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Abstract. *The establishment of a new personal approach and a current position on environment are the concerns of the scholars and educators in the majority of countries. Natural sciences on their own, although spreading broad but abstract knowledge of the world do not foster values and provisions essential for sustainable development education. In order to discover the ways and the scope of how sustainable development education has been introduced into educational programmes, the curricula of Bachelor and Master's studies of the University of Klaipėda, the University of Šiauliai and Mykolas Romeris University have been revised. Assessment of postgraduate studies including the surveying of the staff dealing with the above mentioned curricula has been undertaken. The article discloses the issues relevant to higher education in Lithuania when encountering the problems of sustainable development education and takes a view on possible techniques of education as well as on the innovations of the curricula. The project-based technique applied for sustainable development education is a new, non-traditional way creating new opportunities of building up relationships between a student and an educator.*

Key words: *sustainable development education, strategic abilities, project-based teaching.*

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CHALLENGES OF SUSTAINABLE DEVELOPMENT EDUCATION TO HIGHER EDUCATION IN LITHUANIA

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Introduction

The interaction between the individual and nature, the personality and society, society and nature has been the most fluctuating field throughout the history. Humankind faces new tasks in the process of adopting a scientific approach and behaviour in the altered environment. *An Agenda for the 21st century (1992)* set by the United Nations agrees that *'no nation can achieve this on its own; but together we can - in a global partnership for sustainable development'* (Agenda 21, 1992). Chapter 36 of the same document emphasizes the topic of education, public awareness and teaching which is an inter-divisional subject relevant to the implementation of the whole agenda for the 21st century and essential for sustainable development. The aim of this official paper is to create a holistic world view, to advance environmental culture and ethics, values and approaches, skills and ways of behaviour corresponding to the ideas of sustainable development and necessary for making effective decisions. The concept *sustainable development* became more succinct after it had been applied in economics and social and environmental fields. In 1992, after the approval of the Agenda for the 21st century, the commission of sustainable development approved important resolutions in the fields of education, public awareness and teaching in sessions 4 (1996), 5 (1997), 6 (1998) and 7 (1999). The General Assembly of the United Nations expressed an international commitment to the coordination of activities dealing with burning global issues



in the special session in 1997 and in the World Summit on Sustainable Development in Johannesburg in 2002. Implementation arrangement additionally confirms that the goal of the Millennium Declaration adopted by the United Nations is achievement of overall primary education before the year 2015. Concurrently, due to the implementation of global education, the Global Development Network was established in Dakar. The main objective of the latter was the removal of the differences between the sexes in schooling seeking to provide primary and secondary education before the year 2005.

In the Göteborg Summit, the Council of Europe highlighted that sustainable development 'is a fundamental objective under the Treaties' that 'requires dealing with economic, social and environmental policies in a mutually reinforcing way' and agreed on the EU strategy for sustainable development which 'adds a third, environmental dimension to the Lisbon strategy' in relation to economic and social renewal (Göteborg European Council, 2001).

Baltic 21 (1996) (An Agenda 21 for the Baltic Sea Region) and The Hague Declaration (2000) signed by 9 Ministers of Education of the Baltic Sea States Region including Lithuania as well as *The National Strategy for Sustainable Development* (2003) (Valstybinės švietimo strategijos 2003 – 2012 metų nuostatos, 2003) developed and approved by the Government of the Republic of Lithuania ratified our Government's commitment to embody the global tasks of education into the national educational programmes. Lithuania included 'sustainable development' as a particular chapter into the *White Book of Science and Technologies* defining the aims and tasks of the implementation of sustainable development principles. Qualitative management of all kinds of human activity as a learning subject-matter and as a functional method in a number of human activities is highly emphasized (Lietuvos mokslo ir technologijų Baltoji knyga, 2001).

On 27-30 October 2004, an International Symposium *Local Identity – Global Awareness* took place in Switzerland and set off the impact of globalization on the curricula of higher education as well as accentuated the new requirements imposed by imparting global knowledge to higher education. For instance, *progress in global awareness in the field of environmental protection depends on an educational system making a powerful influence on globalization. Therefore, the curricula designed for teaching globalization in different branches applied in the process of building awareness of the global environment and used for employing educational technologies must be developed* (Morgil, Morgil and Secken, 2004, p.607). The quotation stresses modern educational technologies and curricula.

The objective of research was to explore higher education in terms of issues and opportunities for sustainable development education:

The goal of the article is to reveal the problems of Lithuanian higher education implementing the challenges of sustainable development education and to carry out a thorough assessment of possible innovations in teaching techniques and higher education curricula.

The methods of research include a review of documents and literature, an assessment of higher education curricula and the surveys of the experts in the field.

Review of Higher Education Curricula

Assessment of two curricula carried out in Lithuania indicates that the inclusion of sustainable development into the academic teacher training programmes of the humanities and social sciences is not sufficient (Bulajeva, Duoblienė and Targamadžė, 2004).

