## **The Ecology of Education: Knowledge Systems for Sustainable Development and Sustainability**

**Carlos A. Torre, E.J. Wensing**  
Ecosphere Net, USA

Research in knowledge systems for sustainable development (KSSD) seeks to determine how science and technology can be put into effective action at a local level. Teachers in education for sustainability attempt to achieve the same goal. KSSD research has indicated that success is context driven, that panaceas are inappropriate and that knowledge systems at best provide solutions for evolution. We describe a teaching framework we are developing to support KSSD researchers and teachers in education for sustainability based in ecology of education. While a need for ecology in education may be apparent, there is also a concurrent equally important need for an ecology of education. We argue you cannot teach ecology in education adequately without an appropriate ecology of education. This paper is about why teachers need to know this and how teachers of education for sustainability can implement and assess this approach in the classroom.

**Key words:** ecology; education; sustainability.

## **From Philosophy to Praxis: Learning Gateways to an Improved Relationship with Nature and how Education for Global Sustainability Can Access Them**

**E.J. Wensing,**  
Ecosphere Net, USA  
**Clara Mandolini,**  
Università degli studi di Macerata, Italy

There are various relationships with the nature achieved by the approaches practised in environmental education. We utilise this information to construct a taxonomy of relationships with nature in terms of human connectedness to nature. Improved relationships are now a global imperative. We argue, learning methodologies imbued with the philosophy of action of Maurice Blondel, the participatory social action research of Kurt Lewin and the deep ecology philosophy of Arne Naess may be the best gateway to get us there. Thus, participatory action learning approaches to education for sustainability may act as gateways toward generating the most healthy and efficacious relationship with nature. This level of relationship with nature will likely provide the best chance for long-term sustainable development and global sustainability.

**Key words:** education; sustainable development; connectedness with the nature.

## **Sustainability in Developing Teachers' Professional Competency**

**Jeļena Badjanova-Lomzina, Sandra Zariņa**  
Daugavpils University, Latvia

The significance of the research is determined by the global tendencies in education that determines the need to develop sustainable educational system where the teacher has a significant role. Sustainable education contributes to the development of the cultural identity concordant to spiritual human values through the environment and generational continuity. Therefore, the author makes an attempt to analyse the trends in education toward sustainable development and to study how the professional competency is being developed within the higher education by training elementary school teachers. This research focuses on the aspects of sustainability and the aspects of teachers' professional development.

**Key words:** professional competency; sustainable development; teacher education.

## **Integration of Bionics in Design Study Courses**

**Vladislavs Paurs**  
Rezekne Higher Education Institution, Latvia

The author applies an integrative approach of bionics for the sustainable development of education, thus facilitating the sustainable development of science in the study process, developing holistic understanding of education, healthier and wealthier society. Introduction of bionics into the study process of design at the tertiary level would facilitate the acquisition of the latest, future-oriented technologies and materials taking ideas from nature and thus improving the quality of life.

The aim of the study is to research the possibilities of integrating bionics into the study courses of "Environment Design" at the tertiary level. The research was carried out among students of the study program "Environment Design". The students' survey was conducted in 2008 where 35 respondents participated.

The survey results revealed that implementation of integrated tasks of bionics for students allows comprehending the interrelation of specific knowledge and skills as well as things and processes of the environment.

Novelty of the research – bionics is insufficiently researched and integrated into education in Latvia:

- researched and scientifically grounded integrative application of bionics in the study process of design at the tertiary level;
- applied discovering and inventing learning strategies in the study process of bionics.

**Key words:** sustainable education; bionics; integration; environment design; composition; technologies.

### Development of Secondary Education Visual Art Teachers' Creative Work

**Aleksandra Šjahova, Māris Čačka**  
Daugavpils University, Latvia

The main task of training secondary school visual art teachers is to develop intelligent, socially active and creative individualities graced by both knowledge and skills in pedagogy, psychology and art. These teachers need to have well-developed teaching skills and competence, proficiency in promoting their students' acquisition of artistic knowledge and competence in modern art. To accomplish the tasks set, the work of teacher educators should be directed towards the development of student's creative activity, so that they could independently and regularly develop their creative skills. To solve this problem, the aim of the study was to work out and theoretically substantiate the model of creative process aimed at facilitation of prospective secondary education art teachers' creative activity.

**Key words:** prospective art teachers; university teachers; creativity; creative activity; stages of creative process.

**Liene Zarembo**

Rezekne Higher Education Institution, Latvia

All levels of education and training can contribute to creativity and innovation in a lifelong learning perspective: the early stages of education concentrating on motivation, learning to learn skills and other key competences, and subsequent stages focusing on more specific skills and the creation, development and application of new knowledge and ideas. Teachers have a crucial role to play in nurturing and supporting each child's creative potential, and can contribute to this by exemplifying creativity in their own teaching. In this regard, more personalised, learner centred approaches can stimulate creativity and increase the motivation and confidence of more practically or artistically oriented learners. The research was concerned with the study of motivation for creativity. The goal was to assess motivation for creativity in study projects and practical works students based on the cognitive orientation theory which defines motivation as a function of a set of themes identified as relevant for creativity. It was expected to find differences in the scores of the themes between more creative and less creative students, as assessed by the students themselves and the lecturer of Home Culture Education Department. Participants were students of professional higher education study programme "Domestic Science/ Housecraft Teacher" who were administered a study project, and a questionnaire about the subjective orientation of creativity. Analyses showed which attitudes and personality tendencies promote creativity. These findings suggest important implications for improving teacher education.

**Key words:** creativity; motivation; subjective factors of creativity; teachers' education.

## **In Service Training of Pre-school Pedagogues as a Mean for Sustainable Development**

**Rima Bakutytė, Lidija Ušeckienė**  
Siauliai University, Lithuania

The in-service training of pedagogues is very important while we are thinking about new generations' ability to find their place in society in the future. The goal of the research is to analyse the motives and needs satisfaction in in-service training of pre-school pedagogues in Lithuania. The research methods used: analysis of literature, questionnaires for pre-school pedagogues, interviews and statistical analysis. Randomly selected participants of the poll included 188 preschool pedagogues from Lithuania. The research showed that 56% of the respondents have not fulfilled their needs for refreshing their qualification. The major factors that influence pedagogues to take in-service courses are needs for development of personality. Social security motivates educationalists that live in the district centre to seek for improvements. Fluctuation factor is the main factor for stimulating pedagogues-supervisors to seek for personal improvement. The main obstacle for in-service training is lack of finances and shortage of time.

**Key words:** pre-school pedagogues; in-service training; motives for education; needs in in-service training.

## **Organisation of School Teams (Educators, School and Youth Community) for Effective Work in ESD System**

**Sofia Savelava**

Youth International Education Club NEWLINE/Academy of Post Graduate Education, Belarus

The key to realisation of ideas of education for sustainable development at school is not only in preparation of educators, but also in organisation of their collaboration within a constantly developing educational institution – an initiative centre for regional sustainable development processes. Organisation of school activity in such institution helps us create conditions that can be applied in a complex approach (unity of ecological, social and economic effects in school organisation), principles of regionalisation (local character of globally-oriented changes), and inclusive participation (democratic transformations in processes and procedures of decision-making, involving teachers, students, their parents and etc.). All of these processes take place within a system of school and socially-active (extracurricular) activity of school community participants. Local Agenda 21 then can be defined as a mechanism needed to develop necessary conditions for that at school. Realisation of projects within Local Agenda 21 can help realising methods of action-learning though support and development of initiatives led by members of the school community. The projects also create a system of professional development for educators and widen professional competence of educators in the sphere of organisation and realisation of educational processes for sustainable development at school.

