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EDUCATIONAL ACTION RESEARCH FOR SUSTAINABILITY: CONSTRUCTING A VISION FOR THE FUTURE IN TEACHER EDUCATION

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Abstract

This article discloses a fragment of a broader action research aimed to design the learning environment facilitating the research skills in teacher education. Presented case reflects the possibilities to construct a vision for the future in an educational action research in the context of four-dimensional model of sustainability. The next teachers used this model to structure their viewpoints on the sustainability situation in Latvia. They identified the most typical features of current situation and evaluated features worth to preserve and develop in the foreseeable future to reach the sustainability. Qualitative and quantitative data analysis endorsed to discern the common vision for the future – reflecting the features of sustainability and non-sustainability identified in each dimension of sustainability. Among the features singled out from the viewpoints of students, actions and action results prevailed. At the end of the action research the strategy employed in presented research was compared with one often employed in the public space to construct a vision for the future through community involvement.

Key words: *educational action research; sustainability; teacher education; future vision.*

General context of research

The given research is conducted drawing on the most essential feature of educational action research – instigation of reflection. Currently teacher education focuses on the preparation of teachers for reflective practice and suggests that teacher conducting reflective professional activities has to be also a researcher. It is argued that teacher has to be educated as the action researcher. The reflective nature of teachers' professional activities is accepted as self-evident by educational researchers (Kyburz-Graber et al., 2006). Discussions and studies on teacher as researcher and conditions for the realization of this professional function of teacher are in progress (Gray et al., 2007). In line with it, recently the debates have started about the usage of action research in teacher education, teacher professional activities and designing of school environment (Hoy, Tarter & Woolfolk Hoy, 2006; Grišāne, 2007).

The action research already for a long time has warranted its potential as a tool to diminish the hindrances for the solutions of complex issues in society. Exploring the

historical sources of action research, Neilsen (2006) indicates that the introduction of concepts of action research and social action research and distinction of these concepts is owed to J. Collier and K. Lewin. Colliers made a larger emphasis on democratic cooperation while Lewin approached these concepts in more empirical way. Analysing the principles of action research designed by Lewin, Bargal (2006) quotes Lewins' idea that "there is nothing more practical than a good theory" (p.384) therefore acknowledging the epistemological essence of action research.

Besides, there is a view suggesting that the theory by Dewey (1916) can be perceived as an introduction to the idea of action research (Bargal, 2006).

Onset of action research has influenced the educational research giving the chance to expand the inquiry with the epistemology that uses the experienced, practical and fosters the creation of constructs necessary for problem solutions (Dick, 2006). Undoubtedly, any action research has a potential for designing the research and learning environment, however, the closer inspection suggests that educational action research is dominating over the other types of action research (Dick, 2006; Pipere & Salite, 2006). Educational action research envisions the improvement of quality of action in education while "taking a systematic look at some educational practice and recording what was done, why it was done, collecting data, analyzing the data and reflecting on how the results might influence future teaching endeavors" (Action Research Network, 2005). Educational action research is covered in a wide scope of sources designed for teachers and young researchers willing to study their own experience. This literature envisages the growing trend toward the acknowledgement of developmental dynamics from the personally relevant experience to personally relevant theory (Whitehead & McNiff, 2006). The changes, transformation and innovations are keywords in the literature on action research.

The action research can be used for instigation of sense and awareness of sustainability since some authors call the participative action research "an antidote to oppressive forces" or "a form of resistance to all forms of control limiting our freedom to pursue a reasoned, compassionate, committed and democratic knowledge base" (Pyrch, 2007: 199). Action research is also recognized as a tool to diminish the influence of contemporary "culture of fear" (Pyrch, 2007), which is clear evidence of unsustainability of present situation.

The experience collected regarding the application of action research lately has been extended with a new suggestion – to develop the action research pedagogy (Brydon-Miller, Greenwood & Eikeland, 2006) discerning its capacity for the improvement of practice while deepening the common understanding about the topical issues and reviving meaning in teacher education (Hostetler, Macintyre Latta & Sarroub, 2007).

One of the most viable advantages of action research is reflective learning environment it offers for research participants. Higher education is becoming more and more interested in learning and learning environment based on activity and reflection. Rising interest of universities in action research has been invoked by local and global changes challenging the higher education to undertake the unique responsibility for the solution of developmental issues. The action research entered the higher education as a deeper approach to learning used both to deliver the university study courses (Peters & Gray, 2007) and to implement the study programmes (Taylor & Pettit, 2007).