In order to establish how deeply sustainable development has been incorporated into the courses of studies, 48 BA and 28 MA curricula designed at the University of Klaipėda, 53 BA and 21 MA curricula developed at the University of Šiauliai and 8 BA and 20 MA curricula planned at Mykolas Romeris University have been revised (Table 1).



Table 1. BA and MA curricula planned revised in different universities

	University of Klaipėda	University of Šiauliai	Mykolas Romeris University	Total
BA	48	53	8	109
MA	28	21	20	69

To achieve the purpose, the experts in the field involved with the above mentioned curricula have been surveyed. The BA curricula of the examined universities include some more modules, for example, the course on project management which emphasizes the issues of globalization and where sustainable development is taught as an integrated subject. The MA curricula cover sustainable development as an element of the students' research work. The experts in the field of the PhD curricula acknowledge that sustainable development education is included in the lecture material. A common feature that emerged is that sustainable development as a part of the university curricula is not treated holistically. The BA and MA curricula reflect only separate and sometimes unrelated elements of sustainable development.

Contemporary sustainable development education is expected to be:

- Focused on future-oriented development, ensuring proper quality of the present and future life;
- Based on the holistic approach towards environmental, economical and social development embracing the integration of the issues about democracy, equality and human rights into the curricula of environmental and social sciences;
- Aimed at cultural, social, economic and environmental diversity as well as for teaching peaceful ways of resolving conflicts;
- Opened for critical thinking and raising competence in activities;
- Promoting the development of cooperation and democracy, oriented towards community problem solving and solidarity; raising public awareness, increasing the importance of locally reached decisions and their impact on regional, national and global situation (Bulajeva, Duobliene and Targamadze, 2004, p.27).

The Stages of Studying Realia and Competencies

The process of education involves learning realia that can be structured agreeably to the following stages: strategy development, a social-pedagogical stage, an institutional stage, an interpersonal stage, an individual stage (Targamadžė, 1999). Obviously, a demand for sustainable development education has been highlighted at strategy development level for the whole decade. The goal achieved at the individual level of studying realia as an outcome of formal academic and informal education will be expressed by the alterations in the personal approach, awareness, knowledge and gained competencies. Therefore, an important point is building a more specific system of the competencies available for the learner in the process of studies. Sire (1996) lists:

(a) *Theoretical competencies* expressed through the knowledge acquired during graduate and post-graduate university studies.

(b) *Practical competencies* treated as methodological, technical and organizational skills, for example the skills applied to using the whole data into specific activity; the ability to process and practically employ information, the ability to reproduce and advance the process etc.

(c) *Social competencies* are acclaimed to be the individual's ability to be integrated into the organizational unit exercising individual skills, the system of beliefs and values, communication and management abilities as well as coordination and application of these skills in a certain environment.

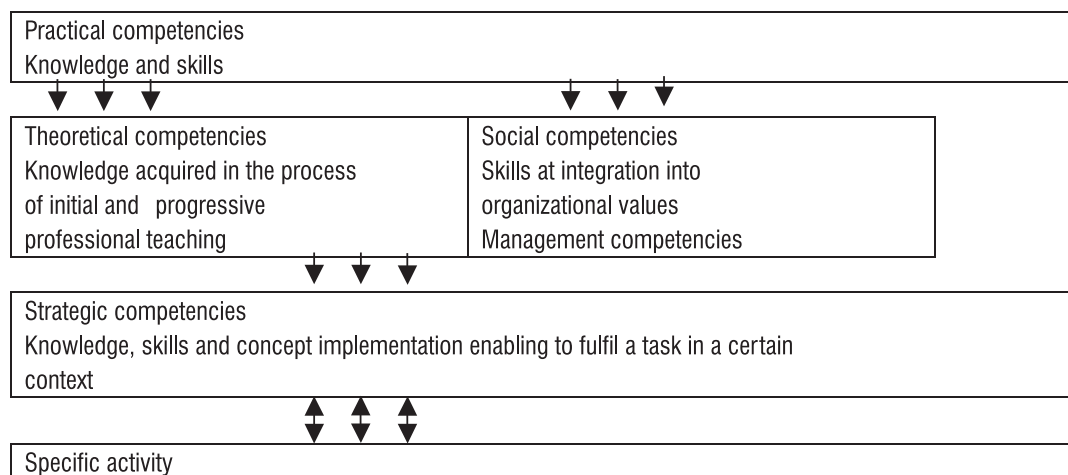
(d) *Strategic competencies* embrace the ability to mobilize knowledge, skills, abilities and



beliefs in discussing the problems of the particular organizational context i.e. basically this is the synthesis of gained theoretical, practical and social competencies which are more or less obtained in higher education establishments. However, strategic competencies become evident only as an outcome of work experience.

French scholar Le Botref (1998) suggests a two dimensional framework – a transversal horizontal and vertical dimension of competencies. The horizontal dimension enables to individually apply each component whereas the transversal one affects the evolution of all competencies (Table 2) (Tamosiuniene and Targamadze, 2004):

Table 2. Evolution of competencies.