## SECTION 4: EDUCATION FOR SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION

Paper presentations

### **Levels, Criteria and Indicators of the Development of Music Teacher Programme Student's Reflective Activity in the Context of Sustainable Development**

**Jelena Davidova, Tatjana Minakova**  
Daugavpils University, Latvia

Orienting towards sustainable development of the society, one of the central problems is the problem pertaining to the development of a teacher into a creative personality with his/her individual style of activity and thinking. This cannot be achieved without a continuous and systematic professional perfection, without reflective activity. A low level of reflection is often related to being unaware of difficulties in the pedagogical activity both in the field of the study process projecting and in communication with the learners. The aim of the research is to determine theoretical basis, levels and criteria of the development of music teacher's reflective activity in the context of teacher's sustainable development.

**Key words:** reflection; sustainable development; critical thinking; self-regulation; levels; criteria and indicators of the development of student's reflective activity.

## **Sustainable Development in Environment BSc in Hungarian Higher Education**

**Imre Kárász, Gyula Lakatos**  
Institute of Environmental Institute, Hungary

Hungary is joined to the so-called Bologna Programme resulted in the structure of the higher education that was changed basically in 2005. On the environmental training field the following majors were established: Environmental BSc – Environmental Science MSc – Environmental PhD School, which were started with more specialisation fields in 2006. The authors have examined the state of training and the curricula in nine Hungarian higher education institutions, according to the form and number that the sustainable education has in the curriculum. Results from above that education for sustainable development appears and will appear on the one hand as direct subject and on the other hand as integrated into different subjects or in the so-called cross-curriculum form. The curricula of several institutions contain more subjects that partly contain in their view or completely prepare for sustainability.

**Key words:** Environmental BSc; sustainable development; Hungarian higher education; curriculum.

### **Teaching the Environmental Effects of the Application of Water Energy**

**Adam Kiss, Maria Szabo**  
Eötvös Lorand University, Hungary

The reliable energy supply is a major issue in sustainable development. All large scale energy sources have considerable environmental effects. The objective of this work is to analyse the water energy for the benefits and harmful effects connected with its application. The analysis should compare the sources for unit energy supply. The hydropower is evaluated from the point of view of contribution to sustainability. The results of this work indicate that the most important ecological changes of hydropower stations are the effects on the wetland and aquatic ecosystems, phytoplankton, the flora and fauna. There are major effects on the landscape, as the consequence of changing landscape structure, land mosaics, ecological network and corridors. The effects result in fragmentation and isolation of landscape units, which are harmful for landscape ecology and nature conservation. Consequently the role of hydropower should be accordingly presented while teaching sustainability.

**Key words:** energy; harm; environmental impacts; landscape.

## **Environmental Knowledge Assessment of the Students at Debrecen University (Hungary)**

**Gyula Lakatos,  
Szilvia Serra-Páka, Ilona Mészáros**  
University of Debrecen, Hungary

From the semester of 2006/2007 within the confines of the first basic training, the study and fulfilment of the Basic environmental science course became compulsory for all students of the University of Debrecen, Faculty of Natural Sciences. The aim of this subject is to learn the basic terms of environment, to form the environment-conscious behaviour and to establish the approach of the sustainable development. During the semester, students wrote essays on topics that were given suggested for the homework, and then they had two written test-exams. The aim of this lecture is to evaluate the level of students' knowledge on environmental and sustainability issues. On the basis of the obtained results, the authors offer proposals for effective higher education.

**Key words:** environmental science; sustainable education; higher education.

## **Sustainability in Career Development Support in a Regional University Daugavpils University**

**Eridiana Oļehnoviča, Svetlana Ignatjeva**  
Daugavpils University, Latvia

Education policy documents of the Republic highlight the necessity to raise support for career development, especially in higher education institutions. From September till December 2008, a research was carried out to identify the necessity for career support in a regional university. In order to identify the needs of various target groups in the field of career development support, research methodology was developed and approved. Respondents (N=420) were asked to evaluate 30 competences in terms of percentage and determine the level of competences. Respondents mostly emphasised pragmatic competences but not always acknowledged characteristic of sustainability. The results of the research testify that a deeper research of the needs of students, lecturers and potential employers is required alongside with the integration of the issues of sustainability in the study process.

**Key words:** needs; competence; career development support system; sustainability.

## **A Meaningful Context-based Approach to Foreign Language Vocabulary Acquisition at the Tertiary Level**

**Astrida Skrinda**  
Daugavpils University, Latvia

Among advanced learners, the acquisition of vocabulary has long been felt to be a crucial component of communicative competence development. Though there is still the obvious need to widen advanced learners' vocabularies so that they are better able to express themselves and they can cope with the situations that are beyond the customary scenarios. This research determines the effectiveness of the direct acquisition of vocabulary (through memorisation) and the indirect acquisition of vocabulary (through context) and suggests a meaningful context-based approach to foreign language vocabulary acquisition which is aimed at achieving an adequate balance between the direct and the indirect acquisition of foreign language vocabulary. It has to be a holistic process in which the learners both as individuals and in groups can receive maximum opportunity to develop. A meaningful context-based approach to foreign language vocabulary acquisition forms a sound basis for the didactic model of advanced learners' communicative competence development through indirect learning and teaching of foreign language vocabulary. The nucleus of this didactic model is formed by general didactic regularities which determine the structure of the study process organisation. The structure of the model of communicative competence improvement integrates three submodels: the submodel of teaching, the submodel of learning and the social submodel. The didactic model has been elaborated on and approved within an experimental project in higher education. This research provides an in-depth analysis of the results of the experimental project in higher education.

**Key words:** foreign language vocabulary acquisition; meaningful context-based approach; communicative competence; communicative competence development.

## **New Media and New Literacies: Higher Art Education in Latvia in the Decade of Sustainable Development**

**Alnis Stakle**  
Daugavpils University, Latvia

The current discourse of art education provides rich theoretical and experiential base for ensuring learner-centred educational environment. This article discusses contemporary peculiarities of higher art education in the context of the decade of ESD. The article emphasises the role of new media in higher art education reorienting it towards sustainable development, and the relevance of educational process in higher education to learners' needs. The author analyses the situation of higher art education in Latvia, and offers suggestions for higher art educators and study programme leaders.

**Key words:** higher art education; decade of ESD; sustainable learning environment; new media.

Posters

**Sustainable Higher Agricultural Education in Iran:  
Components, Requirements, and Barriers**

**Amirhossein Alibaygi**  
Razi University, Iran

The purpose of this descriptive research was to design a model for sustainable higher agricultural education. The population of this study was the faculty members of the public agricultural colleges and universities in Iran. The main components for integrating sustainability into higher agricultural education were respectively Teaching-Learning process, Operation, Research and Outreach. The most highly ranked items on requirements for integrating sustainability in higher agricultural education identified were management-strategic, environmental-communicational, participation-dynamism, psychological, process, and content requirements. Barriers of integrating sustainability into higher agricultural education were reduced to four main factors that were named as sustainability misconception, low organizational commitment, lack of promoting mechanisms and lack of required resources and context.