Taylor and Pettit (2007) characterise the usage of experiential action research in the programs of higher education from the point of view of university teachers: "We

found that we need, as educators, to move beyond a narrow methodological or pedagogical approach in order to teach action research. We need to understand and work actively with the multiple dimensions and levels of learning and knowledge involved in transformative action research" (p. 244). The action research is used as a context in (1) organizing the work of doctoral study programs (Peters & Gray, 2007), (2) engaging the university teachers in reorientation of teacher education toward the aim of sustainability (since 2000 UNESCO/UNITWIN project by York University) and (3) locally – in the education of university teachers (Barazangi, 2007).

Levin and Martin (2007) tried to reveal the experience of teaching action research in universities asking (1) How do you teach someone to be an action researcher? and (2) How does anyone learn to be an action researcher? The authors have concluded that there is no reflection in research literature on how one is learning to conduct the action research and how we develop skills necessary for action research.

Action research is not a single method; it is a strategic approach to knowledge production, integrating a broad array of methods and methodological approaches. It suggests different specific ways to create new understanding and construct new knowledge. In this process, various feelings of research participants play an important role. Enosh, Ben-Ari, and Buchbinder (2008) are convinced that different feelings are starting point for the production of knowledge if the construction of knowledge is viewed on the levels of ontological, epistemological, and moral analysis.

The action research has a long history in teacher education. The necessity for it is voiced not only in publications analysing the results of action research but also in the studies focusing on the problems of teacher education and teachers' professional activities (Allan & Clark, 2007; Brady, 2000; Graham & Phelps, 2003; Gray, Chang & Radloff, 2007; Harpe & Radloff, 1999).

Specific context of research

In the Daugavpils University, action research conducted in the context of teacher education aims to design the learning environment as a catalyst for the development of research skills of teachers both in pre-service and in-service teacher education programs (Salīte & Pipere, 2006; Pipere & Salite, 2006; Salīte et al., 2007). The main aspiration conducting the educational action research here is to develop teacher education oriented toward sustainable development. Education with such an aim is inclined toward the quality of sustainability. In the teacher education such quality can be reached by the pre-service and in-service teachers' ability to explore the real situation and to design the learning environment fostering the sustainability in education.

Sense of sustainability and conviction about it are linked with the nature of pre-service and in-service teachers' subjective beliefs. The subjective beliefs along with several other sources maintain the teachers' activities in the context of sustainability. The research by Levin and He (2008) confirms that teacher education programs can influence the future teachers beliefs about the most significant aspects of teacher's work and they successfully do so.

In the presented educational action research, the research activity involving both research participants and researchers is used as a learning environment. During the previous activities of larger action research, the research participants already learned about the oppositions as a means of activity stimulation (when discussing ecological/

non-ecological person, well-organised/poorly organised democracy, sustainability/unsustainability) (Salite et al., 2007).

Research and learning environment was organised using the interrelated four-dimensional (ecological/economic/social/cultural) frame of reference for sustainability (Hawkes, 2001). Without putting the emphasis on any of the dimensions this model was suggested to research participants to help them describe the current sustainability situation in Latvia. Therefore, non-oppositional stance for identification and evaluation of the students' individual experience, were applied at first. The participants used their personal experience and beliefs to select the content that would characterise the current situation with sustainability in Latvia.

Study was organised in two subsequent stages to identify:

(1) next teachers' views on the current sustainability situation in Latvia and their future vision of the situation in 2030 using the non-oppositional stance toward the different dimensions of sustainability;
(2) evaluation of application of non-oppositional and oppositional (dilemma) stance in research and learning activity oriented to sustainability.

The second stage was instigated by the current events in the social-political space of Latvia. Today, the oppositional (dilemma-based) approach is rather popular in political discussions and various forums in Latvia. During such activities, discussions are often initiated and directed by a dilemma (at the early stage of the discussion, participants encounter a fragmented and split interpretation of a complex issue that has a complimentary nature) and the participants of the discussion are invited to choose the most significant aspect of the content (phenomenon) as well as comment on and substantiate their choice. Forum managers often comment on the dilemma by illustrating it with the contexts that are popular in society.