Transversal competencies (practical, theoretical, social) are those advancing with the teaching stages. However, the horizontal bar of strategic competencies is a result of studies in progress and can be activated when the vertical qualities closely interact with the tasks of real life. Strategic competencies help graduates from universities and colleges to advance the transversal competencies required for their future life and professional carrier. Strategic competencies assist in promoting such important competencies which will be efficiently applied by human at certain life stages. The diagram defining strategic competencies indicates that the latter is the implementation of invisible knowledge and concepts. Thus, the results of sustainable development education are offered to be evaluated according to strategic competence acquisition at the stage of individual stage realia.

The article deals with the issue debating how social-pedagogical, institutional and interpersonal stages should be arranged for teaching sustainable development.

Project-based Teaching

Morgil, Oskay and Yavuz (2004) introduced the methods of teaching environmental awareness during the international symposium *Local Identity- Global Awareness* in Switzerland. Project-based teaching should be applied in case the traditional techniques were not appropriate. Teaching based on projects does not give prominence to the product but emphasizes the dimension of the process itself as well as provides the dimension for teaching that is an important point for the learner.

Besides the fact that project-based teaching is treated as a modern, non-traditional technique of teaching disclosing new opportunities for the learner and the teacher at the interpersonal stage, it also ensures greater clarity of studying realia at the institutional level because the project has to fulfil the mission of a certain organization, for instance university etc. The process of developing competencies of the students of BA, MA and PhD studies shows that work on one or



two projects is not sufficient, and therefore strategic development of competencies along the process of project management is necessary. Our experience reveals that a proposal to promote theoretical, practical and social competencies may be achieved at the last stage of a project, for example, during the implementation of the project results. Such teaching technique also raises new requirements at the social-pedagogic stage and requires new specific transformations of the teacher's approach towards the teaching process. This context is important for examining the correlation between the stages and for an attempt to create new opportunities for teaching sustainable development.

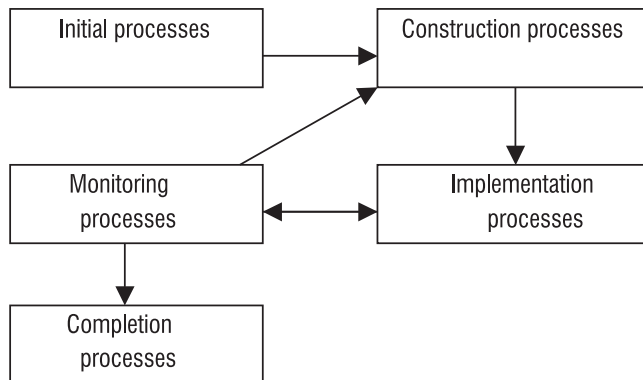


Figure 1. Correlation between the stages of the project (Neverauskas, Stankevičius, Viliūnas, Černiūtė, 2003).

Any stage of the project closely correlates with other processes of the project. The initial stage includes an important function of foreknowing the results and final actions (publication, distribution and consistency of the results, actions in progress, etc.) of the project. Initiation correlates with project construction, devising results, time, resources etc. Monitoring is relevant to the construction process (what are the criteria, evaluation procedures, scale etc.). Implementation and its monitoring, searching for the methods of implementation optimization and relating it to the completion stage are also weighty constituents. This short revision of the internal processes of the project maintains that cooperation between the teachers and the students and possible partners is crucial at the conceptual stage. The start of the process interrelates with ideas, the conceptual basis of the project and agreement with the participants or institution of the project etc. as well as with the technical economical basis of the project.

Thus, the conceptual (initial) stage of the project can also be used as a factor generating ideas for the students as well as for the teachers that are conceptually supported and as a component leading to project implementing situations in team organization work. The second stage of the project development involves the students, teachers and other partners' cooperation in debating the structure and implementation of work, dates, budget, preparation of documents and signing of contracts. This stage opens up opportunities for the students to theoretically perceive as well as to obtain practical, professional and social competencies. This is time for making connections between the conceptual and implementing parts of the project, a step that requires understanding of the project and the abilities to implement it. An important point involves focusing on the resources of the project, particularly on the human ones. The third stage promotes practical cooperation with the participants of the project and remarkably develops practical and social competencies. This stage involves the implementation of work on the project and integrates all management functions such as construction, organization, monitoring and motivation. The latter function requires scrupulous attention because human motivation is a complex and individual process having needs for special professional and social competencies. The process is supposed to be successful if a promising project group is formed from the people competent and able to



communicate with other members of the project or involved staff.

The fourth stage is project completion embracing the conclusion of the project results. This stage shapes the implementation of the results, the sequence of real life situations and the evaluation of the project. The participants, partners and agents of the project can employ this period of time for developing competencies in communication. The efficiency of the project is evaluated; every stage and version of implementation is critically reviewed. This stage can become a conceptual beginning or at least an idea for another project as reflection stimulates 'a rain of thoughts', new ideas and activities are foreseen and relationships are established. This is the way of promoting cooperation and building a system of interrelationship between the students and the teachers as well as among other participants. This system advances theoretical, practical, social and in some cases strategic competencies.