**Key words:** sustainability; sustainable development; higher education; faculty members.

## The Concept of a Sustainable Design in the Study Process

**Diana Apele**

Rezekne Higher Education Institution, Latvia

Sustainable thinking designers should do their mite in solution of the problems arising on the Earth – global warming, excess of resource etc. Students and Lecturers of the Department of Home Culture Education of Rezekne Higher Education Institution have decorated creative Christmas interior, they wanted to draw people's attention to the topical problem with the help of this design.

The aim of the research is to inquire preconditions of students as future carriers of a sustainable attitude and facilitators of its development within the study process. The methods used are action research, case study and questionnaire. 45 respondents took part in the questionnaire. The concept of sustainable design will be reviewed through the study aspects. The understanding of the sustainable design is closely related to the process of comprehension in environment, with the ability to analyse, influence them and to develop responsibility.

**Key words:** sustainable design; study process; educational aspects; creativity.

## Development of Students' Research Competence in Higher Education

**Agrita Sala**

School of Business Administration *Turība*, Latvia

The paper is based on the research done as a part of doctoral dissertation. The research was carried out in the School of Business Administration *Turība*. Hypothesis of the research: the development of research competence of students in Tourism studies takes place more efficiently if: the tutor is aware of the criteria of student research competence, leads the research purposefully and is interested in the quality of the result if a model of the development of student research competence is used. The paper highlights some results of this research. Development of students' research competence is affected by professionalism of tutors, by motivation, as well as by the organisation of the study process. When based on the criteria of research competence, the development of research skills builds up effectively.

**Key words:** model of development; tourism studies; student competencies; professionalism of tutors; pedagogical cooperation.

## Critical Elements of Learning for Sustainable Development in Higher Education – a Case Study in the Baltic Sea Region

**Anne Virtanen, Liisa Rohweder**  
HAMK University of Applied Sciences, Finland

The research study constructs a pedagogical approach to promote education for sustainable development in higher education in the Baltic Sea Region. On the basis of the results of collaborative and participative research done with a constructive method together with 30 experts of education for sustainable development in the Baltic Sea Region, the critical elements for education for sustainable development were developed. The critical elements were divided in the following way: context (integrative approach, time perspective and spatiality), mental (value clarification, systemic thinking, critical reflection and motivation building) and activity (partnership, cooperation, communication and participation) related aspects. Using these approaches the outcome of the learning process should be build on competence to promote sustainability of nature, life support and community.

**Key words:** education for sustainable development; higher education; Baltic Sea region.

## Workshop

### „Constructive-Confrontation-Training (Coolness-Training) for Students“ – The Flagship-Project of RCE-Candidate Vechta

**Detlev Lindau-Bank, Andreas Hoenig**  
University of Vechta, Germany

Research and Development are identified as core activities of RCEs (Regional Centres of Expertise). The vision of our RCE “Schutzengel” in Vechta is to build a regional network to cooperate, research, discuss, support and develop Sustainable Development activities together so that, by the end of the UN Decade for ESD in 2014, groundwork will be laid for an educational region “Oldenburger Münsterland” towards Sustainable Development.

To reach this ambitious goal, we concentrate our activities and plans on reorienting existing education and training in vocational schools and the BA Social Work study-program and teacher training at the University of Vechta. We want to provide learning activities to young people with topics like:

- de-escalation skills and conflict solving skills
- Public awareness and understanding; responsible citizenship
- personal empowerment / self responsibility and consciousness
- Environmental protection and awareness
- Intercultural competencies

We want to involve young people in activities on sustainable development as comprehensively as possible.

We want to introduce you to one of our network-activities, the constructive-confrontation training. We will present the concept of our train the trainers-seminars (mostly addressed to students of our University) in the areas of moral courage and prevention of violence.

Often, when we think of confrontation, we think of conflict and anger. But constructive confrontation isn't conflict; it's a structured, systematic approach to decrease conflicts and increase accountability. Constructive confrontation is the strongest tool available to ensure self-confidence, responsibility and social awareness.

**Key words:** Regional Centre of Expertise; sustainability; de-escalation-skills; conflict-solving-skills; constructive-confrontative training-methods; prevention of violence.

SECTION 5: ORGANISATION OF LEARNING ENVIRONMENT IN EDUCATION  
FOR SUSTAINABLE DEVELOPMENT (PRE-SCHOOL, PRIMARY AND  
SECONDARY LEVEL)

Paper presentations

**Development of Secondary School Students' Communicative  
Competence in English in the Context of Education for  
Sustainable Development**

**Inga Gedžūne, Ginta Gedžūne**  
Daugavpils University, Latvia

In this study development of students' communicative competence in English is regarded as a step towards highlighting the context of sustainability in language learning, since communicative competence gives a practical orientation to the acquired knowledge and skills, enabling students to use the language for meaningful interaction, education and career. The research represents a small case study carried out with an aim to determine the means of addressing students' communicative competence at upper-intermediate level of English language learning. Proceeding from qualitative and quantitative analysis of data obtained through observation and questionnaire, the authors describe a set of communicative activities aimed at promoting the development of secondary school students' communicative competence in English and highlight the need for a sustained and purposeful research of students' current level of communicative competence in order to address the skills that constitute students' communicative competence and are relevant for students at a particular time.

**Key words:** communicative competence; communicative activity; English language learning; secondary school students; education for sustainable development.

**Studying and Forming Learning Environment in a Technical  
School**

**Natalja van-Gejeka**  
Daugavpils University, Latvia

In this study, the author summarises the situation of the state of learning environment in technical schools in Latvia with the use of interview, questionnaire and the test of uncompleted sentences, reactive allot and vector modelling introduced by A. Yasvin (Ясвин), and defines the main directions for improving it in a group of young learners.

The results point to a necessity for reorganisation of learning environment in technical schools. Using the vector modelling introduced by A. Yasvin (Ясвин), it is possible to conclude that a dominant sector of learning environment in Latvian technical schools is dogmatic (34%) and career oriented (33%), whereas a creative sector occupies only 7% before the experiment. In accordance with this, the author suggests to design and implement an integrative approach to teaching technical subjects in technical schools within the use of team work.

The design of an integrative approach in the framework of a particular subject (building constructions) and analysis of the results of its approbation will comprise the content of further research in this sphere.

**Key words:** learning environment; technical school; young group; integrative; team work.

## Assessing Language Development in Bilingual Education Programmes: Challenges and Opportunities

**Ligita Grigule**  
Daugavpils University, Latvia

Nowadays piloting and evaluation have a central role in the educational reform process. What principles should guide the design of appropriate assessment instruments to serve both aspects – to value every child's individual development and to provide the stakeholders with valid and feasible data? The conclusions are based on class observations, stakeholders' surveys, Pupil's language portfolio and formal language tests designed within the Multilingual Education Project in Georgia (2006 – 2008). Data indicated the raised motivation and activity to language learning as one of the gains of the project. Language tests prove a faster language development in pilot schools' pupils compared to their peers. The author suggests the principles for assessing language development in culturally and linguistically diverse children and necessity to take into account the entire educational environment.

**Key words:** multilingual education; assessment; language portfolio; training.

## Integration Perspectives of Formal and Non-formal Education for Development of Students' Research Skills

**Olga Grišāne**  
Daugavpils University, Latvia

Implementation of general secondary education programmes permits to promote understanding of the principles of sustainability among students, creating a school environment where students acquire knowledge, develop skills of their application and form practical experience. Implementation of sustainable education in a specific educational institution needs to be viewed as integration of different opportunities for reaching a common goal.