Educational action research: cooperation of researchers and research participants

Stage 1. Features of sustainability/unsustainability in four-dimensional model of sustainability

During this stage, research activity was oriented toward the discussion on the issue currently topical in Latvia "Our future vision of Latvia in 2030". In order to construct the vision for future, the research participants were involved in a constructive activity using the above-mentioned four-dimensional model of sustainability with a non-oppositional stance.

The research participants (N=114) – full time and part-time first year students of pre-school and basic school professional teacher education programmes could perform the activity individually, in pairs or in groups of three.

Initially, ***participants*** were asked to select freely any characteristic features for the different dimensions of sustainability.

They recorded their views on (1) the most typical features of the current ecological/social/economic/cultural situation in Latvia and (2) specified the views on their future vision of Latvia in 2030. Seventy-five records were obtained with 525 features in each of the dimensions and 2100 features in all four dimensions of sustainability.

The clarification of own views on the most typical features of the ecological/social/economic/cultural situation in Latvia allowed the students to prepare the answers on further questions: (1) immediate objectives for implementing sustainability; (2) immediate objectives for reorienting education to address sustainability; and (3) future vision of Latvia in 2030.

Researchers qualitatively analysed the features provided in each dimension and encoded them into categories and subcategories. The features (N=2100) were also analysed quantitatively in order to define the differences in groups of features that the research participants used to construct their future vision. The quantitative and visualized results (see Figures 1-5) were offered to research participants for further discussion and evaluation.

Stage 2. Evaluation of dilemma situation and comparison of approaches to investigation of sustainability

During this stage the ***participants:***

(1) learned about the proceedings of the regional forum organized within a national discussion (the forum used the dilemma strategy splitting and selecting the complementary parts of a phenomenon);
(2) evaluated the dilemma situations that were proposed in the forum and argumentatively selected one of the proffered dilemma variants. The dilemma situations were related a) to the priority of global or local development in the context of sustainability and b) to the inclination toward regulative activity of the state or respect for the individual freedom in the context of sustainability;
(3) compared non-oppositional and dilemma approaches and determined which of them is more authentic for application when creating research and learning environment oriented towards sustainability.

Researchers qualitatively analysed the data obtained in this stage of action research.

Quantitative and qualitative analysis of the results

Stage 1.

Qualitative analysis of data permitted to discern easily two categories in all four dimensions of sustainability: namely, sustainable and unsustainable features. Though, the features of sustainability were mentioned more often than features of unustainability (see Figure 1).

In cultural, social and ecological aspects of sustainability the research participants identified the situation in Latvia according to the features of sustainability, whereas in economical aspect – mainly stressing the features of unsustainability.

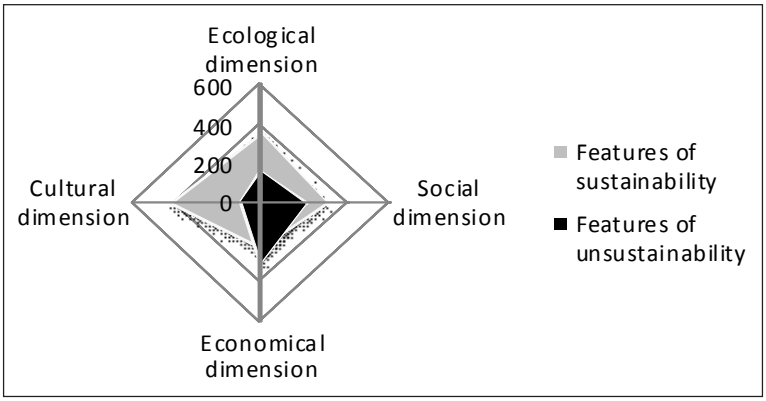


Figure 1. Current situation in Latvia according to the features of sustainability/ unsustainability (N=2100)

The analysis of features of sustainability/unsustainability revealed three qualitative subcategories: features that characterise *attitude*, *action* and *action results*. Concerning the level of subcategories, a detailed perspective on each dimension of sustainability in contemporary Latvia was discerned (see Figures 2-5).

Research participants identified the ecological situation (Figure 2) mainly as sustainable one drawing on features that characterise *attitude* and *action*. Unsustainability in the ecological situation was identified mainly as the *result of activity*.