Figure 2. The role of the quality factor in the process of project management and implementation.

Sustainable development must be included into all stages of the project. Thus, it becomes a means and a parameter ensuring monitoring and reliability of both the process and the product. The plan of quality monitoring becomes a centrifugal force and a precondition of project efficiency and guarantees the existence of the project and the consistency of the results (Figure 2).

Methodology of Research

Research was undertaken in order to establish understanding of sustainable development and the approach towards teaching it adopted by the educators working in different educational institutions. A questionnaire was designed and introduced to the teachers working with the learners of different age groups.

Due to implementation of the scheduled goal, on the basis of the sources of scientific literature, the questionnaire was prepared and distributed among 1200 teachers studying at the Institute of Continuing Studies of the Universities of Šiauliai and Klaipėda. 1140 questionnaires were received. Research data was processed applying the SSPS computer program calculating rates and the criterion chi (χ^2).

The research sample.

Distribution of respondents according their work place is shown in figure 3.



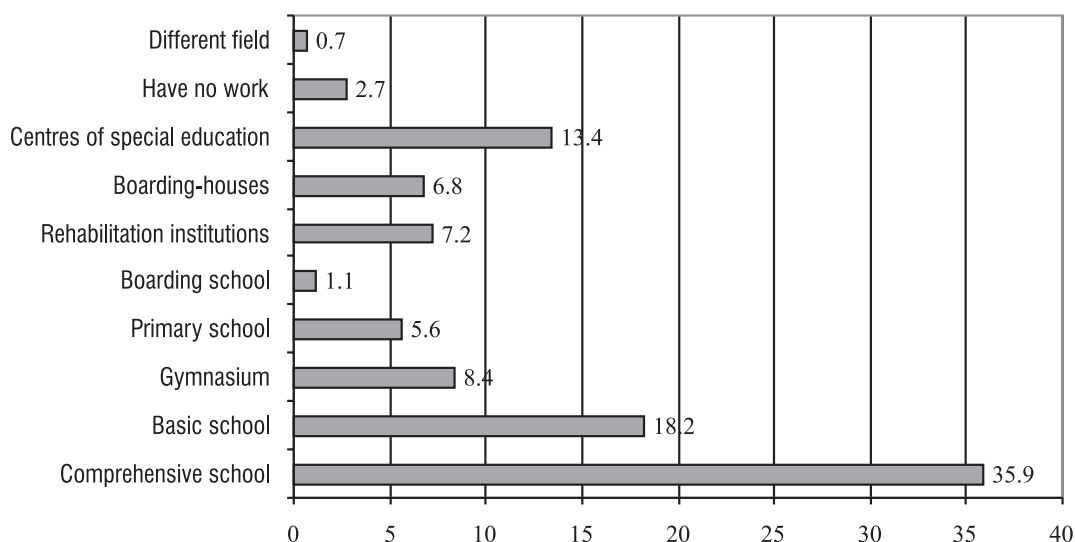


Figure 3. Distribution of respondents according their work place.

The majority of the teachers work in comprehensive (35.9%) and basic (18.2%) schools, some respondents - in gymnasium (8.4%) and primary (5.6%) schools. Thus, more than two thirds of all participants work in the educational establishments providing schoolchildren with proper education. Other respondents work in boarding schools (1.1%), rehabilitation institutions (7.2%), boarding-houses (6.8%) or in the centres of special education for people with severe disabilities (13.4%). Therefore, less than a third of the rest work in the institutions with proper education, health care and correction. A small number of the teachers (2.7%) have no work or work in a different field (0.7%).

According to seniority and duties, 36.6% of the participants of the survey are teachers, 20.5% - senior teachers, 4.8% - teachers methodologists, 0.9 - teachers experts, 3.6% - social pedagogues, 4.8% - social workers, 8.7% - mentors, 3.4% - executives, 9.8% - special pedagogues, 6.9% - speech therapists. Thus, the positions taken by the above named respondents in the educational and/or health care establishments vary.

All participants have received higher education at different periods of time. 20.4% of the teachers have recently (i.e. less than 5 years ago) graduated from such institutions, a similar part of the respondents (19.5%): 5-10 years ago, a slightly lesser number (14.1%): 11-15 years ago and the majority (22.2%): 16-20 years ago. 13.1% of the participants of the survey graduated from higher schools 21-25 years and 10.7% - more than 25 years ago.