The aim of this study is to identify conditions for the experience of integrating formal and non-formal education in a particular educational institution (state gymnasium), thus creating an environment of academic optimism that promotes development of students' research skills. Research approach is viewed in the context of sustainable education.

The supply of formal education is treated in the following aspects: (a) development of research skills during acquisition process of school subjects; (b) development of self-evaluation skills during teaching-learning process. School lessons display interaction among educational content, mutual influence in the group, trust and teaching-learning activity, which develop research skills.

Opportunities provided by non-formal education are viewed in the context of (a) tendencies of selecting research approach among students (Grišāne, 2006, 2007, 2008) and (b) self-evaluation of students' scientific research skills. Opportunities provided by non-formal education promote development of teachers and students' individual/collective frames of reference regarding the principles of sustainability in the context of research experience.

The article analyses data obtained: (a) during observed lessons and (b) from survey results of students' self-evaluation of their research interests and skills.

## Formation of a Sustainable Attitude in Nature Study Subjects in Primary School Learning Environment in Latvia

**Dzintra Gulane**  
Daugavpils University, Latvia

The aim of the research is to evaluate conditions promoting or obstructing the development of a sustainable attitude in primary school learning environment in Latvia. The theoretical points are based on interpreting different views of various foreign and Latvian authors describing the role of the environment in the process of formation of a sustainable attitude in nature science subjects. This research offers conclusions based on problems of specifics of nature science subjects, mentioning reasons for students' motivation to master nature science subjects, emphasising the role of interaction in the learning environment by promoting formation of a sustainable attitude as well as being able to reorient their individual attitude towards a sustainable attitude.

**Key words:** sustainable attitude; standard and suggested programmes; peculiarities of nature science subjects; learning environment.

## Conditions of Promoting Individualised Learning Process for Primary School Children with Learning Difficulties

**Vija Guseva**  
Daugavpils University, Latvia

Learning difficulties today are seen as real, objective difficulties for students, which can become a reason for learning problems in one or several subjects. Failure in the learning process points to the lack of basic knowledge and skills because a student has difficulties to understand, remember and use knowledge in practice.

The article reflects the analysis of the peculiarities of learning process for children with learning difficulties in the context of sustainable development: universal, individual, and social.

There were 102 primary school children and 44 teachers as the research participants. The author has conducted a questionnaire and a case study.

The article points to the following aspect: if in the learning process the teacher respects individual peculiarities of primary school children, by fostering their development, the following trends can be traced:

- -the peculiarities of individual approach within the framework of learning process;
- -teachers' understanding of the conditions of organising the educational process;
- -teachers' self-evaluation of reflective function - how the achievements can be used for enriching the educational process.

**Key words:** learning difficulties; individualised learning process; learning technologies.

## Teachers' Competency in Doing Research with Primary School Children

**Dzintra Iliško, Svetlana Ignatjeva, Ilona Mičule**  
Daugavpils University, Latvia

The current study highlights teachers' competency in doing research with primary school children. The role of the teacher as a researcher involves re-positioning oneself in relation to what one is expected to do in one's job. The research reflects a small case qualitative pilot study of benefits and constraints that teachers face while gaining awareness of themselves as active and critical researchers with primary school children. The authors offer suggestions for optimising teacher training programmes by developing teachers' research mindset, research skills, confidence and abilities to articulate a critical response to policies affecting their practice. Teachers act as researchers when inquiry becomes a state of mind that allows teachers to be intrigued, interested and wanting to find more about what is going in their classrooms.

**Key words:** teachers as researchers; inquiry; doing research with children.

## Analysing "Children-Playground-Play" Metaphors Based on Turkish Pre-Service Teachers' Views

**Abdülkadir Kabadayi**  
Selcuk University, Turkey

Play challenges creativity and problem-solving for children. This study aimed to determine and scrutinise the metaphors related to "child-playground-play" metaphorical images of pre-service teachers via their self-generated metaphors on children's play activities. After metaphor generation procedure in the first step, 120 participants were asked to explain 23 metaphors in the instrument to collect the study data in the second step. The raw data handled from the documents were analysed and interpreted by "content analysis" technique. As a result of the study, the pre-service teachers' metaphorical images were found to be as 48% Cognitive, 35% Behaviouristic and 17% Socio-Situative Approaches. It is also suggested that there is a shift from instructive-centred to constructive-centred tendency in children's plays from pre-service teachers' lenses.

**Key words:** children's plays; play metaphors; pre-service teachers; instructive learning; constructive learning.

## Interaction of School and Family in the Question of Prophylaxis of Correct Posture of Younger Pupils

Irina Kazakevicha, Sergejs Chapulis  
Daugavpils University, Latvia

Posture is a complex indicator of children's state of health, and minor functional disturbances can lead to steady deformations of posture–motive organs and grave consequences. Therefore, early prophylaxis of posture disturbances is an important medical, pedagogical, social and economic problem. Family is the main link in this chain. In order to solve the educational problems concerning the question of formation of correct posture, it is necessary to organise interaction of school and family on the basis of active approach, that would involve parents into subject-to-subject activity using the forms of interaction that demand energetic actions from the participants of the process, which are directed towards self-study and self-improvement. However, the acquirement of knowledge is an initial stage in the system of formation of a healthy lifestyle of a child. The next step in the solution of studying tasks is the formation of abilities, skills and habits that form the correct posture.

**Key words:** correct posture; school; family; knowledge; interaction.

## Concepts, Problem-solving and Environmental Awareness at the Primary Level

Beáta Kosztin-Tóth, Ibolya Markóczi-Revák  
Debrecen University, Hungary

Education has a crucial role on our way towards sustainability. Real change can be reached only if people can do for and even want to do for the environment. According to Agenda 21. (Rio de Janeiro, 1992), education has to develop and improve environmental awareness and has to form social values, attitude, skills and behaviour connected to sustainable development. In this study the authors explore whether acquired knowledge – scientific concept forming, problem solving – of the pupils in class 4 at the primary level influences their environmental awareness. The authors made an experiment with the Rostock Model where suitable learning surroundings were provided so that pupils could be more successful.

**Key words:** scientific concepts; problem solving; environmental awareness; sustainability.

## Home-school Interconnection, Photography and Sustainable Education

**Raili Lehtolainen**  
University of Helsinki, Finland

In hermeneutical case studies in pre-school and elementary school environments, the author's focus has been on handling ordinary life information, individual views, patterns of knowledge and understanding of the world in the process of teaching in schools. Constructive ideas of respondents at home have been tied to the curriculum in school. The results of practices indicate that the home-grown information and expressions can be connected to the functions of school and curriculum. Sustainable education can be built between children and adults at home and at school. Learning to know and care for others is crucial for sustainability. Home-school interconnection increases motivation, reflective discussions and approval among all actors. Working as a teacher educator in visual arts, the author has tied the home contexts in the processes of photography and learning.

**Key words:** home-school interconnection; photography; sustainable education.

## Characteristic of Distributed Leadership in Management of Latvia's Schools of General Education

**Inese Lusena-Ezera**  
Liepaja University, Latvia

The article focuses on distributed leadership and its main aspects in school management: school staff collaboration and team work. The analysis and results of the empirical study in general educational institutions of Latvia are explored. Research sample consists of 199 school principals which were selected using a stratified sample method. The study provides the answer to the question: is the action of schools oriented towards involvement of the school staff in the management process and application of team work principles? Results of the study indicate that in most cases school principals support involvement of school staff in school management and use team work principles, however principals have different opinions about school staff interaction, school staff clarity about school strategic purposes and school vision. The study also identified the need to improve trust among school staff and promote school staff consensus about school purposes and their role in its achievement.