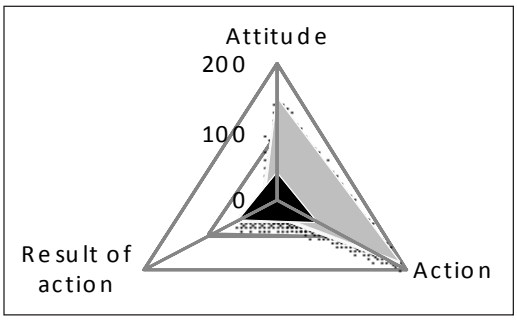


Figure 2. Sustainable/unsustainable attitudes, actions and result of action in the ecological dimension (n=525)

Research participants mostly identified the social situation (Figure 3) as sustainable one by drawing on features that characterise *attitude* and *action*. Unsustainability was identified in the result of a social *activity*.

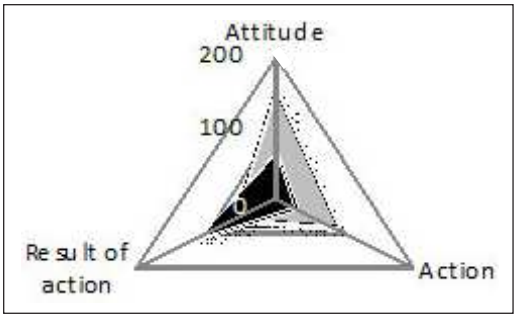


Figure 3. Sustainable/unsustainable attitudes, actions and result of action in the social dimension (n=525)

Research participants mainly identified the economic situation (Figure 4) as unsustainable one. Features of sustainability were used to characterise *attitude* and *action*, and these features were the least frequent in this dimension of sustainability.

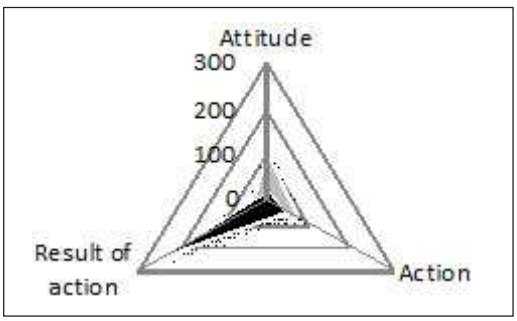


Figure 4. Sustainable/unsustainable attitudes, actions and result of action in the economic dimension (n=525)

The situation in the cultural dimension (Figure 5) was clearly identified according to the features of sustainability that were observed in sustainability-oriented *attitude*, *action* and *result of action*. Unsustainability at a low level can be discerned in the *activity results* of the cultural dimension.

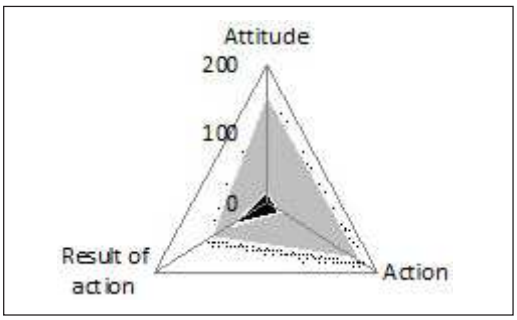


Figure 5. Sustainable/unsustainable attitudes, actions and result of action in the cultural dimension (n=525)

Research participants constructed their vision of future in the following way:

(1) Articulating their views on the immediate objectives that have to be implemented to foster the development of sustainability. Thus, the participants proposed various transformations of the current situation in social sphere and culture. Few suggestions pertained to the economic sphere.

(2) Setting the immediate objectives for reorienting education towards sustainability. Much more suggestions pertained to participants' further or current activity (part-time students). It was observed mainly in the social and cultural spheres, and slightly less in the economic and ecological ones.

Building on these two aspects, the research participants constructed their future vision of 2030 revealing great hopes and believes in the changes of social and cultural relations, whereas students' hopes for transformation of economic and ecological relations were less pronounced.

Stage 2.

In this stage research participants studied the proceedings of the regional forum where a discussion of the future vision was initiated by using a dilemma strategy. They evaluated the essence of this approach and tried to substantiate their choice of one of the two proffered variants of the dilemma. The participants of the research formed the fourteen workgroups at this stage.

Dilemma approach to the forum proceedings was suggested in order to evaluate:

(1) participants' ***inclination toward the global or national development*** from the perspective of sustainability. Eight workgroups oriented their vision of future toward the global development, whereas five workgroups associated sustainability with the national development. One workgroup could not choose single direction and justified it in the following way: *both surmounting the barriers of age and strengthening social identity create a perspective of a bright future.*

(2) participants' ***inclination toward regulative activity of the state or respect for the individual freedom*** in the context of sustainability. Five workgroups supported the need for the state to perform its regulative function; the idea of individual freedom was advocated by four workgroups, while five workgroups discerned the interconnection and mutual complementarity of these two principles.