The respondents graduated from different establishments of higher education in Lithuania and abroad. More than a third (38.7%) graduated from the University of Šiauliai, 15.3% - from the University of Klaipėda, 15.3% - from Vilnius Pedagogic University, 15.3% - from Vilnius University, 3.6% - from the Lithuanian Academy of Physical Education and 5.6% - from Klaipėda College. The great majority of the surveyed teachers graduated from Lithuanian higher schools training teachers. The minor part studied either abroad (0.9%) or at the institutions that do not or only partially provide educational basis for the graduates (3.6%) and included Kaunas University of Medicine (3.6%) and the Lithuanian Veterinary Academy (1.7%).

The majority of the participants are female (67.8%) while the rest of them are male (32.2%). They teach different subjects at their institutions. The larger part of the teachers works in primary school and teaches almost all subjects (23.6%). A lesser part (19.3%) teaches languages, 11.4% of the respondents - art subjects, 10.2% - mathematics, 9.3% - technologies, 8.3% - social sciences, 7.6% - natural sciences, 5.7% - physical education, 3.4% - information technologies and 1.2% have classes on morality.



Results of Research

Research involved a question about the respondents' knowledge of the concept 'sustainable development'. The majority of the participants stated having no understanding of it (53.1%). Correlational assessment proved that the concept was unfamiliar to all of those working in primary and boarding school as well as to the teachers having no work or dealing with a different field. Moreover, the concept is unknown for the employees of the rehabilitation and special education centres and boarding houses. Meanwhile, every second or third teacher of basic or secondary school understands the concept 'sustainable development' ($\chi^2=273.61$, $df=9$, $p<0.00001$).

It has been established that the concept 'sustainable development' is accepted only for teachers, senior teachers, teachers methodologists and teachers experts and there is no one on the list working as a mentor, an executive, a social worker, a social pedagogue, a special pedagogue or a speech therapist that was acquainted with the concept ($\chi^2=429.86$, $df=9$, $p<0.00001$).

The correlation between knowledge about the concept 'sustainable development' and the date of graduation from a higher institution was also investigated. It has also been discovered that the earlier the respondent graduated from a higher school the better s/he knew the concept 'sustainable development' ($\chi^2=474.38$, $df=5$, $p<0.00001$). Moreover, it has been found out that knowledge of the concept is determined by the graduates' higher institution of studying. Only a few graduates from Vilnius University have no idea about this concept. Most frequently the concept is not grasped by the graduates from the Universities of Klaipėda and Šiauliai which means that the educators of the latter establishments should better interpret the concept 'sustainable development' ($\chi^2=342.0$, $df=7$, $p<0.00001$).

Female rather than male teachers are not familiar with the concept 'sustainable development' as only less than one third of them maintain that they understand this concept. Meanwhile, males make about half of all participants ($\chi^2=281.46$, $df=1$, $p<0.00001$).

Understanding of the concept 'sustainable development' depends on the group of the subjects taught. All teachers dealing with teaching natural sciences, the subjects of social and moral education i.e. those inevitably discussing certain aspects of sustainable development affirm they grasp the concept. However, the teachers of languages, information technologies, arts or primary school subjects could hardly describe it ($\chi^2=269.2$, $df=9$, $p<0.00001$).

Research also showed the respondents' ways of acquiring information about sustainable development (Figure 4).

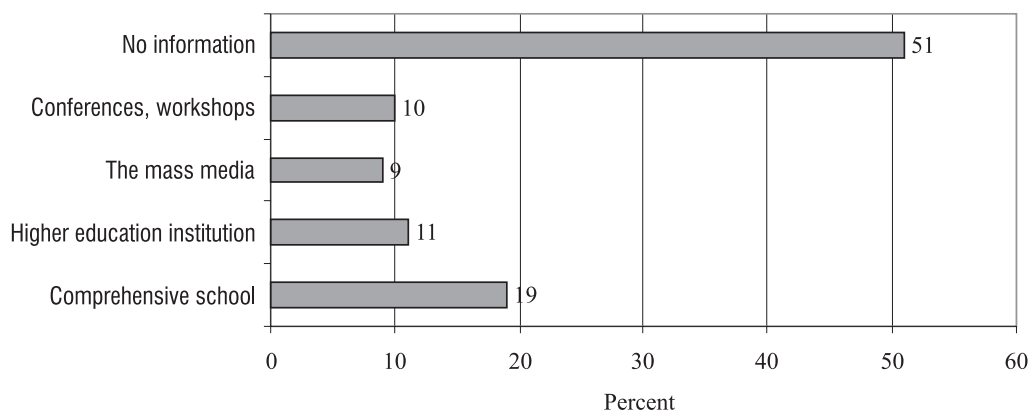


Figure 4. Sources of knowledge about sustainable development.

Almost one fifth of the teachers found out about sustainable development learning at comprehensive school, 10.7% - at higher education institution, 9% - from the mass media, 10% - at conferences, workshops, the centres of information and teaching. The rest of people had no information about sustainable development.