**Key words:** distributed leadership; school, team; involvement; management.

## **Improvement of Skills for Sustainable Development in the Primary School**

**Ibolya Markóczi-Revák, Beáta Kosztin-Tóth,  
Ilona K. Schneider, Franz Oberlander**  
Debrecen University, Hungary

One of the most important conditions for development of environmental awareness beyond emotional, motivational factors is improving social and cognitive abilities from early childhood. Our study examined five first grade classes in Germany and Hungary to determine the learning processes children require to develop concepts of environment. Qualitative evaluation of the results was achieved by conducting a comparative analysis based on the Grounded Theory. The authors stress that in the context of classroom instruction, the children's knowledge about the location of water and their cognitive concepts about water pollution developed in a lasting and sustainable manner regardless of their nationality or school. The learning method was successful in sustainability of acquired knowledge and development of cognitive concepts as well.

**Key words:** concepts; comparative analysis; Rostock model.

## **Students' Reflection on Being a Teacher at Primary School: Fieldwork Experience**

**Ilona Mičule, Dzintra Iliško**  
Daugavpils University, Latvia

The article discloses the 3<sup>rd</sup> and 4<sup>th</sup> year students' experience on being teachers at primary school during the study process in the programme of "Primary school teacher", Daugavpils University, Latvia. Essay data analysis reveals students' fieldwork experience (2006-2009) on their role as future teachers and gives insights in promoting the study process and students' school practice. Recommendations for improving the quality of student teachers' fieldwork are suggested and the dimension of sustainability is considered in evaluating students' school practice experience and teacher education.

**Key words:** fieldwork; student teacher; teaching skills; sustainability.

## Schooling of Children in a Tribal Setup: Perception and Reality

**Shilpi Mishra**

International Institute for Population Sciences, India

The objective of the study is to comprehend reality of schooling of children in a tribal setup. In 327 households, fathers having a child of age 6-14 years were interviewed and focus group discussions were conducted in tribal districts Jhabua, Madhya Pradesh, India. Uni and bi-variate techniques are used for the analysis. The results indicate that almost all fathers think that education is vital, still, in 42% families at least one child has never been to school and 11% of families are with at least one dropout. Girls are often denied schooling experience with notion that education and cost involved is unproductive investment. Significant proportion of illiterate fathers with 6-8 family members perceived that the number of children affect children's education. The authors conclude that disparity is measured in perception and ground reality of schooling of children. Community participation is entailed to sustain education in tribal setup.

**Key words:** schooling of children; perception; tribal setup; sustainability; community participation.

## Self-regulated learning environment in classes in secondary school

**Iveta Nikolajeva, Elfrida Krastina**

Daugavpils University, Latvia

To realize principles of sustainability in a secondary level, learning process should be more orientated to society and integrated into it, offering students the activities which enable them to think and cooperate, which are aimed at gaining knowledge and skills and students' motivation. There should be accent put on developing such skills as self-evaluation, planning, making decisions, creating strategies and self-control. These are skills necessary for students to be creative and sustainably thinking, i.e., could get involved in self-regulated studies and able to perform research.

The subject of the research is learning environment.

The hypothesis: in well-organized learning environment students develop their self-regulation skills and research skills.

In this article we will analyze the notion "self-regulation" and find out how learning environment promotes the development of self-regulation and research skills.

In the action research we will evaluate students' research and self-regulation skills, find out students' weak and strong points in doing research work and will investigate how these skills can be developed in learning process.

**Key words:** learning environment, self-regulation skills, research skills, planning, learning strategies, self-control.

## Figurative Insight in Spiritual Pedagogical Background

**Baiba Reinberga**  
Daugavpils University, Latvia

The research presents an innovative view on the figurative insight in the context of language philosophy. The aim of the research is to explore how the use of the figurative insight enriches pedagogical process and leads one's creative thinking to the personal growth, thus giving the opportunity to advance in thinking. The figurative insight developed in the spiritual environment as the aspect of scholar's, student's or pedagogue's personal perception connects thinking, language and knowledge in art subjects with the personal sense of life and promotes ethical perception of the world. This way, a teacher becomes a dynamic element of a self-designed environment. Thus, the achieved result allows the teacher to use the three-dimensional vector model of language – direct, notionally philosophical and imaginatively figurative.

**Key words:** figurative insight, spiritual pedagogical process, a model of language dimensions.

## Facilitating Motivational Strategies in the Foreign Language Classroom

**Liljana Skopinskaja**  
Tallinn University, Estonia

The objectives of the report are to seek for the ways how to motivate reading authentic materials in a foreign language. The hypothesis is that when authentic materials are used, the levels of on-task behaviour, overall class and self-reported motivation should increase. The methods comprise questionnaire study conducted among teachers with the aim of exploring their views on motivational strategies in reading, and a case study carried out at the secondary school. The questionnaire study revealed teachers' preferences in the use of reading strategies and the corresponding motivational strategies. The case study indicates that although the learners' motivation to read media was low, the learner self-reports referred to a rise in motivation. The study presents guidelines on how to stimulate learners' motivation to interpret media publications.

**Key words:** foreign language teaching; learner motivation; motivational strategies; reading instruction; newspaper materials.

## **Sustainable Development of Slovenian High Schools through the Use of ICT**

**Srečo Zakrajšek, Peter Purg**  
Institute of Environmental Institute, Slovenia

The study analyses the problem of underequipped high schools as compared to European standards, and according to the needs of contemporary pedagogical practices. Over a decade of constant quantitative and qualitative empirical inquiry offers an abundance of local data for a differentiated analysis of the problem, this is to be complemented with additional comparisons of European-level data. Results show a close interrelatedness of several components of the education process of which lack of adequate equipment is surprisingly one of the most problematic issues. This is because an objective-and competence-oriented curriculum system as well as an ICT-savvy society both demand constant renewal and development of hardware resources. A constant updating and development model of ICT resources especially in terms of hardware would be a major benefit to the Slovenian high school realm and beyond.

**Key words:** ICT; high schools; equipment; hardware; resources.

## **Reading Literacy Development of 5-6 Year Old Children**

**Sandra Zariņa, Inga Belousa**  
Daugavpils University, Latvia

In the context of compulsory education for 5-6 years old children the issue of reading acquisition is one of the fundamental concerns for both, pre-school teachers and parents. This article examines methods of reading acquisition frequently applied in pre-school, discusses the situation and teachers' view of reading acquisition in pre-school in Latvia and provides suggestions for reading literacy development of 5-6 years old children based on the keystones of sustainable development. The article is a contribution to construct a theoretically grounded and sustainable model of reading acquisition for 5-6 years old children that meets global educational challenges and Latvian local needs.

**Key words:** pre-school; reading literacy; reading acquisition; holistic approach; sustainability.

## Changes of Teachers' Role in Education for Sustainable Development

**Vaiva Zuzeviciute,  
Monika Miliusiene,  
Audrone Alechnaviciene**  
Vytautas Magnus University, Lithuania

The contemporary world is characterised by insecurity, unpredictability and sometimes marginalisation. The concept of sustainable development has become a comprehensive regulative idea in our contemporary world. The purpose of the study is to present findings about the perceptions that teachers have on their changing roles in the context of sustainable development. Methods of critical and comparative sources analysis together with semi-structured interview were employed. The empirical study was designed and implemented as one of the stages of a longitudinal study, carried out as the activity of participating in the project "Strategies for inclusion and social Cohesion in Europe from Education" No.FP6-028603-2(Integrated project, VI Framework Programme), coordinated by Barcelona University. The analysis reveals that teachers in Lithuania tend to act as representatives of enhancing subculture.