Concluding the Stage 2 the research participants compared non-oppositional and oppositional (dilemma) approaches and determined which of them is more valid for application when creating research and learning environment oriented towards sustainability.

Four workgroups described the dilemma approach like this:

> *it is easier to discuss a certain choice, ... easier to discuss the issues within a familiar trail, ... the approach is good if one wants to lead a conversation in a particular direction, ... if one does not understand where the problem is and how to solve it, then this approach provides options so that one can decide 'for' or 'against'.*

Ten workgroups recognised non-oppositional stance as a more suitable for constructing the vision of the future:

...because four dimensions of sustainability provide a better chance to define one's opinion rather than a choice from what is offered by others, ...one can see the specificity of the problems, distinguish diverse experiences (sustainable and unsustainable) ... look for the essential features rather than choose from what is offered ... possibility to find the essence in all spheres of life, no constraints ... a chance to express an opinion on personal problems and experiences ... suitable for those who have their own ideas ... a more comprehensible record structure, a chance to express one's opinions ... one does not have to make a choice between the specific items provided by others and can think independently ... a simplified approach ... a more comprehensible approach for defining one's opinion ... this approach is more suitable for choosing the future of our country ...the model easily structures experience, is visually attractive, everything is structured, one can see the general perspective ... one does not need to make a choice, instead, it is possible to build on personal experience, ... one can easily locate the problems and find ways to solve them ... one can easily identify features of sustainability in each of the dimensions ... it permits to identify questions that need to be answered ...one can find a more personalised, in-depth and comprehensive vision of the future ... it helps to distinguish more nuances and to comprehend a sustainability more deeply ... it unites people and calls for the preservation of traditions and diminishing aggression...

Conclusions

Reorienting the teacher education toward the aim of sustainability in dynamic and often unsustainable conditions of current society asks for responsible choice of means and approaches to organisation of learning. The choice of means for reaching this aim can either increase the interest and strengthen the links with research and learning needs or just hinder such a link. In this study, the non-oppositional and dilemma approaches were used to instigate research and learning situations. Both approaches had their advocates among the research participants, and still they were evaluated differently:

- dilemma approach was recognised as an approach suggesting ready-made trails already from the beginning and facilitating the choice of content by focusing on the proffered solutions and formulation of the future vision. Research participants called such a technique of initiating discussion simplified and shallow;
- non-oppositional means was recognised as a more comprehensible, easier perceivable frame of reference for organising research and learning activities that permits to structure one's experience and beliefs, reveal problems and distinguish factors restrictive for development and further directions of development.

While instigating research and learning activities and arousing interest in building a shared future vision from the perspective of sustainability, the non-oppositional approach gives an opportunity to discern the sustainable and unsustainable experience and its roots (attitude, activity and activity results) in the ecological/social/economic/cultural frame of reference of sustainability.

Nowadays, both globally and in local societies, the understanding of sustainability and unsustainability differ considerably. Intensive learning and attempts to understand the essence of these complex phenomena take place. In education, and teacher education in particular, it is necessary that the idea of sustainability is discovered and accepted in the students' minds as their personal and interest-sustained idea. In the conditions of heterogeneous social situations, we need to organise the research and learning environment for teacher education and education per se where action learning, action research, building a shared vision and decision-making represent the most typical solutions. Their functioning depends on the choice of means that initiates these research and learning activities and becomes the basis for decision-making support system that affects the individuals involved in these activities directly or indirectly influencing their interest.

While creating a learning environment that would promote interest toward the sustainability, the use of interest-sustaining means has a crucial importance for building a shared vision and for the form and content of sustainability used as a frame of reference. In educational action research, we can apply the alternating and participant-created view of sustainable development and sustainability and, by using certain means, broaden and deepen the existing outlook of participants. The means can generate various directions and as such either stimulate the participants' interest in the process of building their own and shared vision or suppress the interest in this activity.

This educational action research identified the need for critical choice and use of means, in order to consider and study their influence on the process of research and its aim as well as on building a shared vision for future. It also necessitates evaluation of the learning outcomes from the perspective of sustainable and unsustainable education that can be distinguished in the inclusive or exclusive approaches. This is one of the possible ways for the further development of teacher education oriented toward sustainability.

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