Research explored the respondents' possibilities of foreseeing improvement of understanding of the concept 'sustainable development'. When they were requested a proposal to advance the curricula of studies so that the issues of sustainable development should be given serious attention, the majority of the participants (59.3%) did not put forward any offers. The teachers working in gymnasias and comprehensive schools rather than in basic schools (28.8%) agree that the subject as an individual topic needs to be included into the modules of studies ($\chi^2=101.61$, $df=18$, $p<0.00001$). Moreover, such a position is more characteristic of all the females and only a half of the male respondents ($\chi^2=276.23$, $df=2$, $p<0.00001$). The others 11.9% accepted that sustainable development could be effectively taught in comprehensive schools, if an analysis of the format, techniques and content of methodology subjects could be performed.

The respondents were asked if they had enough information about sustainable development to explain its importance to their learners. In this case only one third of the participants of the survey reported they could do that (20.4%). This answer has been received from the teachers mainly working in gymnasias and comprehensive schools ($\chi^2=231.71$, $df=9$, $p<0.00001$). Moreover, none of the respondents that graduated from higher education institutions less than 5 or 15 years ago could describe sustainable development to schoolchildren. This seems to suggest that understanding of the concept 'sustainable development' and teaching methodology are given serious attention only quite recently ($\chi^2=275.79$, $df=5$, $p<0.00001$). Quite often the concept could be taught by the graduates from Vilnius University ($\chi^2=305.71$, $df=8$, $p<0.00001$). The latter participants most frequently teach natural and social sciences and mathematics.

The respondents were also asked if the schoolchildren in general needed to be introduced to 'sustainable development' as a subject. The results are similar to those discussed above. 5% of those surveyed find it obligatory. However, the teachers working in gymnasias and comprehensive schools ($\chi^2=234.45$, $df=9$, $p<0.00001$) and the graduates from higher schools ($\chi^2=279.24$, $df=9$, $p<0.00001$), Vilnius University in particular ($\chi^2=345.76$, $df=8$, $p<0.00001$), pointed it out most frequently.

Research revealed when the learners should be introduced to 'sustainable development' (Figure 5).

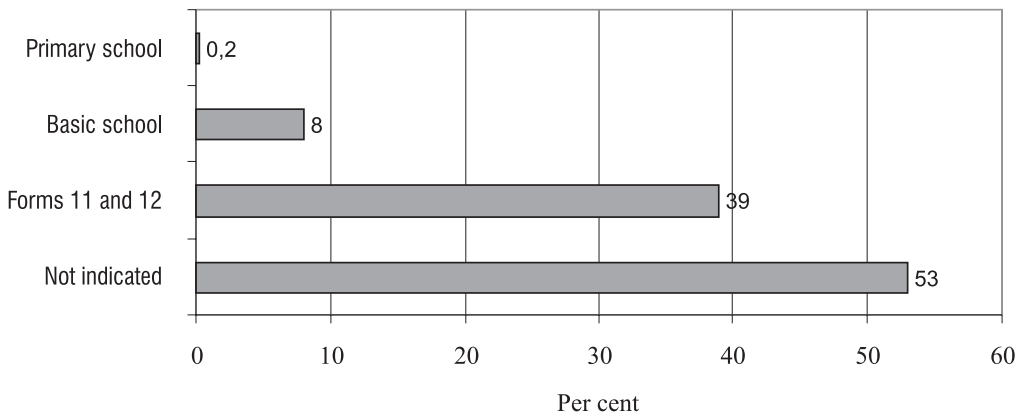


Figure 5. The respondents' opinion on when the learners should be introduced to 'sustainable development'.

The majority of the respondents (53.1%) did not give an answer. The others maintain that forms 11 and 12 (38.7%) and basic school (8%) are the most appropriate time. Only few participants (0.2%) state that it is possible to introduce it during the last year of primary school. A number of teachers working in gymnasias and comprehensive schools suggest the last two years of secondary school (forms 11 and 12) as a proper period of time for introducing the subject. Meanwhile, the other opinions of the staff working in different educational establishments varied considerably



($\chi^2=470.63$, $df=30$, $p<0.00001$). All teachers-experts, teachers-methodologists and a large number of senior teachers agree that only the learners of higher forms have to be introduced to 'sustainable development' as a subject ($\chi^2=336.71$, $df=33$, $p<0.00001$). The viewpoints of the respondents having other statuses differ. Furthermore, the graduates from the University of Šiauliai, Vilnius Pedagogic University and Vilnius University rather than from other higher schools support teaching sustainable development in higher forms ($\chi^2=375.13$, $df=21$, $p<0.00001$).