**Key words:** sustainable development; globalization; teacher's role; contemporary world; culture.

## Posters

### The Level of Physical Training of Pupils in Multi-discipline Sports as a Factor of Mastery of Sport

**Valentina Maklakova**  
Daugavpils University, Latvia

The paper will focus on sustainable aspects of physical training of athletes in sport schools. The analysis of level of physical preparation according to test results acquired indicates to the possibility of developing physical skills by the use of methods of physical upbringing. Training of these qualities will give the possibility to increase mastery in sport. The method of testing has been used for determining of level of physical preparation of pupils. The author emphasises the idea of holistic upbringing of pupils. It highlights the importance of developing not only physical skills but also focuses on a holistic development of the person.

**Key words:** methods of control; physical preparation; testing.

## Value Education in the Folk School in the Context of Education for Sustainable Development in Latvia

**Ojars Rode, Elfrida Krastina**  
Daugavpils University, Latvia

In our contemporary society, it is essential to help the child to evaluate different opinions and to develop one's value system. Value education is closely connected with the spiritual, moral, social and culture development of the society. During the time frame of 16 years in private folk school "Drusti" in Latvia, there is a strong tradition of developing value oriented learning environment. The teachers involved in the folk school develop pupils' inner motivation in developing their value system and the life style according to chosen value system.

In order to evaluate the influence of value oriented learning environment on pupils' system of values, the authors have conducted a qualitative study. The authors analysed observation data, the content analysis of children's creative works, questionnaire and unfinished sentences.

The authors reveal how a value oriented learning process influences value orientation of children in the context of sustainability perspective: social, culture, ecological, value aspects.

**Key words:** sustainable development; sustainable education; culture; social; ecological; value aspect; value education; value oriented educational process.

## Motivating Factors for Intermediate Level Students in Art Education

**Anna Vilcāne**  
Daugavpils University, Latvia

Cultural issues in Europe and Latvia have promoted society's interest in the study of artistic activity in the process of personality development. Contemporary art education deals with the most important problem – the development of student's creative potential, basing on personality orientated study process, also promotes artistic education of the entire society. A special notice is given to motivation's perfection, which states the character and peculiarities of the study process. There is a great difference in students' motivation for studies. So it is very important to find the causes, and thus help students be guided towards motivated actions.

At the same time, the art education environment must include elements of sustainability for students to be more motivated and to better understand the necessity for art studies.

The conclusions are based on the environment and tendencies of intermediate art education, on students' motivation in this area and on the role of the pedagogues in the process of art education in the context of sustainability.

**Key words:** sustainability; environment; motivating factors; art education; creativity.

## Workshop

### **Formation of Key Competences of Students as a Condition for Effective System of Sustainable Development Education at School**

**Sofia Savelava**

Youth International Education Club NEWLINE/  
Academy of Post Graduate Education, Belarus

“Subjectness” and permanence are two indicators of educational practices for sustainable development. Situation of sustainable development demands from a person to form an original model of responsible behaviour through obtaining new competences of an “acting individual” able to become an agent of change in everyday life activities. In this context, the most perspective way to obtain this model within school environment is seen through organisation of key practices for students who with this strategy are being included into “invariant” spheres of subject’s activity (such as Me-Me, Knowledge and Me, Activity and Me, Other People and Me, Society and Me). The main condition to successful organisation of these key practices is their initiative and activity. The basic method is project-based learning, which enables students to gain experience of collaboration with themselves, their opportunities, partners, social norms and everything else that makes them active in society. The leading mechanism then is seen in creation of a system for effective support and stimulation of student initiatives, development and realisation of projects led by participants of the youth-adult educational community working within school and extracurricular activities held at educational institution.

## SECTION 6: **EDUCATION FOR SUSTAINABLE DEVELOPMENT AND SOCIAL WORK**

### Paper presentations

### **The Role of Agricultural Counselling Centres in Implementation of Sustainable Development of Rural Areas in Poland**

**Piotr Prus, Radosław Sztuba**

University of Technology and Life Sciences, Poland

The last few decades brought an increase of agricultural production efficiency. However, it often caused environmental threats. This unfavourable situation affected creating the idea of sustainable agriculture and rural areas development. The complexity of the concept caused substantial problems with its understanding by farmers. Therefore there was an extremely important role of agricultural counsellors in implementation of that idea. To verify the assumption that agricultural counsellors played a great role in implementation of sustainable development of rural areas in Poland, two surveys were carried out among farmers (in 2002/2003 and 2008). The research revealed that Polish farmers were taking advantage of the counsellors’ knowledge and valued their professional services very high. The counsellors played a significant role by planning sustainable agricultural production, as well as helping in applying for financial support from the EU designed for ecological actions on rural areas.

**Key words:** sustainable development; rural areas; agriculture.

## **Interdisciplinary Cooperation as Strategy for the Changes of the Curriculum: The Case of Art Teacher and Social Worker Education**

**Nijole Veckiene, Sigita Sauleniene**  
Vytautas Magnus University, Lithuania

The study analyses the possibilities for developing interdisciplinary cooperation competencies. The investigation began with the analysis of the role of art teacher and social worker working in the Child Day Care Centre. The object of the study is the changes of the aims in the curriculum of the education of art teachers and social workers. The objectives are: to generalise the results of the qualitative investigation of the attitudes and knowledge of art and social work students that are relevant for working in the interdisciplinary team, to perform the analysis of the aims of the curriculum, to substantiate the changes in the studies oriented towards interdisciplinary cooperation. The study is oriented towards the sharing of cultural and social values and different types of knowledge among the art and social work students. The Child Day Care Centre is taken as a learning environment.

**Key words:** social inclusion; values; interdisciplinary cooperation; competency; learning environment.

## Posters

### **Possibilities of Supporting Children with Special Needs as Cooperation between Educational, Social and Medical Fields**

**Tina Kallavus**  
Tallinn University, Estonia

The aim is to prove the hypothesis that many services of Estonian supporting system do not reach the children with special needs and the network-based implementation of the supporting services would create a better base for developing children with special needs according to their abilities. Both qualitative and quantitative methods-based research showed that help provided by the supporting systems does not reach the child with special needs, because there is neither state's supporting system for children with special needs in Estonia that would connect all supporting systems in an effective cooperation network, nor early identification and intervention system. The cooperation between the departments of the government is insufficient and the provided services are not client-based. There is lack of certain specialists.

**Key words:** special needs; supporting system; the cooperation and co-ordination of the network; equal opportunities.

## Perfection of the Professional Competence of Social Workers in the Context of Sustainable Development

**Svetlana Lanka**  
Liepaja University, Latvia

Objectives: to update the problems of the perfection of the professional competence of social workers in the context of sustainable development. Research methods: analysis of literature sources and legal documents; survey, expert interviews. Results: topical problems about the perfection of the professional competence of social workers in the education process and in the view of experts are summarised. Conclusions: competence of a social worker is an integrative concept where its components are particular competences that are inter-related and influence each other. The professional competence is in the process of activity, it develops through acquisition of new knowledge and perfection of skills. Perfection of professional mastery and competence of every student in the social work study programme is the determining factor that facilitates an action based on the results today and in a longer perspective.