The respondents were also asked about the classes of the subjects discussing the points of sustainable development (Figure 6)

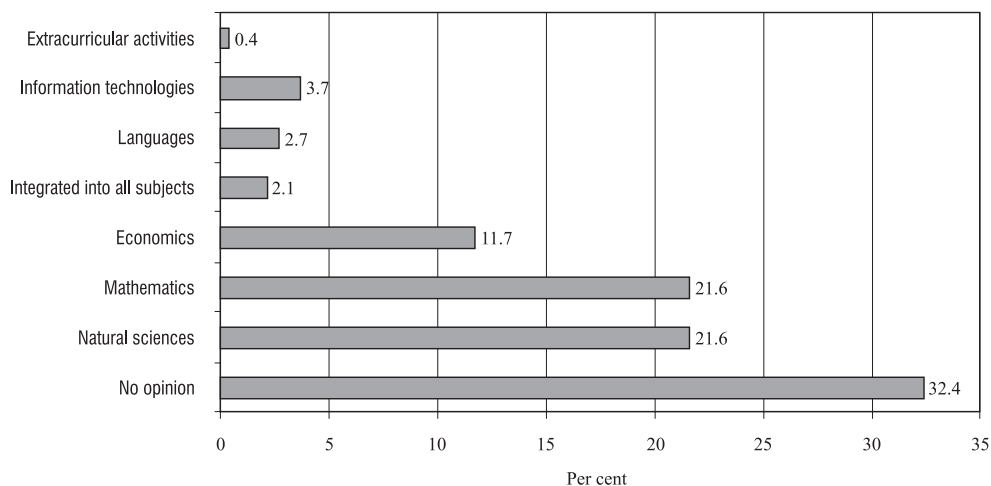


Figure 6. Classes discussing the points of sustainable development.

32.4% of the teachers did not express their opinion. The majority of others point out to natural sciences (21.6%), mathematics (21.6%) and economics (11.7%). A few respondents state that the conception of sustainable development must be integrated into all taught subjects (2.1%). The rest of those surveyed mention languages (2.7%), information technologies (3.7%) or extracurricular activities (0.4%). The ideas about sustainable development most frequently should be introduced by the staff working in gymnasias or comprehensive schools during the classes on mathematics and natural sciences or employing integrated teaching ($\chi^2=250.9$, $df=70$, $p<0.00001$). The teachers of mathematics suggest that they themselves have to present the subject during the classes while the teachers of natural sciences often consider it an obligation. The respondents dealing with social sciences regularly indicate the classes on nature as an effective way of teaching the subjects of sustainable development. Integrated teaching is more acceptable to the teachers of languages rather than to those of other subjects ($\chi^2=231.51$, $df=63$, $p<0.00001$).

Conclusions

Teaching sustainable development is a new challenge to Lithuanian higher education. The task can be properly implemented in relation to all stages of teaching realia: an initial stage of strategy submits the issues and proposals relevant to the topic as well as provides a legal basis for tackling them. The social-pedagogical stage must impose the requirements to establish the stage of competence at different levels of education such as secondary school (including basic and vocational schools), formal higher education (universities and colleges), informal system (centres of teaching and culture etc.) and the public system (museums, means of public information etc.). The curricula and modules of studies at the institutional level must be prepared for training the experts in sustainable development. The interpersonal stage must ensure the optimal implementation of the goals through the chosen subject-matter, format and techniques as well as through the evaluation of the learners.



The focused individual stage treats a person's individuality and evaluates his/her dynamism, personal point of view, opinion and competencies.

The project-based technique of teaching is recommended to achieve the above mentioned goals and to optimize teaching sustainable development in the establishments of higher education. The technique creates an opportunity to integrate various subjects and to promote cooperation between scientists, teachers and students. It produces conditions of adjusting actual knowledge and practical competencies, and thus makes certain that the would-be experts will gain competencies needed to implement the principles of sustainable development.

The conducted survey shows that more than a half of the teachers having no work, working in primary and boarding schools, dealing with a job different from teaching are not familiar with the concept of sustainable development. The male respondents graduated from higher schools, Vilnius University in particular, more than 15 years ago, working in gymnasias and comprehensive schools, having teacher, senior teacher, teacher methodologist or teacher expert seniority and teaching natural and social sciences and mathematics have the best grasp of the concept. The participants of the survey often enough obtain information about sustainable development at higher school.

A great number of the respondents, particularly female-teachers and persons working in gymnasias and comprehensive schools and having understanding of sustainable development suggest including this subject as an individual topic into the curricula of studies.

Only the fifth part of all surveyed people could explain the concept of 'sustainable development' to schoolchildren. Those graduated from higher schools, Vilnius University in particular, more than 15 years ago and working in gymnasias and comprehensive schools could be able to most appropriately discuss the issue with the learners. They also most frequently acknowledge the importance of interpreting sustainable development to the students. The majority of them, depending on the field of activity, put forward proposals for the learners of higher forms to introduce sustainable development during the classes on natural sciences, mathematics and economics or to integrate knowledge of sustainable development into all taught subjects.

References

- Agenda 21. (1992). Online: <http://www.un.org/esa/sustdev/documents/agenda21/index.htm>
- Baltic 21. (1996). Online: <http://www.baltic21.org/> Accessed on September 2005.
- Bulajeva, T., Duobliene, L. and Targamadze, V. (2004). Master study programmes of teacher education in Lithuania regarding sustainable development. *Journal of Teacher Education and Training*, Vol.4. pp. 25-35.
- Göteborg European Council. (2001). Online: http://europa.eu.int/comm/gothenburg_council/index_en.htm. Accessed on September 2005.
- The Hague Declaration. (2000). Online: <http://odin.dep.no/md/nsc/declaration/022001-990244/index-dok000-b-n-a.html> Accessed on September 2005.
- Johannesburg Declaration. (2002). Online: <http://www.un.org/esa/sustdev/documents/docs.htm> Accessed on September 2005.
- Le Boterf, G. (1998). *Le 'ingenerie des competences*. Paris: Edition d'Organisation
- Lietuvos Nacionalinio veiksmy plano gairės. (2003). [The National Strategy for Sustainable Development] Online: <http://www.smm.lt>.
- Lietuvos „Švietimo visiems“ veiksmy planas. (2000) Online: <http://www.smm.lt>. Accessed on September 2005.
- Lietuvos mokslo ir technologijų Baltoji knyga. (2001). Online: <http://www.smm.lt>. Accessed on September 2005.
- Morgil, I. Ozyalcin, O. and Yavuz, S. (2004). The Effects Of Project-Based Learning Applications on Environmental Education. 33. *International Symposium IGIP/IEEE/ASEE*, 80-84.
- Morgil, O., Morgil, I. and Secken, N. (2004). Globalization in Higher Education and Forming Global Environmental Awareness. 33. *International Symposium IGIP/IEEE/ASEE*, 607-611.
- Neverauskas, B., Stankevičius, V., Viliūnas, V. and Čerņiūtė, I. (2003). Projektų valdymas. Kaunas: Technologija.
- Sire, B. (1996). Clarifier L'Evaluation Des Competences. *Revue Personnel*. NO 7.
- Tamošiūnienė, L., Targamadžė, V. (2004). Strategic Competencies as Bridging Means between Formal University and Non-formal Education. *International Conference on Engineering Education and Research: Progress through Partnership*.
- Targamadžė, V. (1999). Bendrojo lavinimo mokykla: Mokinių edukacinio stimuliavimo aspektas. Kaunas: Technologija.
- Švietimo ir studijų programų registras. (2004). Online: <http://www.mokykla.smm.lt/statistika/>. Accessed on



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Valstybinis švietimo strategijos 2003 – 2012 metų nuostatos. (2003). Online: <http://www.smm.lt>. Accessed on September 2005.**Резюме****ВЫЗОВЫ ОБУЧЕНИЯ СБАЛАНСИРОВАННОМУ РАЗВИТИЮ ТРЕТЬЕЙ СТУПЕНИ СИСТЕМЫ ОБРАЗОВАНИЯ ЛИТВЫ****Лидия Ушыцкене, Вилия Таргамадзе**

Взаимодействие между индивидом и природой, индивидом и обществом, обществом и природой – это области, претерпевшие наибольшие исторические изменения. Обучение новому отношению к окружающей среде представляется актуальным для исследователей и преподавателей многих стран. Естественные науки, хотя и являются важными, но без абстрактных знаний о мире они не способствуют повышению значимости непрерывного образования. Документ ООН Агенда 21 (1992); Мировое соглашение по непрерывному образованию в Йоганесбурге (2002); Декларация тысячелетия ООН; Дакарское соглашение «Образование для всех» (2000); Европейский Совет в Гетеборге (2001); Балтика 21 (1996); Гагская декларация (2000); Белая книга информационных технологий (2001); Национальная стратегия непрерывного образования (2003) – это список фундаментальных документов, определяющих актуальность непрерывного (пожизненного) образования на различных уровнях. Целью данной работы является определение проблем, стоящих перед третьей ступенью непрерывного образования, а также представление возможных инноваций в области методики и составления программ на данном этапе образования. Образование, в нашем понимании, может быть сконструировано из следующих ступеней: политики формирования, социально-педагогической, институциональной, интерперсональной, интраперсональной. Проблема, поднимаемая в данной работе, состоит в выделении наиболее оптимальной подготовки перечисленных ступеней для непрерывного образования. Наше внимание сосредоточено на гуманитарных и социальных науках, хотя традиционно приоритет принадлежит естественным наукам, так как аполитичный контекст их обычно должен сбалансировать включение в программы обучения предметы гуманитарных и социальных наук. С целью определения степени включения предметов гуманитарных и социальных наук в программы непрерывного образования рассматриваются бакалаврские и магистерские программы Клайпедского, Шяуляйского университетов и университета права Литвы; обучение в докторантуре анализируется при помощи метода интервьюирования экспертов, принимающих участие в реализации данных программ в качестве преподавателей.

Изучение, основанное на проектной деятельности, рассматривается как новый нетрадиционный метод, открывающий новые возможности взаимодействия между преподавателем и обучающимся в условиях большей видимости институциональной ступени обучения. Данный метод преподавания также выдвигает новые требования к социально-педагогической ступени, а также к особым преобразованиям в области преподавания.

Ключевые слова: образование сбалансированному развитию, проектное обучение, программы обучения.

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