**Key words:** social workers; professional competence; sustainability.

## Workshop

### Social Work and Professional Competencies

**Detlev Lindau-Bank, Klaus-Dieter Scheer**  
University of Vechta, Germany

The social work profession promotes social change, problem solving in human relations and the empowerment and liberation of people to enhance well-being. Utilising theories of human behaviour and social systems, social work intervenes at the point where people interact with their environments. Principles of human rights and social justice are fundamental to social work. This international definition of social work (INTERNATIONAL FEDERATION OF SOCIAL WORKERS) takes account of the impact of globalization on social work curricula and social work practice.

The advantage is, it draws a distinction between social workers and non-social workers. Social work with its unique person-in-environment focus can play a key role in international sustainable development efforts.

The disadvantage is, it ignores the national, cultural and regional differences. So we ask ourselves, which competencies social-work-students should acquire to face this global challenge and to contribute to a sustainable development of society? To answer this question, conceptualisations of professional competence in fields of social works will be presented and discussed.

Further we figure out common quality standards concerning Social Work as a scientific discipline as well as a profession. This means to focus on the training of competences, which determines the quality of Social Work and Social Services in general.

In spite of different theoretical discourses, we assume common aspects which describe social work as a unique discipline. Concerning Social Work not as a discipline but as a profession, it is much more difficult to state common models of competences and standards of quality, because the systems of Social Services differ widely.

**Key words:** social work; globalization; sustainable development; professional competence; concepts of competence training; social work as a discipline and a profession.

## SECTION 7: EDUCATION FOR SUSTAINABLE DEVELOPMENT AND E-LEARNING

Paper presentations

### Comparing Server Activity Logs of Latvian Information Networks

**Rudolfs Gulbis**  
Riga Technical University, Latvia

The aim of this study is to analyse the impact of computer lessons available to the public through the Internet and to document the record their use. The measurements are based on the open courseware found in the Riga City Council portal which was created by the Riga Technical University's Distance Learning Study Centre (DESC), using the data from the server log. The Riga City Council server was also used for tracking.

**Key words:** social networks; oriented networks; network types.

## Globalizing E-learning for Sustainable Development in Culture and Education

**George Chidiebere Iheanacho**  
Universitas Sebelas Maret, Indonesia

This paper is to explore the imperative of E-learning for sustainable development in culture and education. Sustainable Development implies integrated application and effective management to enhance capacity based on the principle of sustainability. E-learning as an innovative tool has many benefits in teaching, learning, providing incentives, bridging the gap of divide and realising the goal of technologically-conscious world. The learning mode expands the body of knowledge without recourse to conventional medium. Its impact has encouraged research in education and culture through independent and less cumbersome manner. The problem of accessibility has become a barrier in attaining the level of sustainability, but the experience of E-learning has continued to attract universities and governments in facilitating educational accessibility. This discourse will investigate these issues with the focus on some universities in Indonesia.

**Key words:** learning; sustainable; culture; education; development.

## Mobile Learning for Developing the Competence

**Janis Kapenieks**

Riga Technical University, Latvia

The goal of the paper is to explore the educational options for a personalised, user sensitive mobile learning approach that may be employed “anytime and anyplace.” Mobile learning is usually applied to provide instructions for learning in the real context. The paper analyses how mobile terminals can be used to raise competency levels that can run the gamut from novice to expert. The Paper draws upon the author’s experience in developing three m-learning objects that are flexible and may be adjusted to diverse learning levels and contexts. The author studied means by which competence levels could be increased for both explicit and tacit knowledge. The obtained research results indicate that M-learning methods support promoting the competence. The author concludes that M-learning objects offer valuable assistance to meet everyday needs as well as for vocational training. The new M-learning technology is closely related to the development of student centred learning as a part of education for sustainable development of human resources.

**Key words:** E-learning; cognition; mobile learning; competency; ESD.

## Motivating Factors in Online Courses

**Selvi Kıymet**

Anadolu University, Turkey

This study aims to determine the factors that help to increase students’ motivation in an online course conducted by the researcher. In this framework, the opinions of the course students regarding which factors increase the motivation of students and what to do for increasing motivation were asked. The opinions were collected via a written form and content analyses. The opinions were gathered from 60 PhD students attending an obligatory interactive and virtual PhD course in 2007-2008 and 2008-2009 academic years. Opinions were collected via two questions directed to students who attended six virtual class applications in three different terms.

**Key words:** online course; E-learning; virtual classroom; motivation; interaction.

## Hidden Pedagogical Challenges for the Teacher in E-learning

**Sirje Klaos**  
Tallinn University, Estonia

The author of a course can choose learning methods and learning strategies. In case of need, they will also be ready to solve problems that unavoidably come with e-learning. These are hidden pedagogical challenges. The aim of the present study was to find out:

- whether and how teachers detect the originality or plagiarism (Copy/Paste method) in Internet based environments,
- how it is tried to balance individual and collective work,
- whom does reflection and reflective thinking belong to – the teacher, the student or both?

Thus, the given topic still provides material for discussion and consideration for many instructors of e-learning courses. The author would like to ask how often one gives meaning to one or another activity in Internet based environment. At the same time the author sees that exchanging experience helps to create new and innovative approach for applying better pedagogical methods ever.

**Key words:** E-learning; teaching methods; pedagogical challenges.

## Making Hypermedia Technology an Integral Part of Teaching and Learning for Sustainability: The Learning Power of the WikiQuESD Approach

**Vassilios Makrakis**  
University of Crete, Greece

This paper is about a newly advanced concept “WikiQuESD” that could be utilised as a scaffolding hypermedia tool to enhance pre-service teachers’ ESD project-based learning. Qualitative methods (journals, focus interviews, participatory observation) were employed to reveal its effectiveness among 30 pre-service teachers attending an undergraduate course. The new Wiki collaborative learning platform allowed pre-service teachers to design and upload interactive ESD projects online through collecting, assessing and integrating digital material available in the Web. They could also brainstorm, share and discuss their project ideas, while the instructor could make comments and monitor the development process. These results imply that the learning power of the WikiQuESD and Wiki technology in general can transform teachers from software users to hypermedia authors.

**Key words:** hypermedia; Wiki; education for sustainable development.

## Sustaining Positive Motivation and Credit Value through Blended Learning

**Peter Purg, Srečo Zakrajšek**  
Institute and Academy of Multimedia, Slovenia

Based on empirical study and combining key perspectives of student, teacher and school manager, a course design is defined providing balance between student workload and positive motivation. A two-year complex inquiry on how students perceive new-media and web-based approaches to blending traditional (class-presence) and online study is discussed from the (other two stakeholders') perspectives of a teacher and a school manager. It is confirmed that blended approaches to teaching and learning such as LMS-integrated forums, blogs and wikis, or multimedia and a/v techniques, increase both the hour-per-credit value of a course and student satisfaction. Still, some specific phenomena are perceivable and several sustainability issues arise. Thus, the authors conclude that correctly designed ICT-based teaching and learning methods motivate students for reaching higher course-defined competence with less perceived effort.

**Key words:** blended learning; new media; motivation; workload; Moodle.

## Local Media and Consumer Behaviour

**Jozef Szabo**  
Debrecen University, Hungary

The Debrecen Television as the most important electronic media of the region works on the PR and on the orientation of the project of the suage system of Debrecen and its neighbourhood and the project of Damage prevention Debrecen Airport since 2007. Its main goal was that the inhabitants, the enterprises and the civil sector should get important information. At the beginning there was a willingness to join the project around 90%, after the champagne it increased to 97 %. Together with this the willingness to pay for it raised from the original 70 % to 90 %. All this shows that development of environmentally conscious consuming is such a complex task that the organisations are needed for professional people that can articulate the message according the needs of the targeted market.

**Key words:** electronic media; suage system of Debrecen; raised willingness; complex task; professional people.

## Development of Competencies by Playing Games and Using E-learning

**Dzintars Tomsons, Alida Samuseviča, Vineta Tomsone**  
Liepaja University, Latvia

The paper argues that educational games are efficient means for the development of learning competencies. The paper describes the potential of applying computer technologies to promote interactive learning environments to support learning retention and application. The authors analyse a case study of using a digital game aimed at developing project management competencies. The paper analyses the use of the simulation game as well as the effectiveness of some of the learning approaches and tools available in the e-learning environment. The results of the study indicate that the teaching and learning power of educational games is productive for development of professional competencies in higher education. They promote students' cognitive activities and create additional motivation for learning. The authors also conclude that more experienced people, for example graduated students, are more oriented towards active learning, such as provided by digital game, than undergraduate students.

**Key words:** competencies; educational games; E-learning; higher education; teacher's role.

## Knowledge Management Model to Facilitate E-inclusion

**Ieva Vitoliņa**  
Riga Technical University, Latvia

This paper addresses the ICT gap. The progress report of the European Commission indicates that the targets of the e-inclusion declaration cannot be reached by 2010 and have been delayed. This paper investigates the reasons for the delay and what factors would promote reaching the deadline at an earlier time. This investigation is based on the Enterprise Knowledge Development (EKD) model that provides the advantage of structuring the research and collect knowledge from a variety of sources that may be successfully applied to the investigations of this model. Moreover, the EKD model has the advantage of creating new knowledge. The paper seeks to identify and categorise the major obstacles for overcoming the ICT gap as well as the most significant factors that promote overcoming it. Furthermore, the designed e-inclusion model is usable for further modelling of other e-inclusion processes and supports sustainable e-learning development.

**Key words:** E-inclusion; EKD; ESD.

## **IES Campus a Multimedia Learning Management System for Cultural Diversity in Higher Education Space**

**María Dolores Afonso Suárez,  
Cayetano Guerra Artal,  
Francisco Mario Hernández Tejera,  
Javier Lorenzo Navarro**

Universidad de Las Palmas de Gran Canaria, Spain

New technologies are a reality that takes part in a wide variety of aspects in our daily life. On these grounds, the increase in the use of new technologies experienced in education must be tackled by planning activities such as declaring the choice of learning tools, the type of contents, and the periods of their implantation, including phases of adaptation and research of results. Multimedia Learning Management Systems are viewed as teaching tools to integrate sustainability topics in the classrooms.

The present work points to the experience acquired in the development of a multimedia learning management system whose implementation and use will be developed through different phases in various Secondary Schools in Las Palmas de Gran Canaria. An extension of the project PROMETEO has been developed as an initiative promoted by the "Quality and Educative Innovation Vice-chancellorship" of the University of Las Palmas de Gran Canaria.

**Key words:** learning management systems; screencast; video player; interactive software applications; multimedia contents.

## **Prometeo, Towards a Learning Management System for Cultural Diversity in the University**

**María Dolores Afonso Suárez,  
Cayetano Guerra Artal,  
Francisco Mario Hernández Tejera,  
Javier Lorenzo Navarro**

Universidad de Las Palmas de Gran Canaria, Spain

With an audience increasingly demanding, used to the new technologies and, therefore, with a very different profile in comparison to those of past decades, universities should contemplate how to tackle the development of high quality educative content. Contents will have to make use of new technologies and will be adapted to new learning methodologies. These technologies give the possibility to access students of those countries with difficulties in accessing education, fundamental basis to help developing countries. This way, how to cover students' needs could be planned. Creation of educative multimedia contents implies the structuring of this process, which becomes necessary due to a wide range that could be found within a lesson module and to the number of resources needed. This paper highlights the experience acquired in designing different educative multimedia contents.

**Key words:** E-learning; video player; interactivity; educative contents; multimedia contents.

SECTION 8: **EARTH CHARTER AS A FRAMEWORK FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT / EARTH CHARTER YOUTH INITIATIVE AND MULTICULTURAL APPROACH TO EDUCATION FOR SUSTAINABLE DEVELOPMENT**

Paper presentations

**Education for Sustainable Development within the Formal Curriculum in Costa Rica: The Example of Earth Charter Materials in Primary Schools**

**Marcos Estrada de Oliveira**  
Brazilian Institute of Education for Life, Brazil

This paper looks at education for sustainable development in public primary schools in Costa Rica that used a material elaborated by the Earth Charter and its partners. A group of ten schools was selected in different areas of the country, each school was visited and teachers were asked to complete two questionnaires, one based on the 'Quality Criteria for ESD-schools' developed by Environment and School Initiative and the other questionnaire from the Earth Charter. The primary data were subsequently analysed in two ways, both qualitatively and quantitatively. The results indicate the value of the 'Quality Criteria for ESD-schools' as guideline and the Earth Charter to enhance education for sustainable development, which can be used in different contexts. It demonstrates the significance of education for sustainable development material in the formal curricula, even in schools that promote it without naming as such.

**Key words:** education; sustainable development; Earth Charter.

**Integrated Approach to Implementation of the Principle of Sustainability in Preschool**

**Solvita Raga**  
Daugavpils University, Latvia

The goal of the project: Investigation of specific character of the use of integrated approach in preschool education process. Questions examined in the Project: How the three directions of sustainability integrate in themes of the week in preschool? How can a preschool teacher introduce sustainability in one's work? What is a preschool teacher's understanding of sustainability? The following research methods were used: questionnaire of preschool educators and children's parents; observation. Questionnaire helped to establish if the preschool educators are competent in the field of sustainability and if they apply the principles of sustainability in their work with children. A set of play lessons that included all principles of sustainability was used in the research. The use of games to accustom children to think and to watch the world from the viewpoint of sustainability is already practised in preschool. The data are obtained in a preschool of Daugavpils with 24 children in preliminary group, children's parents and 28 preschool teachers involved. The results of the research reveal the real situation in preschool and suggestions are offered about what can be done to improve the situation.

**Key words:** sustainability; integration; global education; preschool.

## **Global Citizenship for Sustainable Development**

**Dmitry Savelavu**

Youth International Education Club NEWLINE/  
The Earth Charter Youth Group in Belarus, Belarus

When talking about global citizenship as well as defining its correlation with sustainable development processes both regionally and globally, it is necessary to clarify the meaning of this term from the perspective of one's civil position, cultural identity, external situation in a region and the world and those legal frameworks that allow us to call this self-determination "citizenship". We can generally define global citizenship as the commitment to global values embedded in local activism. Becoming a global citizen then makes it a major condition to successful realisation of sustainable development processes. However, it is important to agree whether citizenship is defined solely within legislative framework realised supranationally, or if it is a civil position that plays a crucial role. If so, in our attempt to find a place for global citizenship in sustainable development, we need to define what qualities make us functional in both processes and what skills and knowledge are needed for a person to become a global citizen.

**Key words:** global citizenship, citizenship, postmodernism, cultural identity, youth-led development.